Sudan University of Science and Technology

College of Education

كلية الدراسات العليا

Computer-Assisted Approach to Enhance Natural Informal Acquisition of Vocabulary

مدخل لتقوية اكتساب المفردات الانجليزية بطريقة طبيعية تلقائية بمساعدة الحاسوب

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Dedication

To my family

Acknowledgements

Abstract

This study is basically an investigation into the natural approach as a learning and teaching theory in an informal environment and CALL games in vocabulary acquisition. It seeks to achieve these objectives: through the investigation of the impact of the proposed learning and teaching program to grade six students in Sudan, investigating teacher's attitude and to present how training helps them. Grade six students from Sinnar Sugar Co. basic schools were a sample of 70 students. The study was aimed to revealing the effectiveness of the natural approach as a learning theory and CALL games as a technique. The experimental group (EG) consisted of 35 students; and the control group (CG) consisted of 35 students in the experiment. There were 35 English teachers who volunteered to participate in the attitudinal questionnaire. The findings of the study indicated that there were statistically significant differences between the experimental group and the control group. The relatively high mean score of the experimental group was likely due to the effect of the proposed teaching and learning program. Teachers seemed to have positive attitudes towards three points: the natural approach, informal environment and CALL games in improving vocabulary acquisition. Teachers are advised to place more emphasis on the CALL games which, if employed skillfully, will motivate students because they will be more interested in learning material. 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 vocabulary instruction.

المستخلص

Abstract (Arabic Version)

تناولت هذه الدراسة المنهج الطبيعي في بيئة تعليمية مرحة وتنافسية عن طريق استخدام ألعاب المفردات الحاسوبية لاكتساب المفردات الإنجليزية. وتهدف إلى استقصاء تأثير البرنامج التعليمي والتدريسي المقترح على طلاب الصف السادس أساس في السودان، وموقف معلمي اللغة الإنجليزية تجاه البرنامج. كما تهدف إلى توضيح تأثير الطريقة الطبيعية كنظرية تعلم، واستخدام ألعاب المفردات الحاسوبية كوسيلة تدريس. مجموعة التجربة (35) ومجموعة التحكم (35)، كما يوجد (35) معلماً ممن تطوع للمشاركة في الاستبيان. أوضحت النتائج أن هنالك اختلافا بين مجموعة التجربة والتحكم، ناتج عن إدخال البرنامج المقترح. وجاءت مواقف المعلمين إيجابية تجاه البرنامج المقترح.

توصي هذه الدراسة معلمي اللغة الإنجليزية باستخدام ألعاب المفردات الحاسوبية, لأنها لو وظفت جيداً, ستحفز الطلاب لأنهم سيكونون أكثر اهتماماً بالمادة التعليمية. كما يجب ألَّا ينحصر تدريب المعلمين في كيفية

استخدام التقنية فقط, بل يتخطاها إلى كيفية استخدامها في تحسـين جـودة

وفعالية تدريس المفردات الإنجليزية.

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INTRODUCTION

CHAPTER ONE

INTRODUCTION

1.0 Overview:

One of the most difficult aspects of learning a foreign language is the task of vocabulary building. Vocabulary learning plays a major role in English Language learners' success. Teaching English to the young learners is not an easy task because English is not their mother tongue so they need to be motivated as well as setting clear objectives and aims. Raising students' performance in learning English is a key factor in foreign language teaching. Using Call in an informal learning environment incorporated with vocabulary games is an effective way to maximize vocabulary learning process. Grade six pupils are given the opportunity to build their vocabulary through both CALL games and informal environment in the course of using a technology.

There are a lot of ways to introduce English vocabulary to the young learners. The Natural Approach has attracted a wider interest than some of the other teaching and learning methods. The approach shared a lot in common with total physical response methods in terms of advocating the need for "silent" phase waiting for spoken production to emerge of its own accord and emphasizing the need to make learners as relaxed as possible during the learning process. The Natural Approach focusing on a wide range of activities including games, role play, dialogs, group work and discussion. Krashen and Terrell (1983).

This study focuses on computer games, as we all know children like play. By using games as a mean of spontaneous learning the students can be more interested to learn English. Learning by doing is a good way to make students understand English, because doing fun activities by

themselves, they will find it easy to remember and easy to learn the material which is taught by the teacher.

1.1 Background of the Study:

There are two kinds of linguistics environments: artificial of formal environments, found for the most part in the classroom, and the natural of informal environment. Krashen (1981) suggests that "*adults cannot only increase their second language proficiency in informal environments but may do as well or better than learners who have spent a comparable amount of time in formal situations*" (p.40).

This study aims to adopt informal environment that involves the learner directly in order to be effective because the child relies primarily on acquisition. Thus "intake"informal environments are sufficient.

The Natural Approach will be examined in detail with respect to the interrelationships between approach design and procedure. The examination is based on Terrel and Krashen's book, "The Natural Approach – Language Acquisition in the Classroom. The nature of language. Language is made up of structures and forms that need to be internalized. Competence is based on assumption that language is a system of structural components put together to convey meaning.

The aim of Terrell's method is the development of communicative competence in learners. His theory, following Krashen, rests on five hypotheses which make up his theoretical model of language learning. These are:

    a. The acquisition- Learning hypothesis

    b. The natural order hypothesis

    c. The monitor hypothesis

    d. The input hypothesis

    e. The effective filter hypothesis

Krashen (1982:10) explains two ways of developing language skills: learning and acquisition. "*Learning is characterized by conscious explicit knowledge of the rules and grammar of the target language. Acquisition, on the other hand, is similar to first language learning*", therefore formal teaching or undue attention to forms and grammar merely frustrates and hinders this acquisition process.

The natural order hypothesis states that the structures of a language can be arranged on a hierarchy of difficulty. That is certain structures tend to be acquired early and others later.

The monitor hypothesis means that when acquired language is produced, it is monitored or edited by ones learned knowledge. This explicit knowledge of the rules of a language does not promote communicative competence but serves only as a monitor and makes repairs.

The input hypothesis acquisition takes place only when comprehensible input is provided. By hearing everything in a clear context, the student is able to follow the communication without necessarily understanding all of the language.

 The effective filter hypothesis acquisition means learners should not only be receptive to input but be in a position to use it to interact confidently with speakers. Terrell hypothesizes that unless measures are taken to reduce the learners' feeling of anxiety, threat, frustration etc… the acquisition process is hindered. When these feeling (effective factors) are reduced, students are more open to input, thus facilitating the acquisition process.

These five hypotheses form the theoretical frame work which is the basis of the NA. So this study focus primarily on these factors as a framework in using games as a part of "CALL" techniques in the classroom. By this

type of theory as a basis of learning English vocabulary the result is predictable. The students learn in unfrustrating environment and using games as learning method that is less defensive, are likely to enhance vocabulary learning as well as contextual meaning. The design and procedure of NA will come in the methodology chapter.

1.2 Statement of the Problem :

Learning Vocabulary in Sudan Basic Schools still depend on the traditional teaching aids, such as flash cards and spelling followed by a corporal punishment. So this situation drives the students to anxiety and unmotivated attitudes towards English and results in frustrating vocabulary learning. To solve this problem, this study sets the NA theoretical framework mentioned above as a healthy informal learning environment of vocabulary in order to enhance the students' retrieval, memorizing and contextual use of English words.

So the problems that students usually face are the difficulties in memorizing new words and using these words in correct context. Computer assisted language learning (CALL) games apply an appropriate enjoyable teaching technique to solve those problems. By doing fun activities the students will be more interested, motivated and easy to understand about the material because interest is the best teacher. The use of games doesn't mean pleasant ways of passing the class time. The entertainment of students is not a teacher's responsibility.

This study examined teacher's attitude towards using these vocabulary CALL games in their vocabulary instruction. Lam (2000) points to "*the lack of research investigating language teachers' points of view regarding the use of technology in language instruction*"(p.65). The focus of the most research studies has largely been on students, on how technology affects them, and on the advantages, uses, and effects of

incorporating computer technology resources into learning environments. Lam investigated the reasons behind L2 teachers' decisions to use technology for teaching, their choice of using or not using computers in teaching, and the factors influencing these decisions. The results of Lam's study suggest that teachers' attitudes toward using computer technology resources influence their acceptance and use of these resources.

The study also investigated whether and to what extent training influences teachers' attitudes towards use of CALL games in their instruction.

1.3 Objectives of the Study :

Based on the background above, the objectives of this study are as follows:

1) To investigate the impact of the proposed learning and teaching program to grade six students in Sudan.

2) To investigate English teachers' attitudes towards the natural approach.

3) To investigate English teachers' attitudes towards CALL games in vocabulary acquisition.

4) To present to what extent do training courses contributes to English teachers' positive attitudes towards use of the proposed teaching and learning program.

1.4 Significance of the Study:

The existing learning possibilities opened up by the computer assisted language learning (CALL) are considered to enhance vocabulary learning. Thus an informal natural learning setting is supposed to be incorporated with vocabulary games to maximize the learning process in the classroom. So in order to collect data in an empirical way, there are a group of

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students (grade six) Basic school they will under vocabulary programme for a period of time (two months, 40 hours of vocabulary learning) they will take a pre-test to specify their level and after the study session they sit for a post test to examine the results of using games in an informal natural classroom.

The results of this study may be useful in identifying English teachers' attitudes towards the natural approach, CALL games and informal environment and the reasons behind these attitudes. The study and its results might also suggest better ways of learning and equipping instructors with strategies, techniques, and approaches. Such learning might be achieved through the implementation of an effective teaching program on how to better exploit vocabulary games in an informal environment, as well as CALL resources. Finally, since many schools in Sudan are not yet aware of this technology and its applicability to language teaching, the study might provide some forms of guidance to language programs throughout the country that want to pursue a similar path in the future.

1.5 Questions of the Study :

The questions of the study are:

1/ What are the effects of the proposed teaching and learning program on developing the participants' vocabulary acquisition?

2/ Is there a difference in the participants' performance before and after the use of the natural approach in an informal environment via CALL games?

 The study necessarily addressed a more fundamental question:

3/ What is teacher's attitude towards the natural approach in vocabulary acquisition?

4/ What is teacher's attitude towards CALL games in vocabulary acquisition?

5/ What is teacher's attitude towards informal environment in vocabulary acquisition?

Lastly, and most importantly for this study,

6/ How training courses contributes to teachers' positive attitudes towards use of the proposed teaching and learning program?

1.6 Hypotheses of the Study:

1)Grade six at the basic schools in Sudan face many difficulties in vocabulary acquisition.

2) It is hypothesized that the main reasons behind (Control group) students' low achievement in vocabulary is the traditional teaching and learning methods.

3)It is expected that the (treatment) will enhance vocabulary acquisition, where the learners (Experimental group) will be in an enjoyable and less defensive learning situation.

4)It is expected that English teachers will develop a positive attitudes towards the proposed program after the training session.

1.7 Limits of the Study:

a.The first limitation is that this study is not generalizable. The study was conducted with teachers at University of Sinnar. Faculty of Education.Singa. Grade six is from Sinnar Sugar Co Basic schools. It would not be appropriate to generalize this situation to all English teachers and grade six in Sudan who may face very different conditions.

b. We have to be cautious in discussing the findings of this piece of research because replication of this study in other parts of Sudan is highly recommended.

c. The use of CALL games in the basic schools with experienced teachers need to be investigated in other parts of the country.

CHAPTER TWO
THEORETICAL FRAMEWORK AND
LITERATURE REVIEW

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2.0 Introduction

In order to establish the effectiveness of any specific tool for teaching, an understanding of how young learners acquire vocabulary must be first achieved. The importance of the learning objective, in this case, vocabulary acquisition via CALL games in an informal environment, must be clarified. A review of current tools being used to address vocabulary acquisition will be reviewed. Specific areas of interest include: the natural approach, informal environment, vocabulary games and retrieving words.

2.1 The Natural Approach

2.1.1 Background

The method can be described by the following principles:

a. Class time is devoted primarily to providing input for acquisition.

b. The teacher speaks only the target language in the classroom. Students may use either the first or second language. If they choose to respond in the second language, their errors are not corrected unless communication is seriously impaired.

c. Homework may include formal grammar work. Error correction is employed in correcting homework.

d. The goals of the course are "semantics" activities may involve the use of a certain structure, but the goals are to enable students to talk about ideas, perform tasks, and solve problems. Krashen and Terrel (1983:9).

2.1.2 Approach

2.1.2.1 Theory of Second Language Acquisition

Second language acquisition theory can be viewed as a part of "theoretical linguistics" i.e. it can be studied and developed without regard to the practical application. There are five important hypotheses: The acquisition learning hypothesis, the natural order hypothesis, the monitor hypothesis, the input hypothesis and the effective filter.

a. The acquisition learning distinction:

The acquisition learning distinction states that adults have two distinct and independent ways of developing competence in second language. The first way is language acquisition a process similar to the way children develop competence in their first language. Acquisition is a subconscious process; language acquirers are not aware of the fact that they are acquiring language, but only aware of the fact that they are using language for communication. Language acquirers are generally not consciously aware of the rules of the languages we have acquired. Instead, they have a "feel" for correctness. Krashen (1982:10) states that *"Grammatical sentence "sound" right, or "feel" right, and errors feel wrong, even if we do not know what the rule was violated"*.

The second way to develop competence in a second language is by language learning. Learning means the conscious knowledge of a second language, knowing the rules, being aware of them, and being able to talk about them. Knowing about a language as grammar or rules.

Some second language theorists have stated that children acquire, while adults can only learn. Krashen (1982:11) emphasizes the idea that "*adults also acquire, that the ability to acquire languages does not disappear at a certain age*".

b. The Natural Order Hypothesis:

Acquisition of grammatical structures proceeds in a predictable order. Acquirers of a given language tend to acquire certain grammatical structures early and other later. Brown (1973:54) reported that "*children acquiring English as a first language tended to acquire certain grammatical morphemes, or functions words, earlier than others*". For example, the progressive marker/s/ ("three cats") were among the first morphemes acquired, while the third person singular /s/ as in ("He works in Khartoum") and the possessive /s/ ("Ali's hat") were typically acquired much later.

The goal of the natural order hypothesis as Krashen (1982:14) states "*the implication of the natural order hypothesis is not that our syllabi should be based on the order found in the study…but our goal is language acquisition*".

c. The Monitor Hypothesis:

The Monitor Hypothesis states that acquisition and learning are used in very specific ways. Acquisition initiates our utterances in a second language and is responsible for our fluency. Learning comes into play only to make changes in the form of our utterance, after it has been produced by the acquired system. This can happen before we speak or write, or after self-correction.

Performers can use conscious rules only when three conditions are met: time, focus on form and know the rule. Second language performers need time to use conscious rules effectively. To use the Monitor effectively, time is not enough. The performer must also be focused on form, or thinking about correctness. Monitor does a better job with simple rules syntactically and semantically.

Some of the individual variation we see in adults' second language acquisition and performance can be accounted in terms of differential

use of the conscious monitor. There are three types of users: the over user, the under user and the optimal user.

The over user refers to his/her conscious grammar all the time when using his second language. This may be due to an over concern with correctness. Krashen (1981:16) *"over users also typically have a hesitant, over careful style of speaking, thanks to their over concern with correctness and constant rule-searching"*.

The under user who do not seem to use a monitor to any extant, even when conditions encourage it. Such performers appear to be uninfluenced by most error correction and do not usually utilize conscious linguistics knowledge in second language performance. The monitor under user uses his/her subconsciously acquired grammar.

The pedagogical goal of the Natural Approach is to produce optimal users, performers who use the monitor when it is appropriate and when it does not interfere with communication. Many optimal users will not use grammar in ordinary conversation where it might interfere. "*In writing, and in planned speech, however, when there is time, optimal users will make whatever correction they can to raise the accuracy of their output*" (Krashen and Pon, 1975:78).

d. The Input Hypothesis:

The important question is: How do we acquire language?. How do we move from one stage to another? If an acquirer is at "stage 2" how can he/she progress to "stage 3"? More generally, how do we move from stage i , where i represents current competence to i+1, the next level? The input hypothesis makes the following claim: condition to move from stage i+1 is that the acquirer understand input that contains i+1, where "understand" means that the acquirer is focused on the meaning and not on the form of the message.

We acquire, in other words, only when we understand language that contains structure that is "a little beyond" where we are now. But how can we understand language that contains structures that we have not yet acquired? Krashen (1982:21) answers to this apparent paradox is that "*we use more than our linguistics competence to help us to understand, we also use context, our knowledge of the world, our extra-linguistic information to help us to understand language directed to us*".

Thus, the input hypothesis relates to acquisition, not learning and we acquire by understanding language that contains structure a little beyond our current level of competence (i+1).This done with the help of context or extra-linguistic information. When communication is successful, when the input is understood and there is enough of it, i+1 will be provided automatically.

The input hypothesis states that speaking fluency cannot be taught directly. Rather, it emerges over time, on its own.

The evidence supports this hypothesis, first language acquisition in children. The input hypothesis is very consistent with what is known about "caretaker speech" the modifications that the parents and others make when talking to young children. The most important characteristics of caretaker speech for us is that it is not a deliberate attempt to teach language. Rather, as Clark and Clark (1977:44) point out that "*caretaker's speech is modified in order to aid comprehension*".

A second characteristic of interest to us here is that caretaker speech, while it is syntactically simpler is roughly tuned to the child's current level of linguistic competence. Caretaker speech is not precisely adjusted to the level of each child but tends to get more complex as the child progresses.

A third characteristic of caretaker speech is known as the "here and now" principle. It is well established that caretakers talk mostly about what the child can perceive, what is in the immediate environment.

The input hypothesis predicts that caretaker speech will be very useful for the child. First, it is comprehensible and the "here and now" feature provides extra-linguistic support (context) that helps the child understand the utterances containing i+1.

Evidence from the second language acquisition (simple codes) , states that the second language acquirer, child or adult, is also an "acquirer", just like the child acquiring first language.

The modified input is of three sorts as he states it. "*Foreigner-talk results from the modifications native speakers make with less than competent speakers of their language, Teacher-talk is a foreigner-talk in the classroom and simple code is interlanguage talk, the speech of other second language acquirer*" (Krashen, 1982:25).

Foreigner-talk and the teacher-talk may not always be in the "here and now", but helpful native speakers and teachers find other ways to make the input comprehensible. Teachers, in addition, use pedagogical aids, such as computer-assisted language learning games which is intended to be used in this research.

Evidence from second language acquisition (the silent period and first language influence), noted that children acquiring a second language in a natural, informal linguistic environment may say very little for several months following their first exposure to the second language. Krashen 1982 states that:

> *the explanation of the silent period in terms of the input hypothesis is straight-forward-the child is building up the competence in the second language via listening, by understanding the language around him. In accordance*

with the input hypothesis, speaking ability emerges on its own after enough competence has been developed by listening and understanding. (p.27).

Adults and children in formal language environment are usually not allowed a silent period. They are often asked to produce very early in a second language, before they acquired enough syntactic competence to express their ideas. So this study assumes the fact that informal environment for vocabulary acquisition is suitable to the learners and this point will be described later in details.

The input hypothesis is also consistent with the results of what can be called "method comparison" experiments. Several scholars and groups of scholars have attempted to determine directly which teaching methods are best by simple comparison.

According to Krashen (1982:129) "*deductive methods (rule first, then practice, e.g. grammar-translation and cognitive-code) are more efficient than audio lingual teaching for adults*". Students clearly make some progress using any of these approaches. For adolescents, there is no measurable difference.

Krashen (1982) interprets the failure that none of the methods compared here provides much in the way of comprehensible input! The input hypothesis predicts, moreover, that an approach that provides quantities of comprehensible input will do much better than any of the older approaches.

e. The Affective Filter Hypothesis

The concept of the Affective Filter was proposed by Dualy and Burt (1977), and is consistent with the theoretical work done in the area of Affective variables and second language acquisition.

Krashen (1982:31) "*most of the Affective variables can be placed into one of these three categories: motivation, self-confidence and anxiety*".

Performers with high motivation generally do better in second language acquisition. Performers with self-confidence and a good self-image tend to do better in second language acquisition.

Stevick (1976:87) stated that "*acquirers vary with the respect to the strength or level of their Affective Filters*". Those whose attitudes are not optimal for second language will not only tend to seek less in input, but they will have a high and strong Affective Filter even if they understand the message. The input will not reach the part of the brain responsible for language acquisition.

2.2 Computer Assisted Language Learning (CALL):

"*Computer assisted language learning refers to any use of a computer to present instructional material, provide for active participation of the student, and the respond or feedback to student action*" (Criswell, 1989:86). Teaching consists of the teacher (human or computer) performing activities that enable a student to learn. These activities include presenting new instructional challenges, providing enough practice, reviewing when necessary, informing the student about the correctness of his/her responses, allowing the student to discover for himself or herself when learning a certain skill and keeping track of the student's progress. The understanding that learning progresses as a function of teaching activities is fundamental to designing CALL.

CALL is an emerging force in language education. Despite its weak beginning and the on-going resistance of many in the language teaching community, it is maturing and showing that it can be powerful tool in the hands of experienced teachers. In its early days, CALL was driven by technology and technologists. Proponents of CALL tended to focus on the "computer assisted" portion of the acronym rather than the "language learning" portion. As for teachers, they were seldom consulted or provided with training, partly because there were few in academia with

relevant experience and partly because teachers, with justification, regarded CALL with skepticism and fear. There was an implicit belief that teachers and CALL were competing for the same role…CALL versus classroom only…rather than in partnership where each approach "assisted" the other.

What was missed by many was the recognition that the most effective use of technology is not just to do old things in new ways. Rather, the real opportunity was to examine how the new tools of technology had broken through the page and text barrier allowing the development of a new range of listening-based interactions. This created theoretical opportunities of fundamental changes in language learning, including a rethinking of the relationship between the four skills and the learning synergies between them.

The relationship between computers and education is very strong and long one. Many education professionals think that with this device lies the solution to the vocabulary problems. Computers can be used for teaching and analyzing data and to create and facilitate an interactive and informal learning environment in which both the teacher and the student have a more positive role. Computers also enable teachers and students to work with and manipulate different forms of data and information including text, voice, graphics, and/or a mixture of all these.

For the teaching and learning processes to be effective, CALL system must include a computer (hardware), programs to make the computer operate (software) and a program designed especially to administer the instruction (courseware).

CALL can be used effectively in the following cases:

a. When the subject matter does not change significantly over time, because changes in the topic require reprogramming.

b. When repeated presentations of the same course are needed, because computers are excellent at repeating courses over and over again without a decrease in proficiency due to fatigue.

c. When the actual practice of the skill being learned is important, because students using CALL can practice skills that otherwise not be possible.

Human teachers spared some teaching time can productively engage in other important instructional activities. CALL does not replace teachers, but it permits teachers to perform other activities.

2.2.1 The History of Computers in Education

"*The story of educational tools has a long history, it includes fingers, toes, stones, sticks, slates, lead pencils, quill pens and the printing press*" (Merrill,et al., 1986:123). All these are passive learning tools, providing no opportunity for the learner to interact with the device. Efforts to provide students with a more active role in learning have produced innovations such as programmed instruction and the teaching machine.

Since the early 1960s, mainframe computers have been used in education. Large computer education applications were written, but they were limited to universities and large educational foundations because of their high cost and intensive labour used in their preparations. As microcomputers appeared and spread at the end of the 1970s and early 1980s, their use increased in schools at the same time as the number of general users grows. AL-Mghuira.1990 finds that:

> *At the same time, educational software companies were established; they specialized in designing, developing and distributing computer-based educational applications. The same period also witnessed an increase in research studies, conferences and journals publications regarding the use of computers in the education and the learning processes.*
> *(p.123)*

For example, in the USA, based on the concepts of the instructional form of learning, "*Harvard University developed the programmed instructional form of learning or what came to be known later as computer assisted language learning (CALL)*" (AL-Mughira, 1990:125)

The first CALL application was developed by IBM who also developed "coursewriter", a special programming language used in writing educational applications. Future attempts at studying the potential of using computers in teaching different subjects followed this work.

Then, in 1971 a five year plan by the National Science Foundation in the USA was set up to develop two CALL projects. The first was known as "Time Shared Interactive Computer Controlled Information Television" (TICCIT) which was developed through the joint efforts of engineers from MITRE Corporation in Virginia and educators at the University of Texas. The second project "Programmed Logic for Automatic Teaching Operation (PLATO) was developed at the University of Illinois (Criswell, 1989; Merrill,et al.,1986).

TICCIT was set up to demonstrate that CALL had the potential of providing better instruction at lower cost than traditional methods. PLATO was designed to investigate the possibility of a computer based education network that was economically manageable, and had the potential of serving various institutions at various levels, in order to increase their efficiency and dependability.

TICCIT and PLATO had two different sets of objectives and designs. TICCIT designers used a simple minicomputer based system and mass produced computers, whereas PLATO designers depended on a mainframe computer and large network of terminals with the latest in technological development.

The aim of these two CALL projects was to show that CALL applications could provide a better instruction at lower cost than

traditional instruction; TICCIT applications were produced by teams of instructional psychologists, subject matter specialists, instructional design technicians, evaluation technicians, and packaging specialists. It was found TICCIT and PLATO had a positive influence on students performance and output. For example, in the case of TICCIT both Math and English; also, it was found that using TICCIT outperformed other learning/teaching methods such as lectures and discussion groups. However, TICCIT was not as good in the completion rates, where using TICCIT in Math resulted in 16% completion while in non-TICCIT cases the completion rate was 50%.

The PLATO project was not as easy to evaluate as TICCIT due to the fact that anyone could create their own material. In addition, PLATO was not as popular with students as TICCIT material; 83% of students did not want course totally on PLATO.

2.2.2 Retrieving Vocabulary and CALL

Education researchers emphasize the importance of computers in the learning process; they point out that the characteristics and the potential of computers can have a positive role in enhancing the learning process. These researchers list some of the views they hold of the positive roles of computers in the learning process. These researchers (Dewhurst, Meehan, Williams and Woods, 1989. Baha, 1998) list some of the views they hold of the positive roles of computers in the learning process:

● Computers can be programmed to response to individual's needs and interests; this is particularly advantageous in mixed ability classes.

● Computers have a very large memory and flexible logic.

● The quality of interactivity in computers makes them superior to the traditional means of instruction.

● The handing, processing, storing, and retrieving of data is a quality that makes computers unmatched by other forms of instruction.

● Computers can approximate to a full simulation of the tutorial process.

● Computers can advise, suggest, change and won users.

● Computers will be very much more affordable in the future and thus, becoming economically cheaper than other forms of handling data.

● Computers enable education and IT professionals to develop programs that simulate reading, writing, tutorials and drill and practice learning sessions. "*Computers also allow teachers to be more creative and be able to practically assess the performance of their students*" (Dewhurst, et al, 1989:143). In addition, computers allow students to be more often and more effectively involved in the learning process.

Recent research in the neural sciences has provided many insights into how learning takes place and how language learning may be optimized. In particular, it supports the view that multimedia exercises can be designed to take advantages of how neural processes work together in the learning process.

Figure (2.1) Brain Processors

Long term memory

Working memory

Visual processors   Auditory processors   Conceptual processors
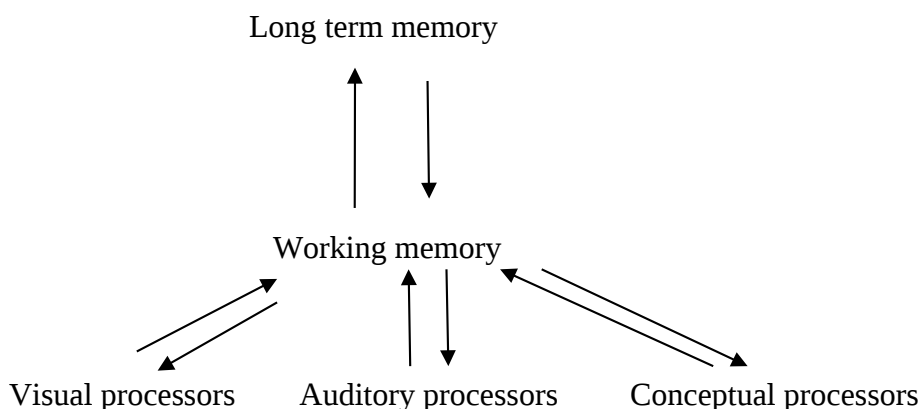
Hebb (1949:63)

Oversimplified diagram that shows how various processors in the brain communicate with the working memory, which is instrumental in the learning process. The key point is that multiple processors, such as the

visual, auditory, conceptual, phonological, and orthographic and many others are involved and can be activated in well-designed activities.

Neuropsychologists Hebb (1949:65) was one of the first to hypothesize that "*learning involves the alteration of neural connections*". His ideas are often summarized by the phrase "neurons that fire together wire together", and this is just what CALL allows and promotes.

For language learning, a key element is the synchronized activation of the auditory, phonological, and visual systems in the brain, especially important for listening and reading development. Knowles (2004) finds that:

> *Research shows that long term learning generally requires frequent repetition over an extended period of time. Long term learning doesn't happen overnight when one crams to pass a vocabulary quiz or consciously memorize a dialog for the next day. Short, frequent practice sessions repeated over a longer period of time appears to be the most efficient way to increase language proficiency. (p.60)*

Of course, language learning also depends on the quality and comprehensibility of the language input being practiced. Vocabulary models need to be at a suitable level of comprehensibility. If students are not working with language in an optimum range of comprehensibility, their practice is inefficient and in some cases counterproductive.

Once students are placed, a well-designed multimedia lesson can deliver optimum language through a combination of visual, auditory and contextual inputs. Students can be guided to where they recognized, comprehend and can respond appropriately to the vocabulary words without the need for immediate text or translation support.

2.2.3. The Computer as a Tutor:

When the computer is used as a tutor, students' behavior is essentially controlled by the computer; that is, the material is presented by the computer and the student's responses are evaluated leading either to further presentations or return to the previous item. For example, a tutorial program would come under this mode.

Tutor Application: in tutor application, the computer acts as a tutor by performing a teaching role. Tutor applications can be further classified into five categories:

   a.   Tutorial Application.

   b.   Drill-and –practice Applications.

   c.   Intelligent computer assisted learning.

   d.   Simulations.

   e.   Problem Solving Application.

   f.   Game Applications.

a. Tutorial Application

The primary purpose of tutorial applications is to teach new information. It is similar to a programmed textbook. A relatively small piece of information is presented, the student is then asked to respond to a question about the information, and the computer provides feedback concerning the accuracy of the student's response. The cycle is repeated: more information, question, and feedback. The ideal tutorial programs are those which are able to tailor the material to the needs of individual students. "*If a particular student is having difficulty, the computer would present remedial material while those who dong well may skip to new material*" (Merrill, et al., 1986, p.89).

b. Drill-and –practice Applications

In drill-and –practice applications, the computer is used to help the students memorize the appropriate response to some stimulant. The most common applications include practice on Maths facts, spelling words, shapes and colors. The computer evaluates the response and gives the student appropriate feedback. If the student response is incorrect, the computer displays the correct answer on the screen and then presents the next problem. In a sense, the computer serves as a sophisticated flashcard presenter. However, by keeping track of how each student responds to each item, the computer can tailor the drill and practice sessions to the needs of each individual student.

-Using Drill and Practice Programs in the Classroom: If computer based drill and practice programs are to be effective in the classroom, they must be consistent with and carefully integrated into the regular classroom curriculum. This seems to be an obvious statement, but this is disregarded repeatedly. It makes absolutely no sense to have students use a computer that drills them on spelling words that are different from those used in the rest of the curriculum. This obvious way to overcome this problem is by selecting software that allows the teacher to specify the type of problems to be incorporated into a given drill session.

Drill and practices is not a very interesting learning activity for students, even under the best of circumstances. However, many computer based drill and practice programs include gaming elements that make them somewhat more interesting. Education expert's advice that the amount of time students spending on the computer doing drill and practice should not exceed their attention span and tolerance for such activities. Several short, spaced drill sessions are better than a few long sessions. "*Research has shown even 15 minutes a day of computer based drill can significantly improve a student's performance*" (Merrill, et al, 1986:110).

c. **Intelligent CALL**

Intelligent CALL is a recent advance in the field of CALL. Criswell (1989:44) defines ICAL simply: "*it involves the use of artificial intelligence programming for the purpose of making the CALL more responsive than traditional CALL*". The notion is that for many subjects, a student will learn better with a personalized tutor that understands how the student is progressing and why the student is making errors. Artificial intelligent programs are written with words, whereas conventional programs are written in lower level symbols (e.g, variables). Thus artificial intelligent programming allows one to program the computer more readily to act like a human tutor. In particular, three dimensions of CALL are important in determining intelligence in a CALL system.

-Intelligent diagnosis of error patterns.

-Intelligent feedback.

-Intelligent dialogue between computer and student.

d. Simulations

Simulations are representations or models of real or imaginary systems or phenomena. Simulations enable students to study the same event as many times as necessary with no risk and less cost. Every simulation has the following four main components: The presentation system, the student (subject), the system controls and the system manager. Simulations may be classified as either static or interactive. A static simulation is usually linear in nature. Students simply watch and/or listen as the pheromone is demonstrated; they have no impact on the demonstration. Motion pictures, TV programs and radio dramatization are typical examples of static simulations of reality. Interactive simulations allow students to manipulate various factors in the simulation. With interactive simulations students have the opportunity to form hypotheses, perform experiments, and verify or refute their

assumptions. Such simulations allow students to gain valuable experience in solving problems.

The simulation has six level of complexity. At the first level, students have to move a coloured rectangle through some rooms. Students practice using the appropriate keys on the computer keyboard to move the rectangle up, down, right, or left, and pick up or place down objects. These manipulatory skills are then used in the next level to control the flow of electricity through circuits. In other levels, students build simple to complex electronic machines and see the effect of various types of logic gates on the operation of the machines (Merrill, et al, 1986:112).

e. Problem Solving Applications

Merrill, et al, (1986:113) defined problem solving as "*those skills in critical thinking and/or logic that allow one to arrive at a previously unattained personal solution*". Computers are used in problem solving for at least six major reasons:

● Using computers in problem solving increase the user's self confidence in understanding that other similar problems can be solved.

● Using computers in problem solving create a sense of being self-directed.

● Using computers in problem solving increase the user's knowledge and experience base.

● Using computers add to the user's repertoire of possible solutions or actions.

● Using computers seem to increase a user's ability to deal with change.

f. Game Applications.

Game applications are types of simulations. Like simulations, they require the student to act in a problem situation. Games, however, usually involve imaginary situations, whereas, many training simulations involve real life events. The beauty of most games is that the learning

takes place without the pupil being aware of it. Games develop a number of relevant educational values: enthusiasm, team interaction, problem-solving skills, logical thought processes and attention span.

The excitement and interest that video arcade computer games generate can teach CALL designers about maintaining student motivation using computer-based instructional games. An interesting game presents a challenge to the player, and the student tries to make progress toward s goal by amassing points or beating previous scores. Computer colored graphics also foster interest.

Games allow for discovery learning: the actual results of a player's own actions teach and strengthen performance. Such enormously popular techniques have not been part of school curricula.

2.2.4 Rationale for Using CALL

The last twenty years has been seen extensive research and development work in CALL. During the mid-seventies large evaluation studies were conducted both in the United States and in the United Kingdom. These studies focused on the use of mainframe computers delivering CALL materials via interactive terminals to university students. They demonstrate that CALL can be used effectively to supplement existing educational provision but in each case the CALL was an add-on cost. Of course much of the CALL that has been created has not been educationally effective at and has been discarded.

In the last few years the cost of personal computers has dropped considerably. Currently the educational software available for these machines is of much lower reliability and educational quality then found on large mainframe computers. In fact, the main cost of CALL is associated with the development of sound educational software and not with the provision of hardware to deliver the materials. In the long term,

CALL has great educational potential. Our reasons for believing this are based on the following properties of computers:

The ability to interact adaptively with individual students, the patience, instant feedback and (if programmed correctly) tolerance of error, the simulation capability, so that students can watch, for example computer animations, the communication and the database capability enabling students to quickly access information, the storage capability which makes it possible to monitor and pace individual students, the portability which makes it now possible for disabled students with only residual movement to control computers and for blind students to hear spoken computer output,

The reprogram ability which makes it possible to steadily and systematically improve existing CALL material.

It should be emphasized here that this optimism is not based on the "average quality" of existing CALL software but on a small number of demonstration CALL programs which attracted massive recourses as computer science and artificial intelligence research enterprises.

2.2.5 Advantages of a Good CALL Lesson

It has been suggested that, as a means of teaching, CALL has the potential of being more successful than text books if it is more visual, stimulating and motivating to students. This is because CALL can according to Marshall (1988:150):

a. Actively involve the student in learning and interaction throughout the lesson.

b. Serve to test the understanding of the students.

c. Provide interaction between the CALL system and the students which allows them to give answers and receive feedback, detects errors and gives the students the options of correcting them.

d. Direct the students to a predetermined path that incorporates the needs of the student.

e. Display graphics about the related materials to illustrate ideas presented in the lesson.

f. Motivate students to work at their own space.

Additionally, research indicates that ideal CALL lessons should last in the range of 20 to 30 minutes so as to allow students to work at full concentration. If there is an excess of information presented in one session ideas become obstructed in the mind of the students, which can leads to confusion and lack of concentration. The way forward is to present less material and make the lessons more exciting to the students.

2.2.6 Functions of CALL

CALL applications play different functions in the learning process; Rowntree (1982: 55) listed the functions of CALL as:

a. Individual tuition.

b. Progression at a self-determined pace.

c. Engaging student motivation and interaction.

d. Recalling earlier learning.

e. Providing new learning material.

f. Giving speedy accurate feedback.

g. Eliminating errors and misconceptions before the progress of the topic is investigated.

2.2.7 The Effects of CALL:

Numerous research studies have been conducted to determine the effects of CALL on student's performance, learning, attitudes and instructional time. They have been conducted across all levels of education: elementary, secondary, post-secondary, and adult. Several reviews of these studies have been published in recent years. Most of the reviews

used a sophisticated analysis technique referred to as meta-analysis, which allowed them to equate the results from many different studies and determine an average effect size across all the reviewed studies.

Kulik and Kulik (1991:87) combine data from "*an analysis of 199 comparative studies: 32 of these studies were conducted in elementary school, 42 in high school. 101 studies in institutions of higher education and 42 in adult education settings*". The results of their meta-analyses showed that CALL when compared to conventional instruction, raised examination scores by 0.31 standard deviations, or from the 50th to 61th percentile. Also, these two authors found that 28 of the studies reported that CALL reduced instructional time by an average of 32 percent, and 17 studies indicated that students' attitudes toward instruction were raised 0.28 standard deviations (Merrill et al. 1996:133). These results indicate that CALL can have positive effects but is not necessarily a complete cure for all the education problems.

The other reviews came to very similar conclusions: The use of CALL, when compared to conventional instruction, has a moderate positive effect on student achievement and attitudes toward computers and instruction and it substantially reduces instructional time. These results indicate that CALL can have positive benefits, although certainly it is not a panacea. Therefore caution in the interpretation and application of such research results must be observed.

Considerable care and other resources go into the development of conventional instruction. If the same resources were put into the development of CALL, similar positive benefits might be obtained. These results are based on an average across numerous studies. Just as some books and films are very good and others are very poor, there is a wide variance in the quality of CALL software. There are also differences in the quality of conventional instruction. An advantage of

CALL is that it is visible, replicable, and transportable. It can be examined, tested, revised and improved.

2.2.8 Effects of Computer on Students' Thinking:

Educational researchers also state that computers can influence the learning process through their influence on the students' thinking and their learning style.

Little is to known about how students' mind may be influenced by the experience of growing up in a computer-based society. Young students today live in an environment where computers are pervasive, and are part and parcel of television cartoon characters. It would be valuable to know what effects this "sub cultural" exposure is having. There are no baselines against which developments in this respect may be interpreted, and the opportunity of studying a comparatively "computer-naïve" generation will soon be lost.

There is also ignorance of the effects and influences of the deliberate (as opposed to accidental) exposure of young students to IT devices. Previous research in this context has been trivial and badly designed, and yet, as Papert (1980:65) has suggested "*the educational significance of this matter could be very great indeed*". We need to know, for example, about the effects on students' thinking of the linguistic and procedural structures embedded in computing environment and of which teachers may not even be aware.

According to Smith (1985:25) "*the linear algorithmic style which was the characteristic of so much current educational software may have been useful in providing some students with a procedural framework for problem decomposition and solution*" But then again may cause problems for other students whose thinking styles are incompatible with it. However, the use of hypertext has meant that a more flexible and student controlled approach is available.

2.2.9 Advantages and Disadvantages of Using CALL

A list of these advantages and disadvantages are found in (Marshall, 1988, p.146-147)

● **Advantages:**

a. Controlled experiments have demonstrated that a good CALL program can achieve the same results as a good teacher, often in less time.

b. Training can be at any time the hardware is available, and at any place where the software can be accessed.

c. All the students get the same basic instruction, and there can be no doubt about what is being taught.

d. It enhances the role of the teacher or tutor, freeing them from the chore of routine instruction, exercise setting and marking, and providing them with the opportunity to give more individual guidance and special help.

e. It can relieve the teacher and the student from the boredom of 'unauthentic labour'.

f. Small group teaching may be uneconomic but is better academically.

● **Disadvantages:**

a. There are real costs associated with the development of CALL system.

b. Most schools and many colleges already operate a high class contact timetable with little time allocated to the use of library or computer facilities.

c. There are also administrative problems associated with computer instructions.

 d. CALL is perceived as a threat to jobs.

e. There may be health problems associated with long-term exposure to computers.

f. Even when software is made available, there may only be one terminal or standalone computers for an entire class to use.

g. Various polls and questionnaires have determined that the response of students to CALL is rarely neutral.

2.3 Informal Environment:

In our society it is very difficult to separate the processes of learning from the practice of education. For all sorts of reasons we invest heavily in schools, colleges and universities. This has led to a reconsideration of whether the formal education in schools is good or even practical to organize children's learning at all.

Krashen (1981:47) stated that "*there are two sorts of linguistic environments: artificial, or formal environments, found for the most part in the class and natural, or informal environments*".

Several studies suggest that learners can only increase their second language proficiency in informal environments, but may do as well as or better than learners who have spent a comparable amount of time in formal situations.

Upshur (1968:76) compared three groups of ten adults ESL students enrolled in special summer session of law students at the University of Michigan. The first group who scored highest on the entrance test (Michigan examination in structure) attended seminars and classes during the 7-week period that were conducted in English, but had no extra ESL classes. The second group who scored lower on the entrance test, also attended law classes and had one hour daily of ESL in addition. The third group scored lowest on the pre-test and had two hours of ESL daily in addition to law classes.

At the end of the summer, an alternate form of the pre-test was given. While all the three groups showed some improvement in performance.

Upshur's (1986:82) statistical analysis revealed "no significant effects on language learning attributable to amount of language instruction".

Krashen and Seliger (1975:45) suggest, however that "*motivated language students are able to provide themselves with the essential ingredients of formal instruction without going to class*". Rule isolation can be done by recourse to a text or by asking informants about grammar, while feedback is available when helpful friends correct the learner.

What, then, might we mean by informal learning environment? Does this 'informality' refer to how we learn, where we learn, what we learn, or the relationship between the activity and what is valued as knowledge today? Does informal learning simply mean learning that happens in a different way from schools, in a different place, about different things, or does it refer to anything that is learnt, that isn't currently valued by our education system?

Today the term 'informal learning environment' is used quite loosely to describe all or any of these. Some people use it to describe the location of learning- suggesting that all learning outside the school is informal. Others describe the purposes of learning-suggesting that all learning that is part of leisure activity, rather than for examination purposes, is informal. One thing is clear, however; the terms 'informal' or 'formal' are not intended to imply that informal approaches to learning are all fun and games, while formal approaches are all seriousness and gravity. Rather, the distinction between formal and informal learning, as we will use it in this study, can more clearly be made around the intentions and structure of the learning experience.

If this sounds rather abstract, another way of thinking about it is the use of games as a learning experience in vocabulary acquisition that are

primarily viewed by formal educational establishments as outside the realm of valued educational experience.

2.3.1 Using CALL Games in an Informal Learning Environment:

Computer games have grown in popularity, and as they have achieved an unparalleled position in terms of youth culture and economic importance so its interest has grown exponentially.

Computer games are more successful than schools in attracting interest and motivation from young people. This is a part of a wider crisis about contemporary schooling common to many societies where it appears as if commercial initiatives like the computer game industry are winning the competition for the hearts and minds of the young. This approach is to study games as an original medium for vocabulary acquisition. This is not to deny the relationships that do exist   between learning in computer games and learning in other kinds of education. But it concentrates exploring how players learn to play games in informal settings and the nature of vocabulary learning.

This is a rich and suggestive study. It's close examination of the game-texts enjoyed by young people shows how game playing might function as a site for informal learning. It doesn't knowledge that games are merely software programmes and as such the game playing is simply a complex way of interacting with fixed and variable rules, but it does show how immersion in the alternative world of games supports the idea of the learning process.

This approach focuses debate very clearly on how schools, curriculum and the software industry might appropriate and use our understanding of the learning afforded by game playing in a wider approach to reconceptualising learning. Although the rejection of the use of CALL games as an educational technology to mediate traditional 'formal'

learning may fly in the face of the kinds of the government sponsored initiatives. Oblinger (2006) finds that:

> *Students do not touch, see, or hear passively: they feel, look, and listen actively. Students cannot attend to all the environmental information bombarding them at any given time; their ability together and understand incoming information is limited…students may direct their attention to a particular targets in the learning environment that they find more interesting, important, or unfamiliar than others. (p.62).*

2.3.2 Vocabulary Acquisition in Multimedia Environment:

It gives a brief introduction of the current situation of vocabulary learning and teaching in multimedia software for vocabulary learning. For students, in learning a second language, the first headache or difficulty they meet is usually remembering words. Vocabulary is an important part of a language as well as the basis of linguistic abilities. The size of vocabulary is an important standard to evaluate a learner's English level. Without adequate vocabulary knowledge a second language learners' conversational fluency and reading comprehension will meet difficulties. Vocabulary is the foundations of a language.

In language learning and teaching vocabulary has always been a neglect and weak point. Linguistic have had remarkably little to say about the vocabulary and one can find few studies which could be of any practical interest for language teachers.

Vocabulary had received short shift from applied linguistics. The situation had not changed significantly. But unfortunately students sometimes do not use context clues properly because of their poor vocabulary knowledge and low vocabulary capacity. Moreover, a single context hardly gives enough information for a second language reader to guess the full meaning of a word. Learning, memorizing and application

of vocabulary runs through the whole process of language learning for students.

Al- Othman (2008) conducted study on students in the intensive course at Al-Imam Mohammed Ibn Saud Islamic University in the second semester of the academic year of 2007-2008. They were randomly divided to = an experimental and control groups. The experimental group underwent an independent intensive online vocabulary learning over 6 weeks. Data analysis of the tests and findings demonstrated the positive and tremendous effect of this method on the development of vocabulary knowledge.

Most Saudi students have been learning for at least 6 years from their junior high school, but they are still not able to express themselves adequately and fluently in English or understand what people say easily. The problem may lie in the traditional formal teaching method. For example, in a typical Saudi classroom, what students did first of all was to follow the teacher reading new words and expressions by repeating again and again. Then, the teacher explained the new words one by one, until students felt bored and exhausted. In order to expand their vocabulary, students spent much time repeating and reciting words without knowing clearly how to use them contextually.

Informal CALL environment which makes tremendous effect on vocabulary acquisition, this result prove that environments of learning have a good results in vocabulary acquisition. Al- Othman (2008:178).

2.4 Roles of a Teacher and a Learner

The roles of the teacher in CALL environment get better at vocabulary acquisition. Students can discover strategies on their own, read about vocabulary games in a book or from the web, or be told them by a fellow student, parent, or teacher. However, without explicit instruction, few

students will attempt to generalize such strategies for possible inclusion in their way of CALL games.

For an informal environment to be fully effective as a learning activity, it often must be augmented by tutorial guidance that recognizes and explain weakness in the student's decisions or suggests ideas when the students appear to have none. This is a significant challenge requiring many of the skills analogous to those of a coach or laboratory instructor. The tutor or coach must be perceptive enough to make relevant comments but not so intrusive as to destroy the fun inherent in the game. The teaching technique emphasized in this research is a combination of the natural approach and using CALL games in a vocabulary acquisition. Each teaching / learning situation is an opportunity for students to acquire and retrieve more vocabulary.

The role of the teacher consists of:

a. Identify a strategy of learning vocabulary through CALL games and give it a short, descriptive and easy to remember method.

b. Help students to understand the strategy of using CALL games in an informal environment they are currently engaged in.

c. Help each student to identify applications of using CALL games in vocabulary acquisition. The goal is to help each student to develop a personally relevant understanding of using contextual meaning in variety of situations.

d. By repeating steps 1-3 frequently, both CALL games and the natural approach techniques in learning give an opportunity to reinforce student's understanding and retrieving of words.

The role of the teacher is to help students learn some games and increase their understanding of historical and current roles of games playing in our society. This includes learning games as an aid to social interactions in small and large groups, learning games as an informal environment

that facilitate vocabulary acquisition, contextual meaning and retrieving words. The idea that every student plays both learning and teaching roles in life.

This type of informal learning environment is supposed to enhance and motivates the student to learn vocabulary, since playing CALL games is a kind of fun. These games are competitive, some are collaborative, and some are both (a team working together, competing with another team) and so on. Many games provide an opportunity to experience the thrill of victory and the agony of defeat and to learn how students deal with winning and losing.

Games provide an environment in which students can practice self-assessment peer assessment and giving and receiving feedback based on such assessments.

Erbent, et al, (2009:68) stated that "*in an informal environment, the role of the teacher as an instructor shifts from disseminator of knowledge to a moderator thus is increasing the student participation*".

2.5 Classroom Design:

What impact does this have on classroom design? Informal, virtual environment are actually classrooms that can begin to apply the same core and consideration to the decisions about course management systems as they do to decisions about new construction and renovation. Of utmost importance is the usability of these computer assisted language learning games. Oblinger (2006:60-61) identifies five criteria for defining a suitable system:

● Learn ability: refers to the speed and ease with which a novice user can achieve proficiency with the system.

● Efficiency: refers to the degree to which the systems support the performance of an experienced user in the shortest amount of time and with the fewest steps.

● Memo ability: refers to the degree to which the user can remember how to accomplish a task using the system and the steps of which were learned previously.

● Errors: refer to the number of mistakes and missteps made by users.

● Satisfaction: refers to the user's overall emotional experience when using the system.

Usability of CALL games in the classroom should be conducted and the problems should be addressed using similar decision making process.

Informal environments have traditionally focused on motivating learners to learn through exploration, so CALL games help them to acquire, memorize and use vocabulary contextually in a spontaneous way.

2.6 Advantages and Disadvantages of Using Games:

Games are always loved by children. Games are related to fun, movement and competition. Children can get bored easily if there is the same activity. Moreover, their concentration is shorter than adult's concentration. So the teacher must apply a good and creative method to keep the student's concentration in the learning material. The use of games in teaching English vocabulary not only gave benefits both to the teacher and the students but also gave difficulty to them.

According to Erbent, et al, (2009:102), the first advantage of applying some games in teaching process was the students could be more interested in the learning the material. When the students were interested in learning the material, they would give more attention to the lesson given. That condition gave a good chance for both the teacher and the students. On the occasion the teacher could deliver the material very well and the students could understand what they had learned on that day.

The second advantage of applying some games in teaching and learning process was the teacher didn't need to explain too many materials. The

teacher just explained the materials needed by the students because they can understand the material on that day by doing the games. The games could give the students more chance to understand the materials given because through playing they can learned something without realized that.

The first disadvantage of applying games in the teaching and learning process was by attracting student's interest to games, all of them were active and made noisy. Sometimes they too much moved and spoke. That condition made the teacher difficult to control them.

The second disadvantage of applying some games in the teaching and learning process was by doing games the teacher only had a little time to explain the material and gave some new vocabularies. So there was no longer time for the teacher to explain more and help them to memorize all the new vocabularies.

From all the explanation above, it shows that the using of games is a good method for teaching English vocabulary especially by applying the creative activity, but there are also some disadvantages in using games especially for the grade six.

2.7 A lesson Plan in Sinnar Sugar Co. Basic Schools:

Governmental basic schools in Sudan start English from grade five. Students at grade six are not likely to master English alphabets adequately. The problem may lie in the traditional method and teachers aren't available. The researcher found one teacher for four classes and it is obvious that she was overloaded. In a typical classroom, what students did first of all was to follow the teacher reading new words by repeating them again and again, until students felt bored and exhausted. In order to expand their vocabulary, students spent much time repeating and memorizing the words, for tomorrow's spelling which will be followed by a physical punishment. Teachers don't follow written lesson plans.

CHAPTER THREE

METHODOLOGY

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METHODOLOGY

3.0 Introduction:

This chapter discusses the research design utilized in examining how the Natural Approach works in an informal environment and vocabulary acquisition via CALL games. The Chapter further considers the factors appertaining to the design and describes the circumstances surrounding the fieldwork, thus familiarizing the reader with the experimental research techniques used to collect the data for the fieldwork element of the study.

The Chapter, therefore, lays the groundwork for the following Chapter, which presents the findings from a true experiment and the questionnaire generated by the fieldwork. However, the purpose of the present Chapter is to provide the readers with an insight into the research techniques adopted in the collection of the data for the fieldwork element of the study.

3.1 Theoretical Consideration in the Study Design:

This section presents a brief description of the Experimental Approach of the educational research, so that it can be seen why the researcher adopted the techniques used in the present study. Therefore, an outline of the available literature concerning research and research design, which, it was hoped would further help to justify the suitability of the methods adopted.

It would be appropriate first to clarify what is meant by the term "research". Research is an academic activity and as such the term should be used in a technical sense. Selesinger and Stephenson(1930:498) in The Encyclopedia of Social Sciences defined "*research as the manipulation of things, concepts or symbols for the purpose of*

generalizing to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art". Research is, thus, an original contribution to the existing stock of knowledge making for its advancement. It is the pursuit of the truth with the help of study, observation, comparison and experiment. In short, the search for knowledge through objective and systematic method of finding solution to a problem is research.

The two definitions presented above point to research focusing on the collection of information and expansion of knowledge, and the evaluation of the information and knowledge gathered. Some educational research is designed with a view to be able to generalize from its findings about behavior that can be used to predict events within education. According to Cohen et al (2007:78) *"research design is governed by the notion of fitness of purpose"*. The purpose of the research determines the methodology and the design of the research. Thus, these writers are of the opinion that researchers apply a high degree of organization to their work, which is based on well defined hypotheses and aims to provide answers to research questions.

The nature of the problem in this study as mentioned in chapter one is vocabulary acquisition difficulties face young learners (grade six) in a traditional classroom environment, which drove them to unmotivated attitude towards English and these results in frustrating learning. So the method proposed in this study was dictated by the prevailing circumstances.

The source of data required to address the problem were a true experiment and a questionnaire, which means it is a quantitative data. The ultimate aim of this research, too, is a factor in determining the Experimental Approach as the most suitable one for collecting the necessary information.

The Experimental Approach is the most tightly controlled method of research. One important feature, which distinguishes it from other types of research, is "control". According to Cohen et al (2007:86) *"the essential feature of experimental research is that investigators deliberately control and manipulate the conditions which determine the events, in which they are interested, introduce an intervention and measures the difference that it makes"*.

Therefore, the English teachers at College of Education , University of Sinnar , who participated in this study, introduced a change in the classroom(the experimental group) to achieve dependent variable that results from the independent variable, in comparison with (the control group) as a base line which didn't receive a treatment.

3.2 Pretest and Posttest Design:

The experiment concerned primarily with discovering the effectiveness among or between two variables at the same time. Zoltan (2007:115) states that "*the experimental study represenst quantitative research at its most scientific because it can establish unambiguous cause-effect relationships*".

The study was aimed to revealing and describing the effectiveness of using the Natural Approach in vocabulary acquisition in teaching grade six. The formulation of the experiment was a true experiment with a pretest-posttest procedure. According to Issac et al (1987:52-53) "*the purposes of a true experimental research are to investigate possible causes and effect relationships by exposing one or more experimental groups to one or more treatment conditions and comparing the results to one or more control groups not receiving the treatment*".

Johnson and Christensen (2004) state that:

> *The experimental design conducted by taking a*
> *group of learners and does something special*

with/to them, while measuring their progress. Then compare their results with the data obtained from another group that is similar in every respects to the first group expect for the fact that they didn't receive the special treatment. If there is any discrepancy in the results of the two groups, these can be attributed to the only differences between them, the treatment variable. (p.284)

3.2.1 Experimental and Control Groups:

As mentioned earlier in this Chapter, the essence of good experimental research is the control that an investigator has over the situation and the people in it. According to Bein & McCarthy (2012) several of the threats to the internal validity pertain to the characteristics of the research sample. Therefore, the researcher avoided these threats by identifying them in advance and had control over them. These threats are:

● Selection: random selection and assignment of the students to the experimental and control group. This threat reflects the fact that if the researcher compares two groups with predetermined characteristics, the groups may not start the same.

●Maturation: is also more clearly a problem. Children mature physically and intellectually in a dramatic ways. It means any physical or psychological changes, including fatigue, boredom…etc. This experiment lasted for 70 hours the time between a pretest and a posttest, so there is a little threat that the outcome was a result of maturation.

● Attrition: is the third threat, it is also called subject morality. It means testing people over time, some may not return for later tests. So the researcher designed the groups to be over 30 in case of sickness or other excuses.

● History: is the last threat associated with participants. It means events during the course of a study may affect one group and not another. So the researcher controlled the experimental and control group, so that the dependent variable was merely a result from the independent variable. Beins & McCarthy (2012) find that:

> *When we are able to control for outside factors that affect the behavior of research participants, we can maximize the internal validity of our studies. Sometimes we are more concerned with the internal validity that is, the structure of the experiment itself. At other times, though, we are more concerned with the external validity, the extent to which our results make sense outside the confines of our own research setting. (p.145)*

3.2.2 The Reliability and Validity of the Tests:

Starting with the following phrase of Thorndike's (1982) may give us better introduction to the above two terms:

> *Any test presents a set of tasks that sample from some universe of responses by the examinee. The universe corresponds. We hope, to the latent attribute in which we are interested. In evaluating a test we encounter two broad questions that are different but overlapping. A first question is how accurately it is drawn; a second is how faithfully that universe corresponds to that latent attribute in which we are interested. The first related to what is commonly called*

> *the reliability of the test, the second to its*
>
> *validity.* (p.144)

As derivation from the above, several questions raised: a) What is the definition of each of the above terms?   b) How has reliability and validity been utilized in the present study?

3.2.3 Reliability:

According to Kidder (1890:448) reliability is defined as "*the consistency in results of a test, including the tendency of a test or measurement to produce the same results when it measures twice the entity or attribute believed not to have changed in the interval between the measurements*". A related question to the discussion of reliability is whether or not reliability in social-psychological characteristics is similar to that of physical characteristics. This question has been dealt with and the answer to that is that reliability in physical characteristics is different in magnitude from that in social characteristics insofar as: a) in physical measurement, very reliable measure can obtained directly: b) in addition, the instruments used to obtain the measures are quite precise: and c) the traits or characteristics being measured are relatively stable.

Although there is no standard value of reliability value of reliability coefficient in attitude measurement, Henerson et al (1978:232) suggest that "*reliability coefficients of .70 are sometimes tolerated*". Others considered the nature of the measure to determine the level of reliability coefficient.

In this regard Nunnally (1982) asserts that:

> *It is not necessary for the reliability to be as*
>
> *high in instrument that are used for research in*
>
> *education and related fields as it is for such*
>
> *practical applications as assessing the progress*
>
> *of students in school, counseling them with*

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> *respect to future careers and course of training,*
> *and selecting those who will be permitted to go*
> *to college or enter various vocations. In basic*
> *research a good working rule is that the*
> *reliability coefficient should be at least .70…of*
> *course, high reliability is always "good" in any*
> *institution, but in many research settings it*
> *initially is necessary to work with short*
> *instruments which may not be highly reliable.*
> (p.1600)

The guiding view for the researcher of this study with regard to Cronbach's Alpha in the field of attitude measurement concurs with that of Henerson et al (1978:412) that "*the problems of establishing reliability in this domain should neither be minimized nor exaggerated*".

With respect to the calculation of the reliability coefficient of the present study, the researcher has chosen among the three types of reliability coefficient the internal consistency coefficients.

Although there is no cut and dry framework for selection of one coefficient over the other, "*the internal consistency coefficient is reported to be the most appropriate and commonly used to measure consistency of items presumably measuring the same trait or characteristics, and it requires development of only a single form of the test and cooperation of examinees*" (Brown.1983; Thorndike.1982;Zeller & Carmines, 1980). Further, "*the internal consistency coefficient, commonly called alpha, provides excellent techniques for assessing reliability*" (Carmines & Zeller.1979). Reliability statistics of the experiment showed Cronbach's alpha :(0.6937).

3.2.4 Validity:

"Validity indicates the degree to which an instrument measures the construct under investigation". Bohrnstedt (1983:544). Or validity is an answer to the question: "Is the instrument an appropriate one for what needs to be measured". Henerson et al (1978:67).

3.2.5 Kinds of Validity:

Three kinds of validity, content, criterion-related, and construct, are delimited by the latest standards for educational and psychological Test Manuals (American Psychological Association, 1985). In addition, one other kind of validity that is frequently confused with content validity, called face validity (Anastasi, 1982; Brown, 1983) will be discussed. Because this type of validity is very relevant to the present instrument, its definition is equally important. A brief definition of each one of the above four terms will be presented.

a. Content Validity: involves essentially the systematic examination of the test content to determine whether it covers a representative sample of the behavior domain to be measured. Anastasi.1982:566)

b. Criterion-related Validity: indicates the effectiveness of a test in predicting an individual's behavior in specific situations. Anastasi (1982:566).

c. Construct Validity: is the extent to which the test may be said to measure a theoretical construct or trait. Anastasi (1982:566)

d. Face Validity: is not the same as content validity. While content validity is established by a thorough and systematic evaluation of the test by a qualified judge, and considers both subtle and obvious aspects of relevance. Face validity is less rigorous. It refers, not to what the test

actually measures, but to what appears superficially to measure. Anastasi (1982:567).

Having giving a brief definition of each of the kinds of validity, we now turn to answer the questions: What is an acceptable level of validity in general?, and how is assessment of validity applied to the present instrument? To answer the first question, we need to state this precaution regarding the generalizability of validity is that, the nature of validity is situation-specific, the validity coefficients can vary, and the factors that influence validity coefficient are multiple (Brown.1983). Based on the above precaution, one can say that one definite answer to that question is impossible to give. However, minimal requirements related to the acceptable level of validity are warranted.

Brown (1983) summarized these requirements as:

(a) the cross-validated index of criterion-related validity should be statistically significant; (b) use of the test should result in more correct decisions than use of the base rates;(c) the test should have utility; and (d) the test should be more valid than other available predictors.(p.130)

In order to justify the test, at least those requirements that can be evaluated in the particular situation must be met. The answer of second question raised above is derived from the preceding answer. In other words, the present study is limited to a survey kind of research with more complex independent and dependent variables involved. Therefore, construct content and face validity are the three major concerns of this study, with the latter two being the most appropriate kinds of validity to our study. It has been said Anastasi (1983:136) that "*in adult testing, it is not sufficient for a test to be objectively valid. It also needs face validity to function effectively in practical situations*".

From the above guiding wisdom, the researcher has formulated the test items in terms that appear relevant and plausible in particular setting in which they will be used. In this regard, face validity is considered as one aspect of content validity. In terms of other aspect of content validity, the researcher has systematically reformulated the test in such a way that not only will items appear relevant and plausible but also relevant and content valid. Potential subjects, experts, teachers and judges are asked on one or more occasions to give their view in the process of validating the content and the construction of the test to be relevant to the vocabulary used in (SPINE 1).

3.3 Study Variables:

Best (1977:93) stated that "*variables are the conditions or characteristics that the experimenter manipulates, control or observes*". The independent variables are the conditions or characteristics that the experimenter manipulates in his attempt to ascertain their relationship to observed phenomena. The dependent variables are the conditions or a characteristic that appear, disappear or change as the experimenter introduce, removes or changes independent variables.

The title of this thesis is "Computer-assisted Approach to Enhance Natural Informal Acquisition of Vocabulary" concerning the research objectives, the questions and the hypotheses addressed in this research, the variables of this study are:

a. Variable X (Independent Variable) is the use of the Natural Approach in an informal environment via vocabulary CALL games. The training session for the teachers.

b. Variable Y (Dependent Variable) is the achievement of grade six in developing vocabulary acquisitions.

Table (3.1): The Variables:

Independent Variable	Constants between the two groups	Dependent Variable
Students: The use of the Natural Approach in an informal environment within the classroom via vocabulary CALL games.	(location, time, class, vocabulary level, age and social background)	Development in vocabulary acquisition
Teachers' training session.	Basic schools' English teachers	Positive attitudes towards the proposed programme.

3.4 Method of Questionnaire:

The sample of the study was 35 English teachers at basic schools level, at University of Sinnar (the College of Education). The study was conducted in July 2013. The questionnaire was distributed to the sample and they were asked to complete it, to measure their attitudes-attitudinal questionnaire- toward (the natural approach, CALL vocabulary games and informal environment). A pre questionnaire was distributed to teachers, there was a training session of the proposed teaching and learning program and a post questionnaire was distributed to the same group in order to examine whether and to what extent opportunities and training provided to teachers contribute to their acceptance and attitudes.

3.5 Study Design:

The main objective of the questionnaire is to gather data that would enable the research questions this study sought to address. These were set out in Chapter One, but it is considered worthwhile to repeat them here:

The questions of the study are:

1/ What are the effects of the proposed teaching and learning program on developing the participants' vocabulary acquisition?

2/ Is there a difference in the participants' performance before and after the use of the natural approach in an informal environment via CALL games?

The study necessarily addressed fundamental questions:

3/ What is teacher's attitude towards the natural approach in vocabulary acquisition?

4/ What is teacher's attitude towards CALL games in vocabulary acquisition?

5/ What is teacher's attitude towards informal environment in vocabulary acquisition?

Lastly, and most importantly for this study,

6/ How training courses contributes to teachers' positive attitudes towards use of the proposed teaching and learning program?

As stated at the beginning of this chapter, the essence of scientific research is trying finding answers to questions in a systematic and disciplined manner and it's therefore no wonder that the questionnaire has become one of the most popular research instruments applied in educational research. The popularity of the questionnaire according to Dornyei (2007:101) "*is due to the fact that they are relatively easy to construct extremely versatile and uniquely capable of gathering a large amount of information*". Although the term 'questionnaire' is one that most of the researchers are familiar with, it is not a straightforward task to provide a precise definition of it. According to Gay (1981:245) "*The questionnaire is a widely used and useful instrument for collecting survey information, providing structured, often numerical data*".

Zoltan (2007) states that:

questionnaires can yield three types of data about the respondent: factual questions which are used to find out certain facts about the respondents .e.g. age, gender and race, behavioral questions which are used to find out what the respondents are doing or have done in the past and attitudinal questions which are used to find out what people think, covering attitudes, opinions, beliefs, interests and values.(p. 102)

This questionnaire is structured to get responses from the English teachers about their attitude from applying this study in a classroom, so it is considered an attitudinal in statements. The questionnaire items do not have a good or bad answer; they just elicit information in a non evaluative manner, without gauging their performance against a set of criteria.

Efforts were made to ensure that the questionnaire was set out in a simple and attractive manner, so that it would be straightforward to complete. The structure of the questionnaire and the wording of instructions have to be clear and easily understandable to respondents.

The statements were closed- ended items in 'Likert Scale' (named after its inventor) which consists of a characteristic statement and respondents asked to indicate the extent to which the 'agree' or 'disagree' with it by ticking one of the responses ranging from 'strongly agree' to strongly disagree'. For example

-Games can make students more interested in the learning material

Strongly agree/Agree/Neither agree nor disagree/Disagree/Strongly disagree

After the item administrated, each response option is assigned a number for scoring purposes (for example, 'strongly agree' = 5… 'Strongly

disagree'=1) and the scores for the items addressing the same target are summed up or averaged.

Quite apart from the presentational aspects of the questionnaire, it was also important to determine that the items they contained are relevant to the situation obtaining in teachers. The researcher visited University of Sinnar, College of Education in (Senga). During the informal visits to the English department, the researcher built up a good rapport with the English teachers and raised some important issues such as their attitudes towards using CALL games as instructional tool, their opinions about the objectives governing the teaching of vocabulary in the classroom, teaching methods, motivation, as well as other issues which play significant roles in the teaching-learning process were also discussed. The researcher also consulted several books in the field of teaching and research methodology and techniques.

The questionnaire aimed to measure the teachers' attitude towards the natural approach, CALL vocabulary games and informal environment. The researcher administrated the questionnaire at the end of a true experiment applied by the teachers themselves to get reliable scores from their personal experience.

3.5.1 Developing and Piloting the Questionnaire:

In a questionnaire so much depends on the actual wording of the items, an integral part of questionnaire construction is 'field testing' , that is, piloting the questionnaire at various stages of its development on a sample of people who are similar to the target sample for which the instrument has been designed.

The researcher followed the piloting model suggested by Zoltan (2007:148). The first step was drawing up an item pool by creating many statements. Draft copies were given to a group of students in College of Education (Senga) to draw ideas from this focus group. On the basis of

their understanding and recommendations, important additions and changes were made to the questionnaire. The second step was initial piloting of the item pool to reduce the large list of statements to the intended number. Therefore, the questionnaire was given to four staff members (Ph.D holders) at Imam Mohammed Ibn Saud Islamic University, College of Language and Translation, Riyadh. Their constructive comments and suggestions on the improvement of the questionnaire led to additional revisions. The supervisor's and jury members comments were found useful when checking and revising the instruments. The aim was to ensure that the meaning of each item would be as clear as possible to the respondents and to achieve the optimum structure, order and wording to the items in the questionnaire. The third step, was final piloting, based on the feedback received from the initial pilot group, the researcher put a near final version of the questionnaire that 'felt' satisfactory but still didn't know how the items will work in actual practice that is whether the trained teachers will reply to the items in the manner intended. Therefore, the questionnaire was administrated to a group of ten teachers form the same group at the College of Education and they were excluded later from the final sample.

The final step was the answers of the pilot group were submitted to statistical analyses to fine-tune and finalize the questionnaire. SPSS offered a very useful procedure 'reliability analysis' which provided a straightforward technique excluded items that didn't work.

The structure of the questionnaire was kept simple and the items were reasonably clear, although balance had to be struck between brevity and providing sufficient stimulus to promote reasonable responses to the issues under investigation.

The main purpose of the pilot study was intended to identify any faults in the instruments and to familiarize the researcher with the operations of

the methods. In the light of the pilot study, some errors in the phrasing of items were identified by the supervisor, judges and the respondents. Those errors were the following:

a) Q4, read 'students acquire language only when they are introduced to understand language that is…' and was changed to 'students acquire language when they are introduced to language that is…'.

b) Q7, read 'The quality of interactivity in computers (text, voice, graphics) make them superior to the traditional means of instruction' and was changed to 'The quality of interaction in computers (text, voice, graphics) make them superior to the traditional means of instruction'.

c) Q10, read 'playing games can help students acquire vocabulary without actually realizing that' and was changed to 'playing games helps students acquire vocabulary without actually realizing it'.

d) Q11, read 'informal environment within the classroom is very effective in acquiring vocabulary' and was changed to 'An informal environment within the classroom is very helpful in acquiring vocabulary'.

e) Q13, 'Games playing as a site for an informal learning' and was changed to' Game playing as a site for an informal learning'.

The pilot study was conducted on a small sample in order "*to test the questionnaire and to see whether there is any possibility that worthwhile results will be found*" Wright & Anderson (1988, p.12). The pilot study was a final opportunity to improve the questionnaire results by creating new ideas, testing hypotheses and reducing the chance of error. In addition, it gave an opportunity to test the validity and the reliability of the instrument.

3.5.2 Administration of the Pilot Study:

The pilot study was conducted on a small sample in order to "*test questionnaire and to see whether there is any possibility that worthwhile*

results will be found" (Anderson, 1988, p.12). The pilot study was a final opportunity to improve the questionnaire results by creating new ideas, testing hypotheses and reducing the chance of error. In addition, it gave an opportunity to test the validity and the reliability of the instrument.

3.5.3 Administrating the Questionnaire:

Questionnaire administration procedures play a significant role in affecting the quality of the elicited responses. The following administration procedures were employed:

● The researcher contacted the faculty members from the College of Education in (Senga), who agreed to assist in the identification of the English teachers. The researcher and the College dean agreed on date and time for the researcher to meet and speak to the subjects. The faculty members of English department made a prior announcement to the respondents regarding the scheduled meeting.

● The researcher met with the English teachers, explained the purpose and nature of the questionnaire and that there will be a training session and a true experiment for grade six and offered sample items to generate a positive climate for the administration and raising the 'professional' feel of the survey.

● The faculty members had a positive attitude towards the training session, experiment and the questionnaire, the respondents picked up their attitude because the message they received was positive.

● The questionnaire was administrated by hand at the end of the training session and a true experiment they conducted on grade six to measure their attitude towards the hypothesis.

3.5.4 Validity of the Questionnaire:

A valid test is one that measures what it is supposed to measure. Neuman (2000:521) defines the term of validity in the context of experimental

design as *"A term meaning truth that can be applied to the logical tightness of experimental design, the ability to generalize findings outside a study, the quality of measurement, and the proper use of procedures"*. Neuman (2000) divides validity into five types: content, predictive, concurrent, construct and face validity. Of these five types of validity, the researcher assessed two types of validity in this questionnaire: content and face validity. The purpose of this assessment was to make sure that the items of the study instruments were valid and relevant for the purpose of the study.

● Content validity involves comparison of test items with a defined domain of the content, to ensure that all desired concepts and dimensions are included. In the as indicated above, the results obtained from the supervisor, judges and students were considered in formulating the questionnaire to ensure the content validity.

● Face Validity. This is the most basic type of validity, and means that the questionnaire is considered to be consistent and related to its intended aims. The questionnaire was given to the department of Language and Translation in Imam Mohammed Ibn Saud University in Riyadh and University of Al Neelen (Dr. Eiman Abass) who was asked to comment on the version and the clarity of the statements. The researcher's supervisor gave invaluable suggestions on the structure and lay out of the instrument with a view to obtaining the highest practicable values and validity reliability.

3.5.5 Reliability of the Questionnaire:

Reliability is a very important characteristic of tests and scales used in educational research. Reliability can be defined according to Borg and Gall (1983:281) *"the level of internal consistency or stability of the measuring device over time"*. In the experimental field it is necessary to have reliable achievement tests to identify any differences between the

experimental group and the comparison groups. Reliability implies that the tests would yield similar results on replication with the same respondents. Reliability can be determined in several ways, all of which test the correlation between two sets of scores: the closer the coefficient is to 1.00, the more reliable is the test.

In the present study, the reliability of all the instruments was tested by using Cronbach's Alpha. This method is commonly used and is considered satisfactory by many specialists in educational measurement. "*It is an appropriate method for multiple choice tests or likert-type scales*" Borg and Gall (1983:285).Moreover; the results are easy to interpret.

Table (3.2): Reliability of the Questionnaire.

Hypothesis	Alpha
(Natural approach)	0.5729
(vocabulary CALL games)	0.4433
(informal environment)	0.6268
Total	0.4036

3.6 The Population and Samples

3.6.1 Population:

A population is a complete set of individuals or subjects having common observable characteristics. The population may be all of the individuals of a particular type or a more restricted part of that group. The population of interest can vary widely depending on the research questions and the purpose of the study. According to Best (1977:267) "*population is any group of individuals that have one or more common characteristics in common that of interest to the researcher*". Population is all individuals from whom the data are collected.

The populations of this study are the English teachers in basic schools in Sudan and the learners of English in basic schools level.

3.6.2 Sample:

Getting sample is very important in scientific research because the total number of population is usually too many. Therefore, the researcher took a random sample as representative of the population. According to Best (1977:268) *"a sample is a small proportion of a population selected for the observation and analysis"*. The researcher took the sample to make the research more effective and efficient.

There were 45 English teachers for the basic schools in college of education (Senga), all volunteered to participate in this study. Ten of them were eliminated from this, because they participated in piloting the questionnaire. Therefore, thirty five English teachers became the subjects of this study. Confidentially was extended to each of the participants. Seventy pupils from Sinnar Sugar Company Basic School have been chosen as a sample of the study. The sample was chosen randomly and the choice of sampling was not based on certain vocabulary level. Students' age range 11-12 years old. The experimental group (EG) consisted of 35 students; and the control group (CG) consisted of 35 students. Both groups had the same ability. Mean difference is (-0.92), even though the details about the subjects' social and educational backgrounds were not checked, it is believed the majority, if not all share the same background(they are students of employees in Sinnar Sugar factory), this belief was confirmed by the school headmaster Samia Mergani.

3.7 Study Setting:

The research was conducted in Sudan, Sinnar State. The English teachers are from University of Sinnar, College of Education, English Department in (Senga). Grade six is from Sinnar Sugar Co. Basic schools. It started in June 2013. First, the researcher started the experiment with grade six,

the lessons were given five times a week for both groups and the duration was two hours for each group. The treatment was 70 hours.

3.8 Data Analysis Procedures:

The analysis of any type of data relies mainly on the collection procedures used. Exclusive reliance on one method may bias or distort the researcher's picture of the particular "*slice of reality he is investigating*" Cohen & Manion (1980:208). The researcher needs to be confident that the data generated are not simply artifacts of one specific method of collection. And this confidence can only be achieved when different methods of data collection yield substantially the same results.

In this study, data obtained from the questionnaire and the pretest – posttest experiments are analyzed with the aid of descriptive statistics. These can provide information about the attitudes of the English teachers toward the teaching techniques and the development that happened in students' vocabulary acquisition, by pre and post means of scores, mean difference and p-value.

SPSS (Statistical Package for Social Sciences) was used in analyzing the data of this research. After the data collection had been administrated, the data were transferred to the computer database. Many statistical commands for SPSS were used to analyze the data.

CHAPTER FOUR

INTERPRETATION AND DATA ANALYSIS

CHAPTER FOUR

INTERPRETATION AND DATA ANALYSIS

4.0 Introduction:

The pre/post tests of grade six were analyzed to evaluate the experiment. Teachers' attitudes towards the natural approach, CALL games and informal environment were evaluated in a pre/post questionnaire. To reveal significant differences or otherwise in post means of scores a t-test and a p –test were used.

4.1 Control Group Pretest Results:

Table (4.3) Control Group: Results of Pretest.

Questions	Means	Std. Deviation
PREQ1	2.06	0.84
PREQ2	1.86	0.81
PREQ3	3.26	1.38
PREQ4	1.51	0.61
PREQ5	2.37	0.84
PREQ6	1.97	0.75
PREQ7	2.06	1
Total	15.09	2.81

Figure (4.2) Control Group: Results of Pretest
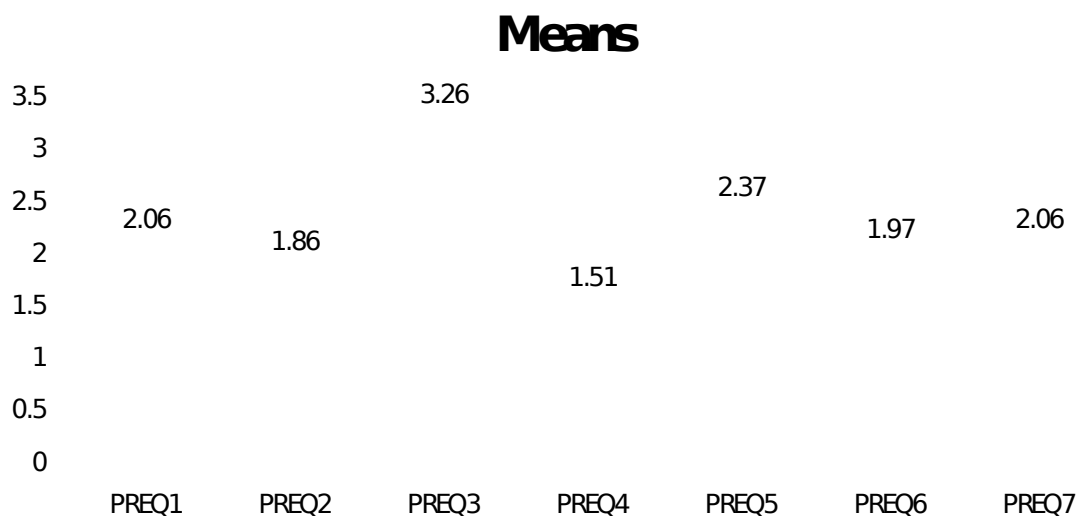
Means

	PREQ1	PREQ2	PREQ3	PREQ4	PREQ5	PREQ6	PREQ7
	2.06	1.86	3.26	1.51	2.37	1.97	2.06

a. Pre data means of scores obtained by the control group indicate that the six graders' performance and achievement in SPINE 1 vocabulary is behind the level necessary for having a good acquisition.

b. The lowest pre data means of scores are in question no.4 (1.51) and the lowest standard deviation is (0.16).

c. The highest pre data means of scores are in question no.3 (3.26) and the highest standard deviation is (1.38).

d. The Total of pre data means of scores is (15.09) and the standard deviation is (2.81).

4.2 Experimental Group Pretest Results:

Table (4.4) Experimental Group: Results of Pretest.

Questions	Mean	Std. Deviation
PREQ1	2.34	1.06
PREQ2	2.09	1.01
PREQ3	2.74	1.79
PREQ4	1.11	0.68
PREQ5	2.17	0.86
PREQ6	1.71	0.86
PREQ7	2	1.03
TPRE	14.17	2.99

Figure (4.3) Experimental Group: Results of Pretest.
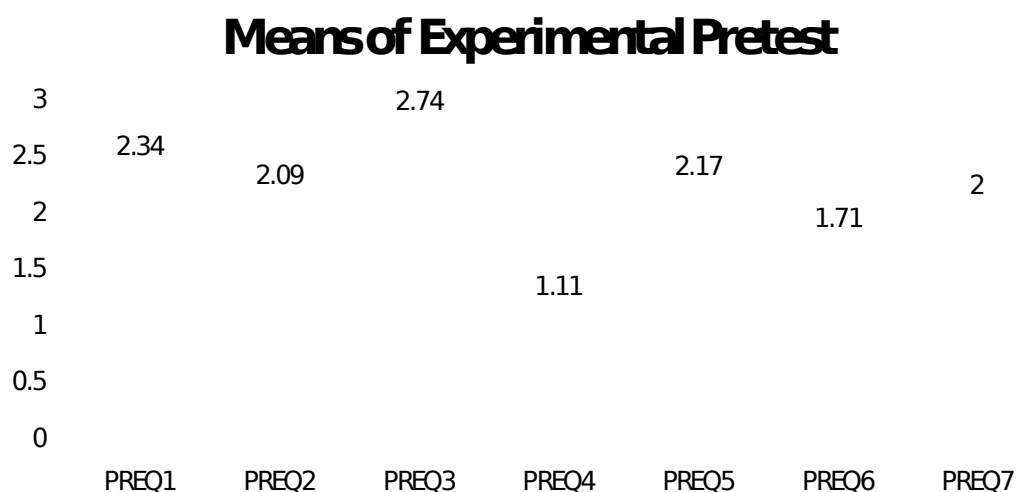
Means of Experimental Pretest

a. Pre data means of scores obtained by the experimental group indicate that the six graders' performance and achievement in vocabulary acquisition is weak, similar to the Control group.

b. The lowest pre data means of scores are in question no.4 (1.11) and the standard deviation (0.68).

c. The highest pre data means of scores are in question no.3 (2.74) and the standard deviation is (1.79).

4.3 Comparison between Control and Experimental Pretests' Results:

Table (4.5) Experimental & Control Group Pretests.

Questions	Means of Con. Pretest	Means of Exp. Pretest	Mean diffeneces	t-Value	P-Value
Q1	2.06	2.34	0.28	1.254	0.214
Q2	1.86	2.09	0.23	1.044	0.3
Q3	3.26	2.74	-0.52	-1.347	0.182
Q4	1.51	1.11	-0.4	-2.594	*0.012
Q5	2.37	2.17	-0.2	-0.984	0.329
Q6	1.97	1.71	-0.26	-1.336	0.186
Q7	2.06	2	-0.06	-0.236	0.814
Total	15.09	14.17	-0.92	-1.319	0.192

Figure (4.4) Experimental & Control Group: Pre means of scores.

Means of Control & Expermintal Pretests

Means of Con. Pretest   Means of Exp. Pretest
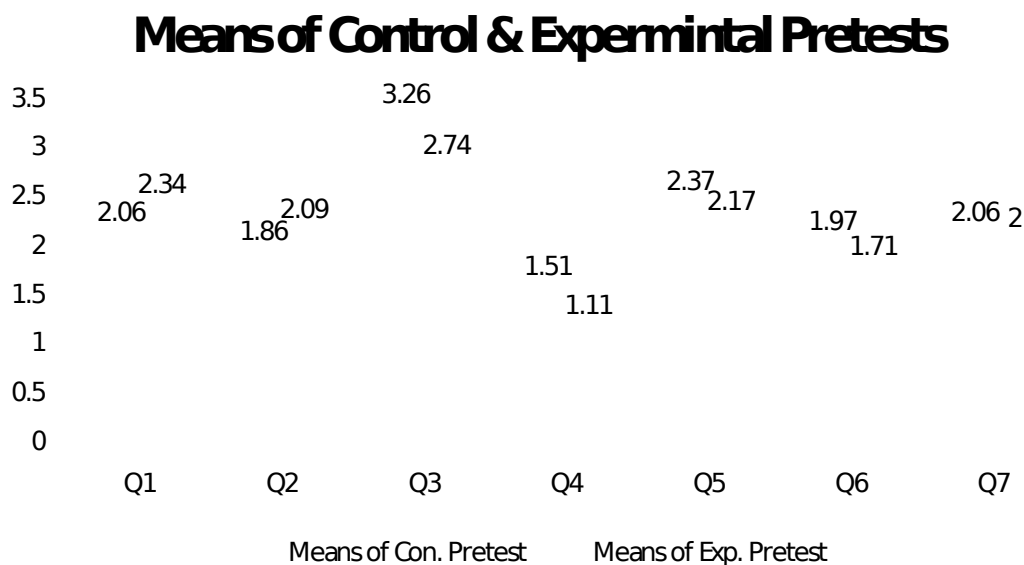
Close inspection of the data presented in the table above reveals the following:

a. Pre data means of scores obtained by both groups indicate that the subjects of the study lack the skill of vocabulary acquisition. Both groups (control & experimental) were weak in English.

b. The lowest pre data means of scores is in question no.4: control (1.51). experimental in question no.4: (1.11).

c. The highest pre data means of scores is in question no.3: control: (3.26). Experimental: (2.74).

d. The mean differences range between (-0.2) and (-0.52).

e. The computed t-value -1.319 exceeds the t-value at 0.01.

f. Comparison of the pretests means of scores and mean differences shows that both the control and the experimental groups had similar scores in the pretests. The P value indicates that there is a difference between the two variables. Although the means showed a little differences, but six graders' vocabulary level wasn't that much different. This means that their learning background is the same.

 g. Therefore, it can be assumed that the experimental and control groups were   homogeneous and equivalent before conducting the experiment, and that the change in the students' vocabulary acquisition would be attributed to the effect of using the proposed teaching program.

4.4 Control Group Posttest Results:

Table (4.6) Control Group: Post test Results.

Questions	Mean	Std. Deviation
PSTQ1	2.83	0.51
PSTQ2	2.43	0.71
PSTQ3	4.91	0.89
PSTQ4	1.71	0.57
PSTQ5	2.74	0.74
PSTQ6	2.49	0.56
PSTQ7	2.77	0.55
TPOST	19.89	1.47

Figure (4.5) Control Group: Post test Results

Means of Control Group Post test
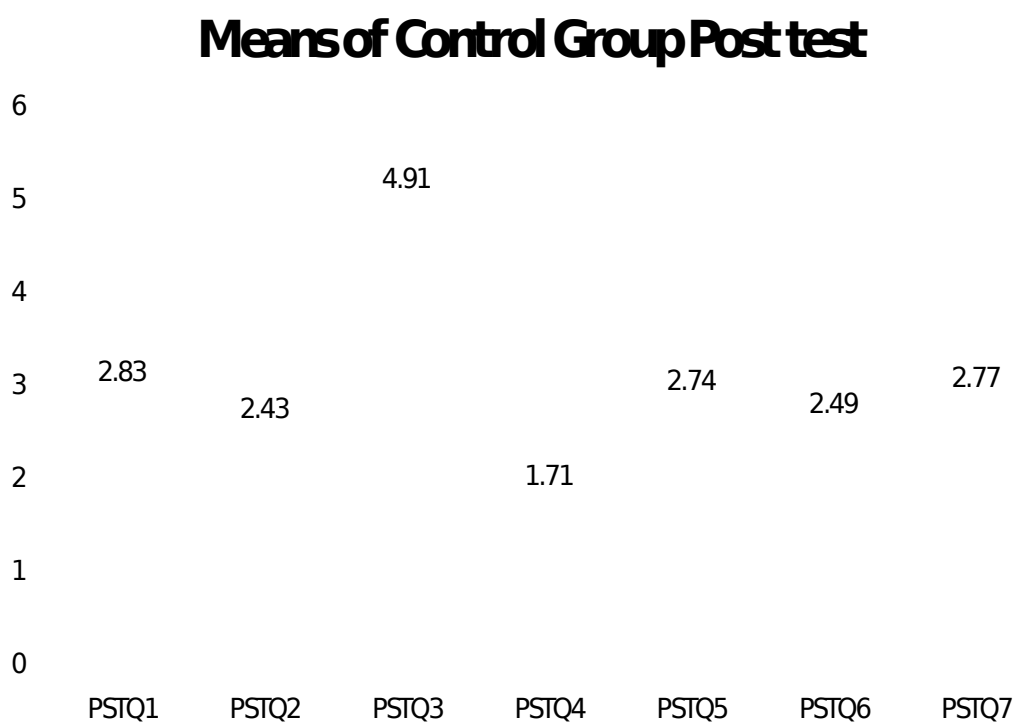
 Post data means of scores obtained by the control group indicate that six graders' performances and achievements in the post test is better than the pretest.

a. The lowest post data means of scores is in question no.4 (1.71) and standard deviation is (0.57).

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b. The highest post data means of scores is in question no.3 (4.91) and standard deviation is (0.89).

4.5 Experimental Group Posttest Results:

Table (4.7) Experimental Group: Results of Post test.

Questions	Mean	Std. Deviation
PSTQ1	4.51	0.95
PSTQ2	4.06	0.84
PSTQ3	8.49	1.36
PSTQ4	2.71	0.52
PSTQ5	5.31	0.83
PSTQ6	4.46	0.71
PSTQ7	4.23	0.69
TPOST	33.77	3.69

Figure (4.6) Experimental Group: Results of Post test.

Means of Experimental Post test

```
9                         8.49
8
7
6                                    5.31
5   4.51                                    4.46    4.23
         4.06
4
3                              2.71
2
1
0
   PSTQ1  PSTQ2  PSTQ3  PSTQ4  PSTQ5  PSTQ6  PSTQ7
```
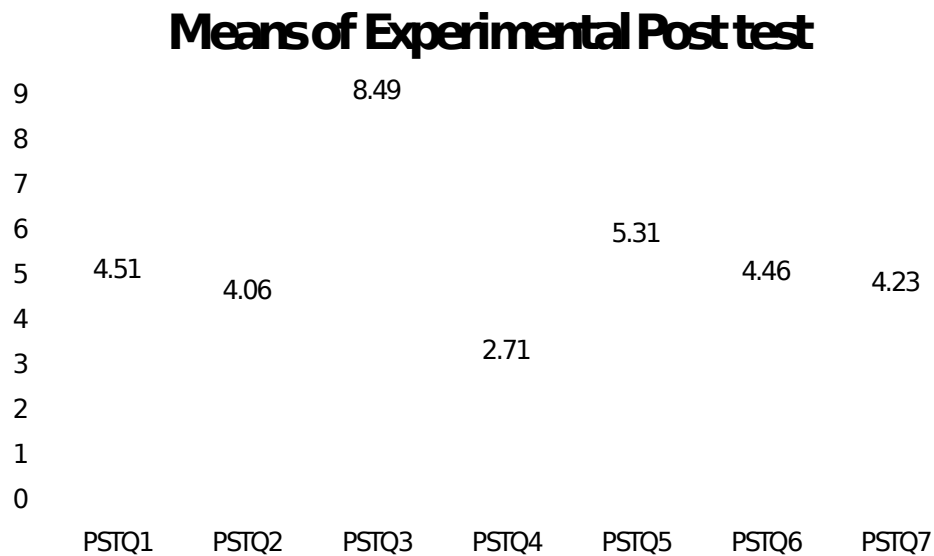
Post data means of scores obtained by the experimental group indicate that the treatment has improved students' vocabulary acquisition and their level in English generally.

a. The lowest data means of scores is in question no.4 (2.71) and standard deviation is (0.52).

b. The highest post data means of scores is in question no.3 (8.685) and standard deviation is (1.36).

4.6 . Control Group: Comparison between Pre/ Post Results:

Table (4.8) Control Group: Pre/Post Results.

Questions	Means of Con. Pretest	Means of Con. Posttest	Mean Difference	T-Value	p-value
Q1	2.06	2.83	0.77	-4.845	0.000*
Q2	1.86	2.43	0.57	-2.953	0.006*
Q3	3.26	4.91	1.65	2.79	0.009*
Q4	1.51	1.71	0.2	-1.42	0.165
Q5	2.37	2.74	0.37	-2.074	0.046*
Q6	1.97	2.49	0.52	-3.309	0.002*
Q7	2.06	2.77	0.71	-3.841	0.001*
Total	15.09	19.88	4.79	-8.959	0.000*

Figure (4.7) Control Group: Pre/Post Results

Means of Control Group Pre / Post
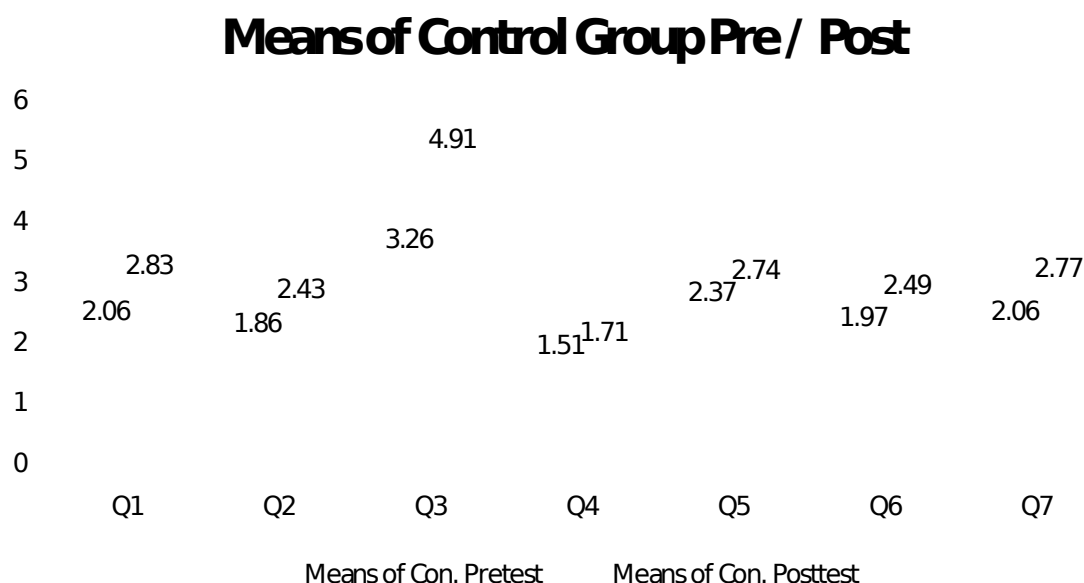
a. Pre data means of scores obtained by control group indicate that the subjects of the study lack the skill of vocabulary acquisition. The p-value shows that there is a significant difference between the pre and post tests. The significance is not as big as the experimental group, because the techniques of learning and teaching were traditional.

b. The lowest pre data means of scores is in question no.4: control (1.51); the lowest post data means of scores is in question no.4: (1.71).

c. The highest pre data means of scores is in question no.3: (3.26); the highest post data means of scores is in question no.3: (4.91).

d. The mean differences range between (-0.2) and (1.65).

e. The computed t-value -8.959 exceeds the t-value at 0.01.

f. Comparison of the pre/posttests means of scores and mean differences shows that the students achieved a progress in the seven questions but it was a little progress in vocabulary acquisitions.

4.7 Experimental Group: Comparison between Pre/ Post Results:

4.8 Table (4.9) Experimental Group: Pre/Post Results.

Questions	Means of Exp. Pretest	Means of Exp. Posttest	Mean Difference	T-Value	p-vlaue
Q1	2.34	4.51	2.17	-8.126	0.000*
Q2	2.09	4.06	1.97	-8.437	0.000*
Q3	2.74	8.49	5.75	-16.702	0.000*
Q4	1.11	2.71	1.6	-11.662	0.000*
Q5	2.17	5.31	3.14	-16.292	0.000*
Q6	1.71	4.46	2.75	-14.154	0.000*
Q7	2	4.23	2.23	-10.445	0.000*
Total	14.17	33.77	19.6	-26.553	0.000*

Figure (4.8) Experimental Group: Pre/Post Results.

Means of Experimental Group Pre / Post

	Q1	Q2	Q3	Q4	Q5	Q6	Q7
Means of Exp. Pretest	2.34	2.09	2.74	1.11	2.17	1.71	2
Means of Exp. Posttest	4.51	4.06	8.49	2.71	5.31	4.46	4.23

Means of Exp. Pretest   Means of Exp. Posttest
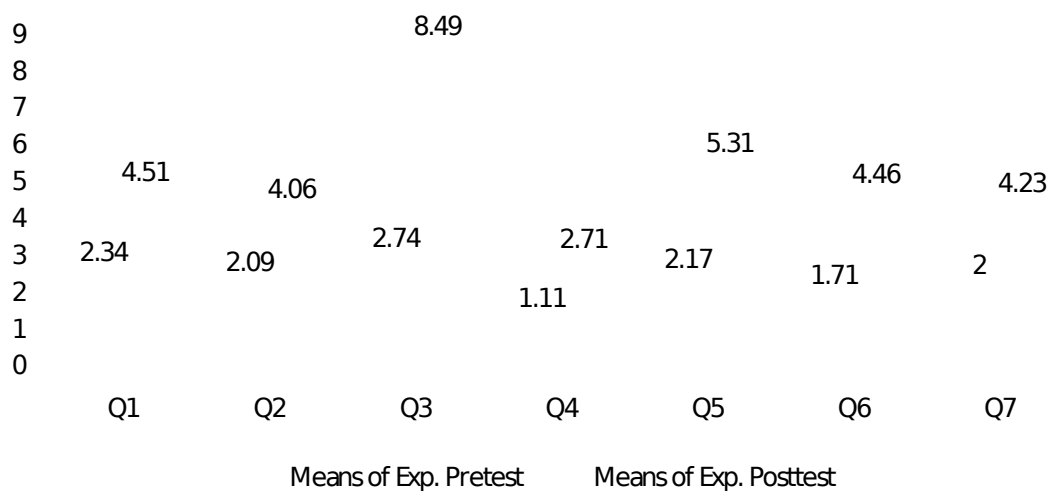
a. Figure (4.7) indicates that the subjects of the study achieved a real progress in vocabulary acquisition. There is a huge significant difference in the post data means of scores of the group.

b. The lowest pre data means of scores is in question no.4: Control (1.11); the lowest post data means of scores is in question no.4: (2.71).

c. The highest pre data means of scores is in question no.3: (2.74); the highest post data means of scores is in question no.3: (8.49).

d. The mean differences range between (1.6) and (3.14).

e. The computed t-value -26.553 exceeds the t-value at 0.01.

f. The p-value indicates that there is a significant difference in all questions.

g. This means that the natural approach in an informal environment via CALL games as a teaching and learning method is very effective in vocabulary acquisition.

The results show a very important significance between the pre and post tests as a result of the treatment.

4.9 Comparison between Control and Experimental Post tests' Results:

Table (4.10) Comparison between Control and Experimental Posttests' Results.

Questions	Means of Cont. Post test	Means of Exp. Post test	Mean Difference	T-Value	p-value
Q1	2.83	4.51	1.68	-9.228	0.000*
Q2	2.43	4.06	1.63	-8.832	0.000*
Q3	4.91	8.49	3.58	-13.024	0.000*
Q4	1.71	2.71	1	-7.659	0.000*
Q5	2.74	5.31	2.57	-13.65	0.000*
Q6	2.49	4.46	1.97	-12.985	0.000*
Q7	2.77	4.23	1.46	-9.794	0.000*
Total	19.88	33.77	30.94	-20.657	0.000*

Figure (4.9) Comparison between Control and Experimental Posttests' .Results

Means of Control & Experimental Group Post Tests

Means of Cont. Post test   Means of Exp. Post test
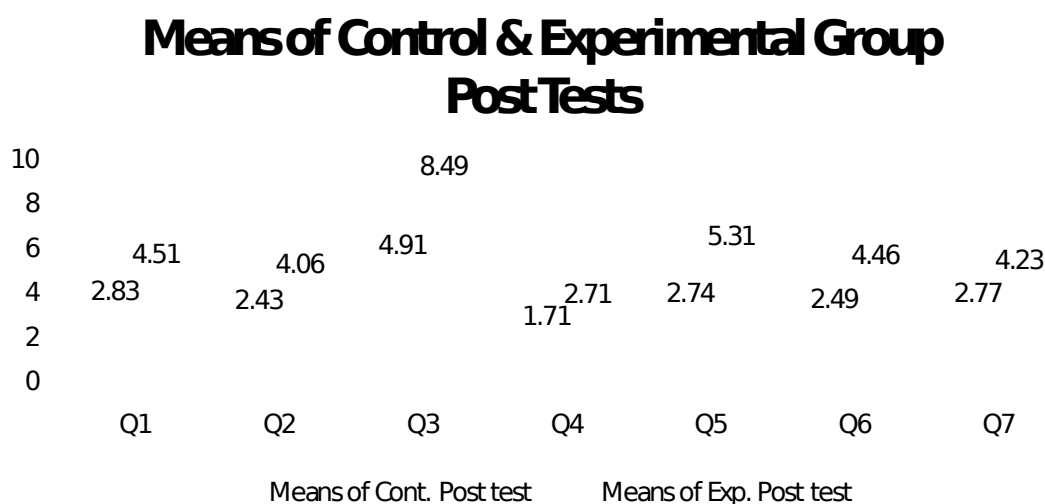
The table indicates the following:

a. Post means of scores reveal a high level of learning in the experimental group.

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b. The lowest post means of scores in the control group are in question no.4. (1.71); the lowest post means of scores in the experimental group are in question no.4. (2.71).

c. The highest post means of scores in the control group are in question no.3. (4.91); the highest post means of scores in the experimental group are in question no.3. (8.49).

d. The mean difference in the post tests for control and experimental groups range between (1) and (3.58).

e. The p-value shows a significant difference between the two post tests because a low significance value for the p- value typically less than (0.05).

f. There were significant differences among the mean scores of students' vocabulary performance in the control and experimental groups in favour of the experimental group. This means that the students in the experimental group who were instructed to acquire vocabulary according to the proposed program were much better than those in the control group who were instructed to learn according to the traditional method.

4.9. The First Hypothesis: Pre and Post Questionnaire's Results:

The first five questions concerned with the Natural Approach. These questions measured the teachers' attitudes towards the techniques of using this approach in the classroom. The questions were:

1/ It is better to devote class time primarily to providing input for vocabulary acquisition.

2/ The teacher speaks only the target language in the classroom.

3/ The teacher corrects the students whenever it is appropriate and doesn't interfere with communication.

4/ Students acquire language only when they are introduced to understand language that is a little beyond their current academic level.
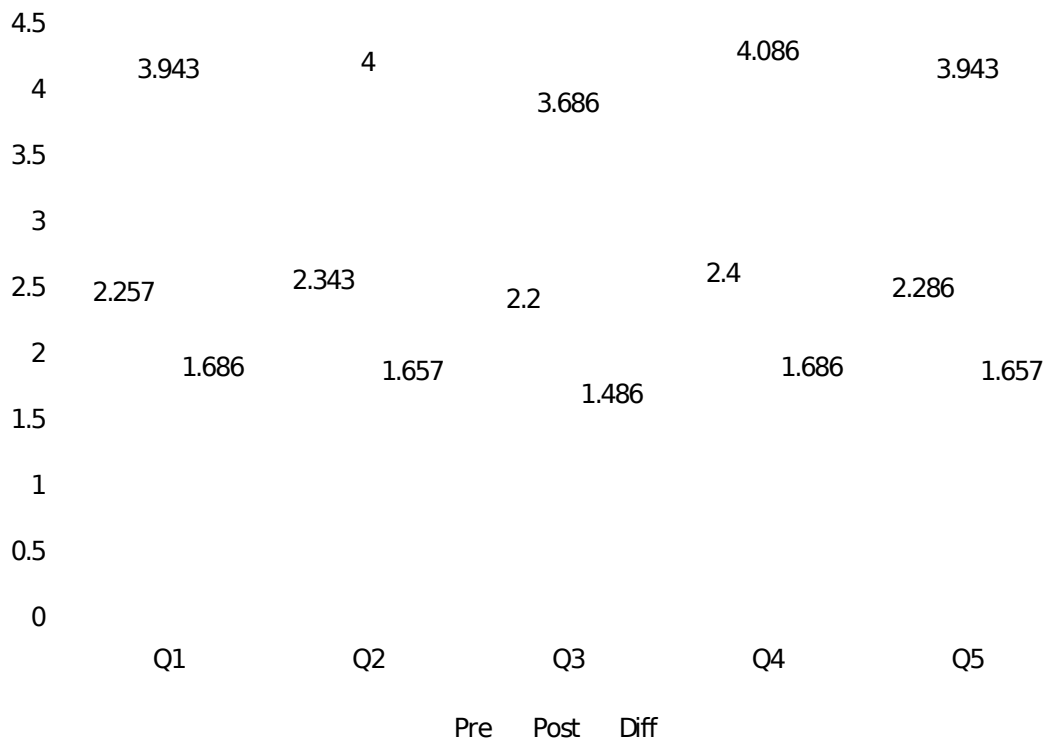
5/ Students with high motivation, self confidence and low anxiety level tend to do better in second language acquisition.

Table (4.11) Results of the First Hypothesis: Pre and Post Results.

Question	Mean		Diff	T Pair Test	
	Pre	Post		T-value	P-Value
Q1. It is better to devote class time primarily to providing input for vocabulary acquisition.	2.257	3.943	1.686	-13.154	0.000
Q2. The teacher speaks only the target language in the classroom.	2.343	4.000	1.657	-12.819	0.000
Q3. The teacher corrects the students whenever it is appropriate and doesn't interfere with communication.	2.200	3.686	1.486	-10.747	0.000
Q4. Students acquire language only when they are introduced to understand language that is a little beyond their current academic level.	2.400	4.086	1.686	-9.022	0.000
Q5. Students with high motivation, self confidence and low anxiety level tend to do better in second language acquisition.	2.286	3.943	1.657	-14.343	0.000
Total	**2.297**	**3.931**	**1.634**	**-21.947**	**0.000**

.Figure (4.10) Results of the First Hypothesis: Pre and Post Results

4.5
4   3.943   4   4.086   3.943
                                    3.686
3.5
3
2.5   2.257   2.343   2.4   2.286
                            2.2
2   1.686   1.657   1.686   1.657
                            1.486
1.5
1
0.5
0
        Q1   Q2   Q3   Q4   Q5

Pre   Post   Diff

Close inspection of the data presented above reveals the following:

a. Teachers' attitudes have changed positively to more effective practices that helped improve the vocabulary acquisition.

b. Pre data means of scores obtained by the group indicate that teachers' attitudes towards the Natural Approach are negative.

c. The lowest pre data means of scores are in question no.3.(The teacher corrects the students whenever it is appropriate and doesn't interfere with communication): (2.200). And question no.1. (. It is better to devote class time primarily to providing input for vocabulary acquisition): (2.257).

d. The highest post data means of scores are in question no.4. (Students acquire language only when they are introduced to understand language that is a little beyond their current academic level): (4.086).

e. Comparison of the pre/post means of scores and mean differences shows that the subjects have developed positive attitudes towards the Natural Approach.

f. The computed t-value -21.947 exceeds the t-value at 0.01.

g. The p-value shows that there is a significant difference between the pre and post attitudes, the group achieved a real progress.

h. To sum up, there were significant differences between attitudes mean scores of the teachers in the pre and posttest in favour of the posttest mean of scores. These results indicate that the proposed teaching program has reflected positively upon the attitudes of the teachers who got involved in its activities. The proposed teaching and learning program in particular was more distinguished and effective than the traditional method.

4.10 The Second Hypothesis: Pre and Post Questionnaire's Results:

The second five questions concerned with CALL Games. These questions measured the teachers' attitudes towards the techniques of using these vocabulary games in the classroom. The questions were:

6/ Many educational professionals think that with computers lies the solution to vocabulary acquisitions.

7/ The quality of interactivity in computers (text, voice, graphics) make them superior to the traditional means of instruction.

8/ Computer actively involves the students in learning and interaction throughout the lesson and reduces the instruction time.

9/ Games can make students more interested in the learning material.

10/ Playing games can help students acquire the vocabulary without actually realizing that.

Table (4.12) Results of the Second Hypothesis: Pre and Post Results

	Mean			T Pair Test	
Questions	Pre	Post	Diff	T-value	P-Value
Q6. Many educational professionals think that with computers lies the solution to vocabulary acquisitions.	2.743	4.171	1.429	-9.560	0.000
Q7. The quality of interactivity in computers (text, voice, graphics) make them superior to the traditional means of instruction.	2.543	3.800	1.257	-7.829	0.000
Q8. Computer actively involves the students in learning and interaction throughout the lesson and reduces the instruction time.	2.629	4.029	1.400	-10.204	0.000
Q9. Games can make students more interested in the learning material	2.057	3.857	1.800	-12.782	0.000
Q10. Playing games can help students acquire the vocabulary without actually realizing that.	2.257	3.686	1.429	-8.635	0.000
Total	**2.446**	**4.034**	**1.589**	**-16.037**	**0.000**

Figure (4.11) Results of the Second Hypothesis: Pre and Post Results
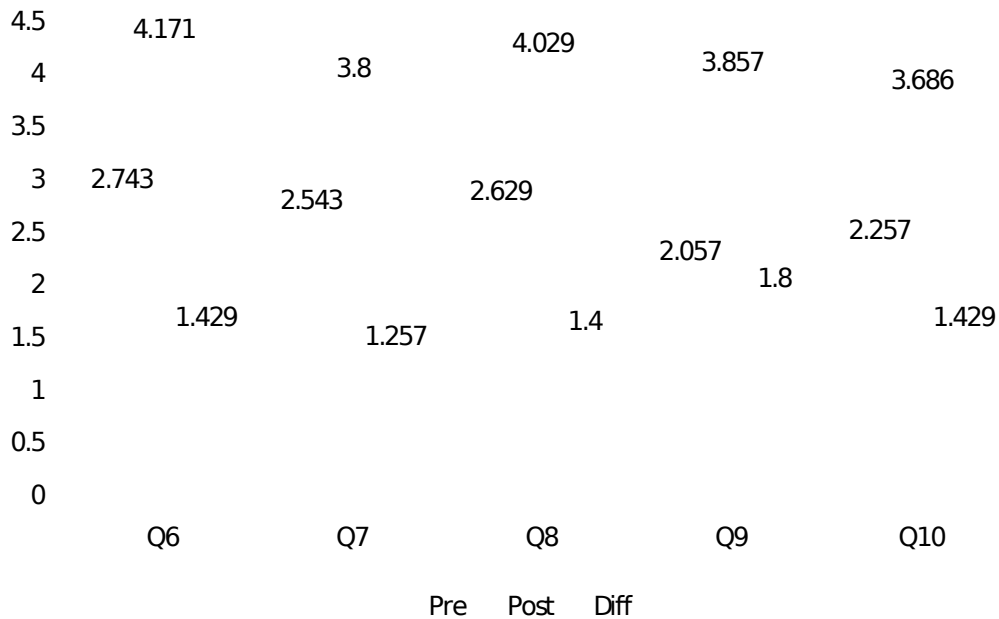
4.5
4.171   4.029
4   3.8   3.857   3.686

3.5

3   2.743   2.257
2.543   2.629
2.5   2.057
2   1.8
1.429   1.4   1.429
1.5   1.257

1

0.5

0

Q6   Q7   Q8   Q9   Q10

Pre   Post   Diff

Close inspection of the data presented above reveals the following:

a.Teachers' attitudes have changed positively to more effective practices that helped improve the vocabulary acquisition.

b.Pre data means of scores obtained by the group indicate that teachers' attitudes towards CALL Games are negative.

c.The lowest pre data means of scores are in question no.9. (Games can make students more interested in the learning material): (2.057).

d.The highest post data means of scores are in question no.6. (. Many educational professionals think that with computers lies the solution to vocabulary acquisitions.): (4.171).

e.Comparison of the pre/post means of scores and mean differences shows that the subjects have developed positive attitudes towards CALL Games and using computers in classroom as a means of teaching and learning English vocabulary.

f.The computed t-value 16.037 exceeds the t-value at the level of 0.01.

g.The p-value shows that in all questions, there is a significant difference between the pre and post attitudes, the group achieved a real progress.

4.11. The Third Hypothesis: Pre and Post Questionnaire's Results:

The third five questions concerned with Informal Classroom Environment. These questions measured the teachers' attitudes towards the benefits setting students in an informal classroom environment to enhance vocabulary acquisition. The questions are:

11/ Informal environment within the classroom is very effective in acquiring vocabulary.

12/ Computer games in an informal environment are more successful in attracting interest and motivation from young learners than schools.

13/ Games playing functions as a site for an informal learning.

14/ A single context as an informal environment hardly gives enough information for the students to guess the full meaning of a word.

15/ Most Sudanese students (6th grade) are still not able to understand what people say easily. The problem lies in the traditional teaching method.

Table (4.13) Results of the Third Hypothesis: Pre and Post Results.

| Question | Mean | | | T Pair Test | |
	Pre	Post	Diff	T-value	P-Value
Q11. Informal environment within the classroom is very effective in acquiring vocabulary.	2.486	4.200	1.714	-11.351	0.000
Q12. Computer games in an informal environment are more successful in attracting interest and motivation from young learners than schools.	2.514	3.886	1.371	-9.248	0.000
Q13. Games playing functions as a .site for an informal learning	2.457	3.971	1.514	-8.862	0.000

Q14. A single context as an informal environment hardly gives enough information for the students to guess the full meaning of a word.	2.629	4.057	1.429	-8.149	0.000
Q15. Most Sudanese students (6th grade) are still not able to understand what people say easily. The problem lies in the traditional teaching method.	2.771	4.057	1.286	-8.216	0.000
Total	**2.446**	**4.034**	**1.589**	**-17.686**	**0.000**

Figure (4.12) Results of the Third Hypothesis: Pre and Post results.
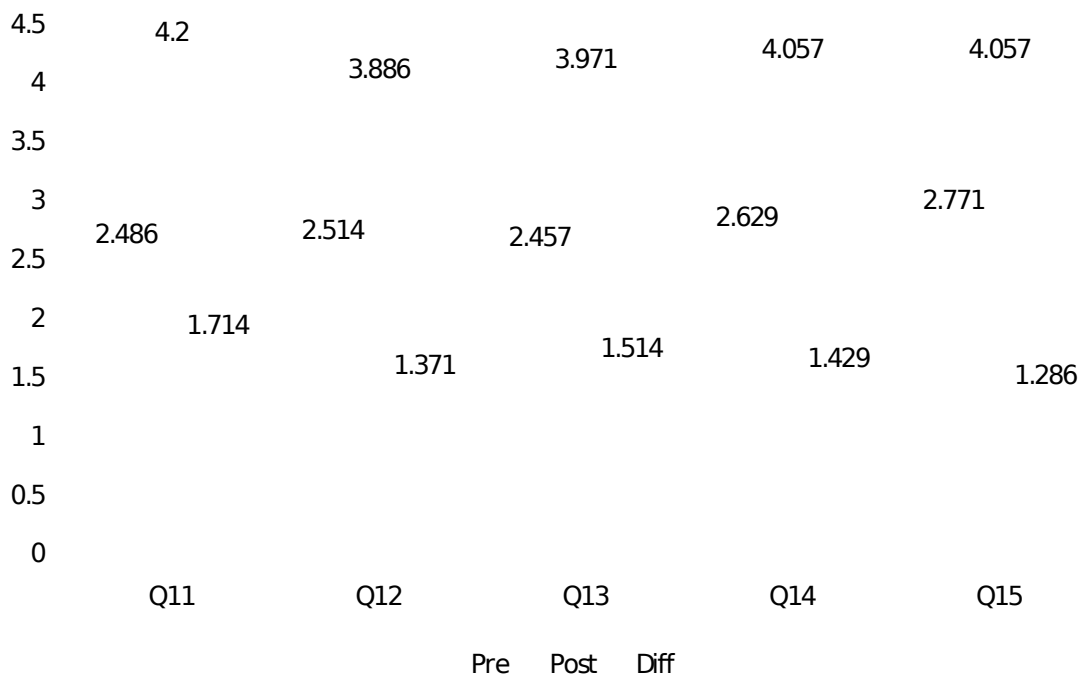
The above table reveals the following:

a. Teachers' attitudes have changed positively to more effective practices that helped improve the vocabulary acquisition.

b. Pre data means of scores obtained by the group indicate that teachers' attitudes towards Informal Environment are negative.

c. The lowest pre data means of scores are in question no.13. (Games playing functions as a site for an informal learning.): (2.457).

d. The highest post data means of scores are in question no.14. (. A single context as an informal environment hardly gives enough information for the students to guess the full meaning of a word); and question no.15. (Most Sudanese students (6th grade) are still not able to understand what people say easily. The problem lies in the traditional teaching method): (4.057)

e. Comparison of the pre/post means of scores and mean differences shows that the subjects have developed positive attitudes towards an informal classroom environment to enhance vocabulary acquisition.

f. The computed t-value -17.686 exceeds the t-value at the level of 0.01.

g. The p-value shows that in all questions, there is a significant difference between the pre and post attitudes, the group achieved a real progress.

4.12. Total Results of the Pre and Post Questionnaire:

The questionnaire contained fifteen questions. Each five questions designed to test a separate hypothesis. There are three hypotheses. Figure (4.12) shows the means of all the questions in the pre and post questionnaire.

Table (4.14) Total Results of the Pre and Post Questionnaire.

	Mean			T Pair Test	
Question	Pre	Post	Diff	T-value	P-Value

Q1	2.257	3.943	1.686	-13.154	0.000
Q2	2.343	4.000	1.657	-12.819	0.000
Q3	2.200	3.686	1.486	-10.747	0.000
Q4	2.400	4.086	1.686	-9.022	0.000
Q5	2.286	3.943	1.657	-14.343	0.000
Q6	2.743	4.171	1.429	-9.560	0.000
Q7	2.543	3.800	1.257	-7.829	0.000
Q8	2.629	4.029	1.400	-10.204	0.000
Q9	2.057	3.857	1.800	-12.782	0.000
Q10	2.257	3.686	1.429	-8.635	0.000
Q11	2.486	4.200	1.714	-11.351	0.000
Q12	2.514	3.886	1.371	-9.248	0.000
Q13	2.457	3.971	1.514	-8.862	0.000
Q14	2.629	4.057	1.429	-8.149	0.000
Q15	2.771	4.057	1.286	-8.216	0.000
Total	2.438	3.958	1.520	-29.519	0.000

Figure (4.13) Total Results of the Pre and Post Questionnaire.
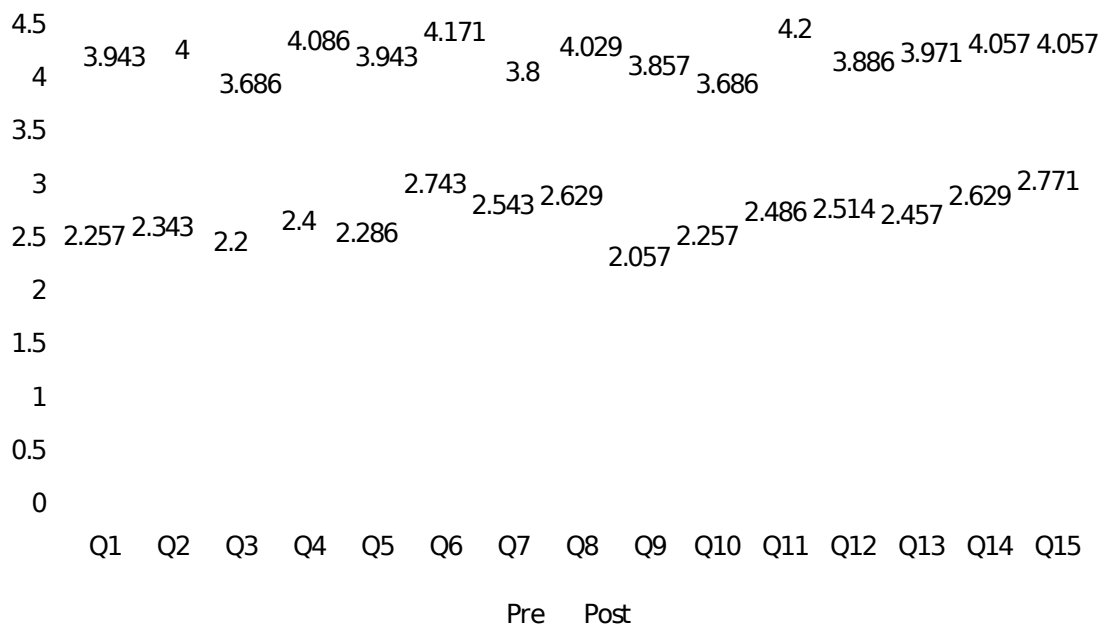
Examining the overall means of scores obtained by the subjects of the questionnaire in the three hypotheses: natural approach, CALL games and informal environment reveal significant differences between the pre/post attitudes. The computed t-value -29.519 is significant at the level 0.01. The total mean diff is 1.520 which results from the treatment

for the teachers to practice the techniques in a real teaching environment. The p-value shows that all questions developed a significant difference.

To conclude, data analysis was undertaken. This involved the true experiment: the experimental and control group. Both groups started the experiment from a similar educational and social background as analyzed by means and standard deviations (pretests), and then the experimental group undertook a treatment; while the control group had none. Finally, the two groups had post tests, using the post means of scores, mean diff, t-value and p-value to show the real progress in subjects' performance and to compare between the groups at different stages of performance.

The teachers' questionnaire analyzed to measure their attitudes towards three hypotheses by means of scores and mean differences in the pre and post stages. Moreover, data analysis was also made to help interpret why the subjects of the study develop their performance (6th graders) and attitudes (teachers) that proved to be significant in this study.

CHAPTER FIVE

SUMMARY, FINDINGS AND

RECOMMENDATIONS

CHAPTER FIVE
SUMMARY, FINDINGS AND RECOMMENDATIONS

5.0 Introduction:

The purpose of this study is to investigate the effect of a proposed program for vocabulary acquisition using the natural approach in an informal environment via CALL games as innovative teaching and learning strategies on developing students' vocabulary acquisition and evaluating the role these strategies' may play in improving teachers' attitudes toward the natural approach, CALL games and informal environment. The purpose of this final chapter is to discuss the results of the implementation of the program as well as to draw conclusions and to proposed recommendation for the implementations of the findings and for further research.

5.1 Summary:

The research procedure steps can be summarized into the following:

a- A true Experiment was done to grade six. A pretest was addressed to the subjects of both groups (Experimental and Control) to assess their academic level in English vocabulary. Pre means of scores gained through a pretest.

b- A treatment was done according to the proposed teaching and learning program to the Experimental group.

c- The Control group went through the same lessons but in a traditional teaching method and in formal class room environment (no treatment).

d- A posttest was delivered to get the scores of the Experimental as well as the Control group. p value was applied to calculate level of significance between the two groups.

e- Teachers' pre-questionnaire with fifteen-item list was addressed to the subjects of the study to investigate their attitudes towards the natural approach, CALL vocabulary games and informal environment.

f- A series of workshops was held for English teachers to identify the natural approach in an informal environment for vocabulary acquisition via CALL games.

g- To measure the effectiveness of the training session for developing English teachers' attitudes, a post means of scores, gained through the same questionnaire, were calculated and tabulated. A p- value was applied to calculate level of significance between the pre/post questionnaires.

The layout of the research report:

This research report falls into five chapters and appendixes.

Chapter One: Introduction:

The first chapter introduces background information of dimension of research problem, the procedure and instrumentation for conducting research and significance of the study.

Chapter Two: Theoretical Framework and Literature Review:

In this chapter an attempt was made to identify the different issues which could be taken into consideration in designing a natural approach for the purpose of this study. The five hypotheses are reviewed. These include: the acquisition- Learning hypothesis, the natural order hypothesis, the monitor hypothesis, the input hypothesis and the effective filter hypothesis. Second, computer assisted language learning (CALL), the history of computers in education, the relationship between CALL and vocabulary, using computers as a tutor and its applications, a rationale for using CALL and its effects in the classroom and its advantages and disadvantages. Finally, informal environment and its effects in

vocabulary acquisition and the relationship of a good CALL vocabulary games and a funny enjoyable and informal classroom.

Chapter Three: Methodology

In this chapter the researcher describes how the program is formulated. First, a true experiment conducted by taking 35 of grade six (experimental group) and does something special to them (treatment), while measuring their progress. Then compare their results with the data obtained from 35 students (Control group) that is similar in every respects to the experimental group expect for the fact that they didn't receive the special treatment. There is discrepancy in the results of the two groups and these can be attributed to the only differences between them, the treatment variable. The formulated questionnaire comprises three stages or steps: A pre questionnaire, a training session and a post questionnaire.

Chapter Four: Data Analysis:

To study the effectiveness of the proposed programme on the grade six, a pre/post treatment was analyzed and a pre/ posttest means of scores were calculated and tabulated. A pre/ post questionnaire means of scores were analyzed. To reveal significant difference or otherwise in post means of scores a p-value was used.

Chapter Five: Summary, Findings and Recommendations:

The fifth and the last chapter concludes the research report providing summary and discussion of the research data, thereby displaying the findings of the study, recommendations and suggestions for further TEFL research, mainly, in vocabulary acquisition.

5.2 Findings:

The findings of the study indicated that there were statistically significant differences between the experimental group and the control group. The mean score of the students of the experimental on the posttest

was (33.77) which are higher than mean score of the control group (19.88).

T-test showed significant differences (a= 0.05) between the mean score of the students of the experimental group and the mean score of the control group in favor of the experimental group.

The relatively high mean score of the experimental group was likely due to the effect of the teaching students according to the proposed vocabulary program. Utilizing CALL games and playing competition might contribute a lot to arousing students' interests, activating their background knowledge, and providing them with vocabulary items. Thus, activating the vocabulary with pictures and sounds in gaming style has probably enhanced the quality and quantity of the students' vocabulary. Besides, the researcher speculates that the steps implemented while teaching vocabulary according to the proposed program were simple and less complicated. The participating teachers who got involved in teaching the experimental group assured this point saying that most of the job was done by students themselves, while teachers played the role of guides and supervisors. Thus, the superior performance of the experimental group is logically justified and expected.

5.3 Discussion:

The results obtained from this study point to two main aspects. First, the pre and the post treatment result from the students are discussed. Second, the results of the teachers' questionnaire pre and post with its three hypotheses (natural approach, games and informal environment) are also discussed with more investigation.

5.3.1 Experiment:

Comparison of the pre-post tests of the experimental and control group (see table 6 & 7) shows that students during the treatment were more interactive, motivated and improve their ability in memorizing and understanding the lesson.

The results of the pre-treatment data show that the traditional teaching and learning method in grade six were not likely to improve or develop vocabulary. On the other hand, the positive aspects of the post-test showed a great improvement.

The findings of the two independent t-tests rejected the null hypothesis. The reason was that the researcher found a high enough t-value to make sure that such a large difference was not due to change. The researcher set his acceptance level at 05, and attempted to reject the null hypothesis (with the critical value for t when the sample size was 35 and he had two groups).The t-value was enough above t-critical and the null hypothesis was rejected. The two groups have scored differently on the post test of vocabulary. The difference was statistically significance and the findings were support for the claim that using word games promotes vocabulary acquisition.

The statistical procedure followed in this study can be summarized in the following three phases:

5.3.1.1 Phase One:

Control Group Pretest Questions

Experimental Group Pretest Questions

Comparison between Control Group and Experimental Group Pretests

The purpose behind such analysis was to see if the results obtained from the two groups (Control and Experimental) were the same or not. The analysis demonstrated that the difference was not significant. The reason

was the fact that the p-value (0.192) obtained was less than (0.05), and therefore the null hypothesis (that there is no difference between the scores obtained from the pre-test vocabulary test in the control group and the same scores in the experimental group) could not be rejected. The reason could be that both groups had presumably the same (or nearly the same) level of knowledge in vocabulary.

5.3.1.2 Phase Two:

Control Group Posttest Questions

Experimental Group Posttest Questions

Comparison between Control Group and Experimental Group Posttests

The independent t-test between the two posttests showed a considerable difference. The t- value (-20.657) was above t-critical (0.05) and the p-value obtained was (0.000) and the mean difference was (30.94), therefore, the null hypothesis (that there is no difference between the scores obtained from the post-test vocabulary test in the control group and the same scores in the experimental group) was rejected. Since all the variables were under control and the two groups were treated under equal circumstance (except for the experimental group, which was receiving the treatment), the reason could be traced in the effect of using the natural approach and CALL games in an informal environment.

5.3.1.3 Phase Three:

Control Group: Comparison between Pre/ Posttest Questions

Experimental Group: Comparison between Pre/ Posttest Questions

The mean difference between the means of control group pretest and posttest showed a little difference, because there was been vocabulary acquisition, in a traditional teaching method. It showed difference, but it was nothing compared with a remarkable significant difference in the experimental group pretest and posttest.

The independent t-test between the experimental pretest and posttest showed a considerable difference. The t-value (-26.553) obtained was above the t-critical (0.05), and therefore the null hypothesis (that there is no difference between the scores obtained from the experimental group pretest and the same scores in the posttest) was rejected. Since all the grade six were under control and equal circumstances (except for the treatment) the reason could traced to the natural approach and CALL games on the development of vocabulary acquisition.

To interpret these results, some important points should be mentioned. As reported by the teachers, CALL games and the natural approach in an informal environment encouraged grade six a lot to get involved in vocabulary acquisition through showing pictures and game's competition. Students played the games which were approved by teachers and supervisors as mostly related to the syllabus of SPINE (1), background knowledge and their interests. Teaching according to the proposed method was mostly student-centered instruction. Most of the job was done by the students themselves. The teacher was merely a facilitator and supervisor. The natural approach in particular was the most distinguished teaching and learning method since the vocabulary words of each lesson from the SPINE 1 were displayed graphically (pictures) in front of the students while they were playing games. Therefore, the researcher, who had a close look at the students' vocabulary acquisition during the different stages of the experiment, noticed a clear and real progress in the quality and quantity of their acquisition and production. Consequently, the researcher would attribute the higher mean of scores of the experimental group on the posttest to the implementation of the proposed teaching and learning program.

In conclusion, the findings of this study provide clear evidence for the effectiveness of the natural approach as a teaching method mixed with

the CALL vocabulary games in an informal, interesting and competitive environment in developing vocabulary acquisition.

5.3.2 Questionnaire:

This part presented the findings of the analysis of data obtained from the questionnaire. These data were related to the teachers' attitudes towards the natural approach and CALL vocabulary games in an informal environment.

Teachers seemed to have positive attitudes towards three points: the natural approach, informal environment and CALL games in improving vocabulary acquisition. On the other hand, not all teachers feel comfortable and confident that they can integrate CALL vocabulary games resources into their teaching practices. The main reason for this seems to be lack of knowledge about and training in how to integrate these resources into instruction. Indeed, analysis of t-test results findings revealed that training has an impact on attitude change towards and perception of the natural approach and CALL games in vocabulary acquisition.

Although the conference has been reported to be useful by most participants, a few possible problems were also observed. One problem is to do with the content of the course. It's been suggested that the course seminars should be more supportive and guiding in terms of how to better integrate the proposed program teachers learned about into classroom instruction practices. A second problem, knowledge and training alone may not be enough for the use of CALL vocabulary games in language instruction. A better integration of CALL games resources into the curriculum may help in eliminating such factors as time that prevent teachers from using these resources in supplementing their instruction.

The findings will be presented and discussed under three headings in relation to the major themes emerging from the study. These headings are: teachers' attitudes towards the natural approach, CALL games and informal environment.

The first section below presents findings that sought to answer the first research question:" What are teachers' attitudes towards the natural approach and its techniques in shaping the teaching and learning classroom process.

Section two of the questionnaire was designed to investigate teachers' attitudes towards computers and the use of vocabulary games in vocabulary acquisition. Most teachers reported generally positive attitudes towards computers and stated that playing games can help students acquire the vocabulary without actually realizing that. They also reported that the quality of interactivity in computers make them superior to the traditional means of instruction. The results gathered are the ones that may be naturally expected in an age in which people are surrounded by advanced computer technology resources. Computer technology has long entered into people's daily lives in almost every field, including educational system and schools.

One the other hand, when it comes to teachers' opinions about and attitudes towards use of computers and CALL games in question 6 & 7 in vocabulary acquisition, responses vary. Although many teachers stated they perceive computers as a pedagogical tools and reported positive attitudes towards question (8) Computer actively involves the students in learning and interaction throughout the lesson, a considerably high number of teachers remain undecided whether they would use these for teaching purposes. Moreover, many teachers are unsure whether they can take risks in teaching with computers although they think that computers can be a good supplement to support teaching and vocabulary

acquisition. It seems that the English teachers perceive computer resources as a support tool rather than something they can use for direct instruction.

Overall, these findings may imply that the English teachers are generally positive about computer and CALL games in vocabulary acquisition and are willing to integrate the proposed program into their teaching. Yet, they need to be more informed about computer assisted language learning resources and go through further training to consider vocabulary games integration.

The questionnaire results revealed statistically significant differences between teachers' attitudes before (pre questionnaire) and after (post questionnaire) who have taken training session. Their interests led them to undergo training sessions. Some teachers volunteered for training based on earlier positive attitudes towards computer technology use, some participants stated that they already had positive attitudes towards in computers and vocabulary games in language instruction, and so they were interested in attending such training sessions. For these teachers, the aim was to equip themselves with more knowledge of how to incorporate new teaching program into their teaching; while others reported developing positive attitudes as a result of participating in the training sessions.

One final finding gathered from the pre questionnaire suggests that teachers without training seem to be unsure whether they are the type who can do well with computer and vocabulary games and whether they are prepared to integrate the proposed program in their teaching. Lack of knowledge might lead teachers to feel anxious about computers. It also results in a low sense of confidence in integration of CALL games in spontaneous vocabulary acquisition. Which prevent them from using computer assisted language learning. Teachers who have undergone

training, however, seem to have the confidence that they are prepared for using and developing positive attitudes because they have learned how to employ CALL games to supplement their teaching.

Section three of the questionnaire was designed to investigate teachers' attitudes towards an informal environment. The concept of informal education is contested although many would use the following terms in its description: education "owned" and "directed" by the learner; independent study; non-formally timetabled education; education using non-institutional technologies; and engaging learning that takes place away from traditional, educational contexts. The interface between traditional and non-traditional contexts or spaces has come more sharply into focus through the use of emergent vocabulary games and language learning technologies, which emphasize learning, linked to ownership, context, personalization and differentiated tasks. Critically, these tasks and spaces have different rules from traditional academic contexts, even if they are less structured and more open. With users operating in multiple spaces, there are widespread affordances for personal validation, the formation of new allegiances, freeing access to varied resources, and achieving self-reliance through critical action. Moreover, these pictures and games' contexts are at once virtual and real.

The development of added value occurs through self-education. Increasingly, it is the critical ability that an individual learner (grade six) develops in fusing their formal and informal learning, which levers educational gains.

Teachers' performance in this section (informal environment) as revealed by pre-treatment data means of scores was unsatisfactory. On the other hand, post-treatment data means of scores revealed significant improvement.

The lowest pre-treatment data means of scores are that of "Games playing functions as a site for an informal learning." . It was found that simply providing teachers with the CALL games in informal classroom did not result in its effective usage in language learning. Teachers need to be properly guided not only technologically, but also methodologically. Some teachers may have a lack of necessary knowledge and experience to solve problems in the process of adopting new technologies. As a consequence, creating an easily informal environment is not trustful, because they used to teach SPINE 1 in formal environment. Instructor guidance on how the informal environment can be better utilized for language learning in terms of activity design and collaboration is also essential, since teachers may not be aware of the technological affordances of the new technology, and how they could be combined to foster competence.

A further finding is that teachers should be provided with more opportunities to take responsibility for their informal learning using CALL games in the classroom. As they take control of their learning experiences, teachers usually develop their own teaching strategies. Funny games, competition and self-chosen learning topics are more involving than a teacher's spelling tasks, because students usually choose things that interest themselves. These activities can also involve peers for collaborative learning. Learner collaboration has been found to contribute to students' sense of ownership and autonomy, because they may feel that their contributions are valued and they also value those of the other group members, the result of which is more contributions and more learning. Learner collaboration was made more prevalent with the help of vocabulary games using computer technology in the classroom.

Finally, the study found that teachers' attitudes towards the usability, effectiveness, and satisfaction of informal environment were quite

positive. This is a good sign for language teachers. It indicates that language learners, especially those who grew up as the so-called "digital natives" are willing to play, compete and acquire vocabulary in non anxious informal environment, opening a whole new world of possibilities for language teaching and vocabulary acquisition.

5.4 Recommendations:

The results of this study suggest that simply providing CALL games does not guarantee their use in language instruction. Therefore, it is necessary to convince teachers of the usefulness and benefits of these vocabulary games in improving spontaneous vocabulary acquisition. This suggests the need for effective guidance, support and training for teachers in integrating computer assisted language learning into vocabulary instruction through more hands-on and directly practical experience. The results gathered were interpreted to mean that most teachers at the basic schools seem to strongly believe in the usefulness of the natural approach, games and informal classroom environment in improving vocabulary instruction. The most prominent factors that influence use of CALL games identified in this study are 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 vocabulary instruction, as well as how such CALL games can be effectively integrated into the curriculum. In other words, findings suggest the need for ongoing training and assistance in helping teachers to better employ CALL games in teaching 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 technology using or not using computer technology and their beliefs about the value of technology in teaching and learning practices. Internal barriers to computer technology use may persist even when external barriers are removed. While addressing barriers at each level of technology integration, certain strategies should be taken into account. First of all, while introducing CALL to teachers, their pedagogical potential should be emphasized and guidance and assistance should be provided on ways of integrating these resources into instruction. Second, those who plan to integrate CALL games need to provide the rational and grounding for better integration into language instruction and learning. Furthermore, during the integration process, 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 of vocabulary instruction and possible problems with each other.

The researcher considers students' deficiency in vocabulary acquisition as an acute and serious problem. Therefore, in the light of the findings of this study, he believes that the following recommendations are of direct relevance and help to the Ministry of Education, teachers, supervisors and researchers.

The Ministry of Education is called on to hold regular special meetings and seminars so as to discuss the vocabulary acquisition problems in the basic schools (SPINE series) and to provide teachers with the most innovative vocabulary teaching method. In addition, since teachers face difficulties in performing vocabulary lessons, supervisors of English language are called on to hold workshops through which they train teachers on how to implement a successful vocabulary lesson.

The Ministry of Education is also called on to modify the steps devised to implement the vocabulary in SPINE 1 to be fused with games and computer technology.

Teachers are advised to place more emphasis on the CALL games which, if employed skillfully, will motivate students and activate their prior knowledge utilizing the natural approach in particular.

Teachers are also advised not to limit their vocabulary instruction to drilling, repetition, correct spelling and physical punishment.

It is recommended that teachers allow longer time for their students to play vocabulary games in the classroom so as to get accustomed to the pictures and the words to be skillful as competent players, taking into consideration the importance of immediate feedback.

Researchers are called on to investigate the effect of different vocabulary teaching and learning strategies, other than the natural approach, informal environment and CALL games.

Researchers are called on to conduct similar studies on other levels of school learners. For instance, they can try another study on high secondary classes or even at university level.

Conferencing between the supervisor and teacher should occur before the lesson is taught to focus on teacher's intent, goals, procedures, expected learners' behavior in an informal environment and teaching techniques in a particular lesson that is to be observed, and after the lesson to analyze the data collected for feedback.

5.5 Suggestions for Further Research:

This study examined how the natural approach helps teachers to perceive the incorporation and use of computer assisted language learning (CALL), in vocabulary acquisition via games. The study specifically investigated teachers' attitudes towards the natural approach, vocabulary games and an informal environment. However, classroom experiment to

understand whether grade six really learns SPINE 1 vocabulary via games. Thus, further research using CALL games, might be carried out to understand whether, to what extent, and English teachers actually apply CALL games and the natural approach in their vocabulary instruction practices. Experiments may also help reveal the effectiveness of CALL vocabulary games and informal environment in supplementing and improving teaching and learning. Also, case studies might be conducted to understand how teachers plan the integration of these resources into their teaching. A topic for additional research may be an investigation of the correlation between the teachers' use of CALL games and student achievement.

In order to investigate the perceptions of other teachers working at other universities and their attitudes towards the use of CALL games in vocabulary acquisition, future studies could be conducted, perhaps in the form of a wide-scale survey.

Finally, students' perceptions of the use and effectiveness of the natural approach, games and informal environment in vocabulary acquisition, and their approaches to using these resources could be investigated by future studies.

5.6 Conclusion:

The findings of this study showed that learners were largely acquiring vocabulary via games in their classroom even though these resources weren't available in their school. Despite generally positive attitudes, most of the teachers reported not using the vocabulary games. To understand how to achieve better integration, we need to study teachers and what makes them use computer vocabulary games, and we need to study computer assisted language learning and what makes teachers want to or need to use them.

There are also practical implications to this study. Self-efficacy contributes to a teacher's use or non-use of vocabulary games. After a preliminary identification of teachers' level of self-competence and innovativeness, staff development and training programs could be provided. The innovative nature of technology, as it continues to change and expand, will require teachers to adapt and change the way they approach vocabulary acquisition.

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APPENDIXES

APPENDIX (A)

A PRETEST GRADE SIX

Sudan University of Science and Technology

College of Education

Pretest

Grade Six Number **of pupils**: (70) **School**: Sinnar(Sugar Co.)

QUESTION (1): Match (A) with (B) in (C)

A	B	C
1- bread	a-job	1-
2- policeman	b-food	2-
3-cow	c- animal	3-
4-north	d-direction	4-
5-four	e-timetable	5-
6-school	f-number	6-
7-football	g-week	7-
8-7 days	h-play	8-
9-father	i-colour	9-
10-red	j-family	10-

QUESTION (2): Give the opposite:

Word	Opposite
1- begin	last
2- like	end
3-first	dislike
4-old	unhappy
5-happy	near
6-far	young
7-long	up
8-down	short
9-East	West
10-big	small

QUESTION (3): Complete the table with the following words:

(Giraffe, lion, camel, dog, cat, elephant, goat, monkey)

Big Animals	Small Animals
1- lion	1- monkey
2-	2-
3-	3-
4-	4-

QUESTION (4): Write the missing letter:

1- This is a big l…on.

2- The bag on the left is bl…ck.

3- I watch T.V in the evening.

4- The riv…r is long.

QUESTION (5): Underline the odd word:

1/ house   kitchen   classroom   hall

2/ room   lorry   bed   cupboard

3/ read   drink   coffee   tea

4/ eight   five   four   six

5/ office   classroom   school   house

6/ cup   apple   date   banana

7/ Friday   Monday   Sunday   school

8/ Arabic   week   English   Math

9/ period   spoon   knife   kitchen

10/ bread   fish   egg   coffee

APPENDIX (B)

A POSTTEST GRADE SIX

Sudan University of Science and Technology

College of Education

Post-test

Class: sixth   **Number of pupils**: (70)   **School**: Sinnar(Sugar Co.)

الاسم:..

.

QUESTION (1): Read

Mona is a pupil. She is 9 years old. She lives in Khartoum. Ahmed is a policeman. He is Mona's father. He has got a house and a car. Mona has got one brother. His name is Mostafa. He is a doctor.

Make ☑ or [×**]**

1/ Mona is 10 years old.   (   )

2/ Mona lives in Omdurman.   (   )

3/ Mona has got one brother.   (   )

4/ Ahmed is a policeman.   (   )

5/ Ahmed has got a bus.   (   )

6/ Mustafa is a doctor.   (   )

QUESTION (2): Underline The Correct Word:

1/ (an - a) orange.

2/ I (go – goes) to school.

3/ (a – an) mango.

4/ There (is – are) one book.

5/ (He – She) is aboy.

QUESTION (3): Underline the odd word:

1/ kitchen   dining room   teacher   hall

2/ big   desk   happy   old

3/ banana   orange   mango   coffee

4/ salad   tea   mil   water

5/ policeman   car   nurse   doctor

QUESTION (4): Re-order to make sentences:

1/ He – apples – likes …………………………………………………….

2/ She – drinking – is …………………………………………………..

3/ go – I – home   …………………………………………………

QUESTION (5): Complete the table:

elephant / lion / cat / dog / giraffe / monkey

Small Animals	Big Animals
1/	1/
2/	2/
3/	3/

QUESTION (6): Choose the correct letter to make right spelling:

1/ b…droom (o , e , a). 2/ kitche….(n, m , h). 3/ h…ll (e , a , i)

4/ l…ve (a , i , m). 5/ ba…..room (s , th , c)

QUESTION (7): Match (A) with (B):

(A)		(B)
1/ watch		a/ water
2/ drink		b/ T.V
3/ read		c/ bed
4/ play		d/ a book
5/ sleep		e/ football

APPENDIX (C)

LESSON PLANS (SPINE 1)

SPINE 1	6th class	Unit 3	Lesson 1 My home	Page 49
Vocabulary	Live/kitchen/sitting room/hall/living room/house/bathroom/bedroom/dining room			
Visual Aids	Oxford Picture Dictionary Interactive/BBC learning video/A projector			
Warm up	Introducing the vocabulary to the students. I tried to elicit what the students know about the names of objects in their own homes.			
Presentation	Students are introduced to the above vocabulary through OPDI. The teacher will introduce the nine words as well as extra words to enrich their vocabulary.			
Practice	After the words been drilled and the meaning is clear. Students move on to practice the words using three games. Count down: it gives the learner fifty minutes to click at the right words. Flash cards maker: the learner clicks at the picture of the correct words. Name it: the learner has 400 points, it starts from 100-400. After answering the question, it'll give you 100 points for each question.			
Production	At the end of the lesson, learners should be able to name and identify the objects at home. Post test at the end of the session.			

SPINE 1	6th class	Unit 3	Lesson 2 Karrar's room	Page 51
Vocabulary	Bed/clock/picture/radio/cupboard			
Visual Aids	Oxford Picture Dictionary Interactive/A projector			
Warm up	.Tell Students to say the words from the previous lesson .Help them to remember objects from their own private rooms			
Presentation	Make students feel free to share words and ask questions like (what is this in English?). Present the five words above using a projector (a picture + a word). The content should be comprehensible to all learners.			
Practice	Students feel free to practice saying the words. Listen and read the words. Play the games for fun and consequently strengthen their vocabulary acquisition.			
Production	At the end of the lesson learners should be able to understand the words thoroughly. Exercise and homework. Posttest at the end of the session.			

SPINE 1	6th class	Unit 3	Lesson 3 At home	Page 52
Vocabulary	?Read/write/play/TV/drink/watch/comb/what is Ali doing			
Visual Aids	Oxford Picture Dictionary Interactive/BBC learning video/A projector			
Warm up	?What are you doing			
Presentation	Introduce the verbs using the pictures of each one. Using real life situation: What are you doing now?. Play the video which showing .persons doing the verbs above			
Practice	Students play games to practice. Pair work: ask each other question. .Drilling the words			
Production	At the end of the lesson students should be able to use these verbs contextually and get high scores at games. Exercises at the end of the .lesson			

SPINE 1	6th class	Unit 3	Lesson 4	Page 54
Vocabulary	.Parts of the body: arms/legs/fingers/eyes/ears/mouth/nose/feet/hands/head/knees			
Visual Aids	Using Oxford Picture Dictionary Interactive. My own parts of the body. Students' .parts of the body			
Warm up	.Identify my parts to the class			
Presentation	Identify my parts of the body to the whole class. Using a projector to show a body .and name its different parts in English			
Practice	Students practice naming their parts of the body in pair work. Play the games to .strengthen their four skills			
Production	At the end of the lesson, teacher touch his eyes for example and students should .be able to name it			

SPINE 1	6th class	Unit 3	Lesson 5 Telling the time	Page 56
Vocabulary	.One/two/three/four/five/six/seven/eight/nine/ten/eleven/twelve			
Visual Aids	A video from (English for you) series. A lesson from (Talk now) .program. Oxford Picture Dictionary Interactive			
Warm up	?What is the time now			
Presentation	Using the projector to show a clock that present the time in a simple and attractive way. A video to present time expressions. OPDI shows a .real clock with illustrated times			
Practice	Drilling the time. Pair work: Student (A) ask a question and student (B) tell the time correctly. Group work: To divide the class to two .groups (A&B) and start vocabulary competition via games			
Production	Students should be able to score high in the test at the end of the .lesson			

SPINE 1	6th class	Unit 3	Lesson 6 Everyday activities	Page 58
Vocabulary	Get up/has breakfast/end/go to bed/begin/go to/do/homework/morning			
Visual Aids	A video from (English for you). Oxford Picture Dictionary Interactive. A projector.			
Warm up	Talk about every day activities.			
Presentation	Introduce the words. Let the students talk about the activities from the pictures. Playing the above video to present people and their daily activities.			
Practice	Drilling the words via OPDI. Telling the time of the activities. Play the games in OPDI to strengthen the four skills.			
Production	Students should be able ask and answer questions about activities (pair work). Strengthen their ability to play the vocabulary games successfully.			

SPINE 1	6th class	Unit 3	Lesson 7 Every day (activities (2	Page 59
Vocabulary	Previous lesson vocabulary. Begin/end.			
Visual Aids	Oxford Picture Dictionary Interactive. A video from (English for you) .series			
Warm up	.Revision of the previous lesson			
Presentation	Present "Lado" daily life. Use time expression. Present questions and .typical answers			
Practice	Students drill the words. Put the students in real life situations to .practice different activities. Play games			
Production	After the lesson comprehensibly practiced, students should be able talk .about their own daily activities. Play the games and win			

SPINE 1	6th class	Unit 3	Lesson 8/9 Kamal's School	Page 61
Vocabulary	Flagpole/playground/office/middle/classroom/big/pupil/blackboard/beside .			
Visual Aids	.Oxford Picture Dictionary Interactive. A projector. Games			
Warm up	.Ask the students about the classroom objects			
Presentation	Use the classroom objects (from real life situation) to explain vocabulary. And OPDI to present pictures for every word. Present the difference .(…between (there is/there are			
Practice	Students drill the above words. Practice answering the questions from (1- .6). Play relevant games			
Production	At the end of the lesson, students should be very competent in games. They should write the answers to the six questions and match the words .with the pictures			

SPINE 1	6th class	Unit 3	Lesson 10/11 likes and dislikes	Page 65
Vocabulary	.Like/apple/date/banana/mango/orange			
Visual Aids	.Oxford Picture Dictionary Interactive. A projector			
Warm up	(?Ask students about the (what kind of fruit do you like			
Presentation	Present vocabulary above using OPDI. Present questions like: Do you …like…..?. Affirmative: I like...Negative: I don't like			
Practice	Students practice playing the games in two groups. Practice to work in .pairs: Do you like…yes, I do/ No, I don't			
Production	At the end of the lesson, students should be able to use the names of fruits contextually. And answering all the ten questions in the test .section in the OPDI			

SPINE 1	6th class	Unit 3	Lesson 12 What do they & want Review	Page 68
Vocabulary	(Revision of the previous vocabulary lesson (1-11			
Visual Aids	A video from (English for you) series. Oxford Picture Dictionary .Interactive			
Warm up	.Ask students questions in order to review the previous lessons			
Presentation	Present vocabulary games in OPDI. Ask students different questions .beyond their current level to elicit answers			
Practice	Give the students a space to do a pair work in an informal classroom environment. Make real life situations to practice. Listen to the words, then listen and check, finally listen and say the words. Students play .games and compete in pairs and groups			
Production	At the end of the lesson, students should master the vocabulary of unit .three and develop a skillful language competence in games			

SPINE 1	6th class	Unit 4	Lesson 3 The school timetable	Page 75
Vocabulary	Time table/Arabic/Science/Physical Education/Geography//period/English/Math/Arts/Religion/History			
Visual Aids	Oxford Picture Dictionary Interactive. A video about days of the week			
Warm up	Use the time table of the sixth class to introduce the vocabulary.			
Presentation	Present all the subjects. Write the words in the board. Play the video for more comprehensible input. Use the questions like (What's the period now/the next period…):			
Practice	Students practice drilling the words. Listen and repeat. Play CALL games. Work in groups (A) and (B).			
Production	At the end of the lesson, students should be able to acquire the vocabulary and develop an ability to use it contextually.			

SPINE 1	6th class	Unit 4	Lesson 1/2	Page 72
Vocabulary	Days of the week			
Visual Aids	A projector/ video/ CALL games/Oxford Picture Dictionary Interactive.			
Warm up	What is the day today?			
Presentation	Present the seven days, 5 working days and the weekend. Using pictures from OPDI. Play a video to present the days. Introduce: 1st, 2nd …			
Practice	Students practice drilling the words. Play the games to practice the words.			
Production	At the end of the lesson students should be able to answer questions about the time and days of the week.			

SPINE 1	6th class	Unit 4	Lesson 4 objects	Page 77
Vocabulary	.A spoon/a cup/ a plate/a glass/a knife/a bowl/a tray/a jug			
Visual Aids	.Oxford Picture Dictionary Interactive. A projector			
Warm up	.Revision of the previous lesson and kitchen objects			
Presentation	Present the vocabulary above using the OPDI. Write the words in the .board			
Practice	Students practice saying the words. They play vocabulary games for .more practice			
Production	At the end of the lesson, students should be able to identify the objects .clearly			

SPINE 1	6th class	Unit 4	Lesson 5/6 Food and drinks	Page 78
Vocabulary	Bread/eggs/cheese/groundnuts/fish/tea/coffee/jam/sugar/water/milk/salt .			
Visual Aids	A video from (English for you) series. Oxford Picture Dictionary .Interactive			
Warm up	.Revision of the lesson "like and dislike" unit 3 lesson 11			
Presentation	Present the words in the screen using the projector from OPDI. Using the video "I am hungry" to explain the vocabulary in a comprehensible .way			
Practice	Students drill the words. Pair work: student (A): What is Kamal eating? Student (B): answer. Vocabulary competition between group (A) and .(group (B			
Production	At the end of the lesson students acquire the above vocabulary about food and drinks and develop an ability to express their likes and .dislikes			

SPINE 1	6th class	Unit 4	Lesson 7 Kamal's everyday activities	Page 80
Vocabulary	.In the morning/afternoon/evening			
Visual Aids	Oxford Picture Dictionary Interactive/ A video from (English for you)/ .A projector			
Warm up	.Students talk about their everyday activities			
Presentation	Introduce the vocabulary using OPDI and a video through a projector. The teacher talks about his everyday activities. Use the textbook to .show the different activities			
Practice	Students express their daily activities from real life situations. Play the .games. Ask and answer questions in pair work			
Production	In an informal environment. Students feel free to talk about their .everyday activities			

SPINE 1	6th class	Unit 4	Lesson 8 Jobs	Page 82
Vocabulary	A teacher/a doctor/a farmer/a nurse/a driver/a milkman/a pupil/a .policeman			
Visual Aids	Oxford Picture Dictionary Interactive. A projector. A video. CALL .games			
Warm up	?What is your father's job			
Presentation	Introduce the words using pictures from the textbook. Write the words .in the board. Use OPDI to present the names of the jobs in the screen			
Practice	Students drill the words. Play vocabulary games. Students work in ."?pairs, ask each other about "what's your father's job			
Production	At the end of the lesson, students acquire the names of jobs. They .develop an ability to talk about people and jobs			

Table 1

SPINE 1	6th class	Unit 4	Lesson 11/12 At the zoo Description	Page 86
Vocabulary	Tall/happy/low/old/unhappy/long/young/high/yellow/black/white/brown/small/right Left/bag/short.			
Visual Aids	A video. Oxford Picture Interactive Dictionary. A projector.			
Warm up	Revision of the previous lesson. Make comparisons between animals in order to explain the meaning of these adjectives.			
Presentation	Write the words in the board. Introduce the words using pictures. Present a lesson using a video to be more comprehensible.			
Practice	Students drill the adjectives. They act the role of being happy/old/unhappy/young…			
Production	At the end of the lesson, students should be able to write in order…			

Table 2

SPINE 1	6th class	Unit 4	Lesson 9/10 Hassan El Naeem's Farm	Page 84
Vocabulary	Farm/donkey/horse/dog/cow/camel/lion/tiger/animal/zoo/elephant/old/monkey/giraffe.			
Visual Aids	Oxford Picture Dictionary Interactive/a projector/ a video.			
Warm up	Ask students about the names of animals they already know.			
Presentation	Present the names of animals with pictures. Write the words in the board. Use a video to present the lesson. First, introduce big animals, then small ones.			
Practice	Students play the game. Drills should be written on cards. Practice contextual reading. What are these words…What is that…This is…These are.			
Production	At the end of the lesson, students should be able to name animals.			

SPINE 1	6th class	Unit 5	Lesson 1/2 Family tree Kamal's family	Page 92
Vocabulary	.Father/mother/grandparents/uncle/aunt/glasses/board			
Visual Aids	Oxford Picture Dictionary Interactive/a video about a family/CALL .games			
Warm up	.Revision of family tree			
Presentation	Use Oxford Picture Dictionary Interactive to present the words above. Use a video in the class to talk about real family members. Write the .words on the board. Present the words by drawing pictures			
Practice	Students practice saying the words (drilling). Play the vocabulary games in pairs and in groups. Take roles in dramatizing the family members in an informal environment. Use different words to .comprehend the words thoroughly			
Production	At the end of the lesson, students can say and use the above vocabulary correctly. Exercises. High scores in playing vocabulary .games			

SPINE 1	6th class	Unit 5	Lesson 5 Directions	Page 99
Vocabulary	North/West/East/South/point/where			
Visual Aids	Oxford Picture Dictionary Interactive/BBC learning video/A projector			
Warm up	?Where is Sinkat ?Where is Sinnar			
Presentation	Present directions using video and real life situations. Use the .interrogative form to talk about directions			
Practice	.Students practice to point to the real directions			
Production	.At the end of the lesson students should understand directions			

SPINE 1	6th class	Unit 5	Lesson 3/4	Page 96
Vocabulary	.Look for/here/there/north/south/east/west/map			
Visual Aids	.Oxford Picture Dictionary Interactive. CALL games			
Warm up	?Where is Halfa			
Presentation	Write the words on the board. Use OPDI to present directions. Explain .directions by the locations of local cities in Sudan			
Practice	Ask and answer questions like (Where is Atabra?). Play games in pairs .and groups			
Production	At the end of the lesson students should be able to differentiate .between the directions clearly. Exercises at the end of the lesson			

SPINE 1	6th class	Unit 5	Lesson 6	Page 101
Vocabulary	Elephant/cow/monkey/camel/dog			
Visual Aids	Oxford Picture Dictionary Interactive/A projector			
Warm up	.Revision of animals			
Presentation	.Use a video to present animals ?Where is the cow			
Practice	Students play the vocabulary games in order to practice the above .words			
Production	At the end of the lesson students do exercises and a test in OPDI			

SPINE 1	6th class	Unit 5	Lesson 7 The Sun and the Moon	Page 103
Vocabulary	The sky/the sun/the moon/the sea/the river/a star/fire			
Visual Aids	Oxford Picture Dictionary Interactive/BBC learning video/A projector			
Warm up	.That is … this is…Point and say activity			
Presentation	.Present words above using OPDI ?…Look, listen and say. How many			
Practice	Practice to draw the pictures of the vocabulary. Play the games in .OPDI			
Production	At the end of the lesson, students should be able to play games in skillful way and answer the questions in the textbook and solve the .puzzle activity			

SPINE 1	6th class	Unit 5	Lesson 8/9	Page 105
Vocabulary	Town/bus station/post office/hospital/police station/railway station/mosque			
Visual Aids	Oxford Picture Dictionary Interactive/A learning video/A projector			
Warm up	Where is…? Questions about students'/A video			
Presentation	Present the vocabulary using OPDI and a video. Talk about the picture in the textbook. Ask students what can you see?			
Practice	Practice reading the conversation. Play OPDI games for more practice. Practice asking questions in pairs.			
Production	Students are able to choose the right word in textbook(exercise D vocabulary p,110) and copy the sentences in their exercise book.			

SPINE 1	6th class	Unit 5	Lesson 10 Men,women and children	Page 108
Vocabulary	A man/ a woman/ a child/ two men/women/children. This/that…these/those			
Visual Aids	Oxford Picture Dictionary Interactive/A learning video/A projector			
Warm up	Revision of the family lesson			
Presentation	Present the irregular plural noun: child-children. The difference between singular/plural. This is a man. That is a woman.			
Practice	Students practice these structures to differentiate between singular and plural.			
Production	At the end of the lesson, students should understand the above. They should score high in the test.			

APPENDIX (D)

TEACHERS' QUESTIONNAIRE

Sudan University of Science and Technology

College of Education

Teachers' Questionnaire

Dear Colleagues,

I am currently enrolled in the PhD Program at Sudan University of Science and Technology. The aim of my research study is to learn about teachers' general attitudestowards the natural approach, CALL vocabulary gamesand an informal environment in vocabulary acquisition. I am also investigating how much teachers know, and feel they need to know about vocabulary enhancementprogram and its possible classroom applications.

The findings of the study may contribute to the improvement of the vocabulary acquisition, thequality of materials, and the quality of educational technology courses and programs aiming to promote professional development. The results may be of benefit to you as teachers, to the administration, and ultimately to the students of the SPINE series.Your views will be valuable to this study. The information given will be used confidentially and merely for research.

Thank you very much for your co-operation

Dear Teacher, please tick ☑ the appropriate answer by each statement:

1/ It is better to devote class time primarily to providing input for vocabulary acquisition.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )
2/ The teacher speaks only the target language in the classroom.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

3/ The teacher corrects the students whenever it is appropriate and doesn't interfere with communication.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

4/ Students acquire language only when they are introduced to understand language that is a little beyond their current academic level.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

5/ Students with high motivation, self confidence and low anxiety level tend to do better in second language acquisition.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

6/ Many educational professionals think that with computers lies the solution to vocabulary acquisitions.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

7/ The quality of interactivity in computers (text, voice, graphics) make them superior to the traditional means of instruction.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

8/ Computer actively involves the students in learning and interaction throughout the lesson and reduces the instruction time.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

9/ Games can make students more interested in the learning material.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

10/ Playing games can help students acquire the vocabulary without actually realizing that.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

11/ Informal environment within the classroom is very effective in acquiring vocabulary.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

12/ Computer games in an informal environment are more successful in attracting interest and motivation from young learners than schools.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

13/ Games playing functions as a site for an informal learning.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

14/ A single context as an informal environment hardly gives enough information for the students to guess the full meaning of a word.
Strongly agree ( )   Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

15/ Most Sudanese students (6th grade) are still not able to understand what people say easily. The problem lies in the traditional teaching method.

Strongly agree ( ) Agree ( )   No opinion ( )
Disagree ( )   strongly disagree ( )

Thank you very much for your co-operation

APPENDIX (E)

TRAINING SESSION PLANNING SHEET

Training Session Planning Sheet

Session title:

Computer-Assisted Approach to Enhance Natural Informal Acquisition of Vocabulary

Target audience: English Teachers

Allotted time: 2 hrs

Rationale:

The existing learning possibilities opened up by the computer assisted language learning *(CALL)* are considered to enhance vocabulary learning. Thus an ***informal***natural learning setting is supposed to be incorporated with ***vocabulary games*** to maximize the learning process in the classroom.Krashen, rests on ***five hypotheses*** which make up his theoretical model of language learning. These are:

1) The acquisition- Learning hypothesis
2) The natural order hypothesis
3) The monitor hypothesis
4) The input hypothesis
5) The effective filter hypothesis

Objectives:

Overall objective:

•To describe the process of teaching English vocabulary (fully committed to the techniques of the Natural Approach) by using games (as one of CALL tasks) to the sixth graders.

•To find out the results of using, memorizing, recalling vocabulary and how good they can use it contextually and grammatically.

Specific objectives:

•To be able to integrate the vocabulary games in SPINE1.

• To experience the informal and visual environment, and to have the ability to manage the classroom in a funny, competitive way.

• Teachers develop positive attitudes towards the natural approach, CALL games and Informal environment.

Activities:

• Draw from teachers what concerns them most about vocabulary acquisition.

•Show how this session helps teachers to develop a positive attitudes towards the proposed teaching and learning program .

• Present key points of rationale and discuss each one.

• Show a lesson from SPINE 1 using overhead projector as a visual aids and practicing teaching vocabulary through games.

• Using different games in an informal classroom setting (group and pair tasks) to enhance competition in a funny and enjoyable way.

• After several examples, time the exercise.

• Give teachers opportunities to practice teaching lessons from SPINE1 using the natural approach integrated with CALL games to make vocabulary acquisition more effective.

• In simulated classroom, create a practice session.

Evaluation:

• Practice exercises with timing toward the end for each lesson.

• Final evaluation: In the simulated classroom, each teacher teaches 10 peer colleagues each with different words from sixth year lessons.

Feedback:

• Provide participants with feedback on how they are doing and how they can improve through self-assessment, peer assessment, and trainer verification.

• Provide timing and accuracy information following final evaluations. Suggest ways to, as necessary.