

USING COMPUTER TECHNOLOGY IN STIMULATING STUDENTS' ACHIEVEMENT OF ENGLISH VOCABULARY

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I. INTRODUCTION

An American Anthropological Linguist, Sapir in Alwasilah (1993) stated that language is purely human and non-instinctive method of communicating ideas, emotions, and desires by means of a system of voluntarily produced symbols. Meanwhile, language is a system for the expression of meaning reflected in the structure of the language as an instrument to express meaning.

Based on the above definitions, it seems that there is an emphasis on the components of language, such as vocabulary, pronunciation, grammar and phonology. Thus, the language would be very useful if it is used to communicate with others to express the meaning of the language itself.

The global development towards the 21st century which is characterized by the advancement in science and technology with all its impacts on every aspect of human life has made awareness of the importance of language as a tool for global communication. The advancement in information technology has caused almost all existing phenomena on the globe to become transparent and interrelated so that interactions among nations have become stronger. The closeness of interaction among nations has prompted the function of a foreign language has been placed in a very important position. English is one of the languages that many people are obliged to learn it. There are lots of facts to support the idea that learning English is crucial such as: 1). 400 million speakers of first language; 2). 700 million speakers of second or foreign language; 3). over 80 % of the information stored in the world's computers is in English; and 4). it's the main language on the internet, films, songs, and so on. (Keith, 2003)

Vocabulary knowledge is an important element in second language (L2) acquisition. By learning new words, students can increase their ability in listening, speaking, reading and writing vocabularies and can improve their comprehension and production in L2. In the past, vocabulary teaching and learning were often given little priority in second language programs, but recently there has been a renewed interest in the nature of vocabulary and its role in learning and teaching. Traditionally, vocabulary learning was often left to look after itself and received only incidental attention in many textbooks and language programs. Thus, although the course curriculum was often quite specific about aspects of teaching such as grammar, reading, or speaking, little specification was given to the role of vocabulary.

Wilkin (1974: 111) explained that: without grammar, very little can be conveyed, but without vocabulary nothing can be conveyed. It is possible to have good knowledge of how the system of language works and yet not be able to communicate in it; whereas if we know the vocabulary we need, it is usually possible to communicate well.

In summary, it can be stated that is quite sensible to provide students with much attention in learning vocabulary. The status of vocabulary now seems to be changing. For one thing, the notion of a word has been "broadened" to include lexical phrases and routines, and it has been suggested that in the initial stages of learning these play a primary role in communication and acquisition. There are many aids for language teaching to grow students' motivation and encourage them. In this study, the writer chose a computer as a new technology to stimulate their vocabulary. Teaching Vocabulary by using a computer makes the students stimulate remembering some information as key point in their mind. They can be easily remember and know what they have studied from computer. They do not need to do much to get the information from computer.

Taylor (1980) also expressed that computer assisted language learning programs can be *wonderful stimuli* for second language learning. Currently, computer technology can provide a lot of fun games and communicative activities, reduce the learning stresses and anxieties, and provide repeated lessons as often as necessary.

Oliver (2003) stated that computer can help us to remember a number of key points to bear in mind when using computer in English classrooms. Computers are often a catalyst for students' activity. Unlike television, computers invite learners to be active. They can't just sit staring at a computer screen. They have to do something.

Related to this point is the idea of challenge. Working with computers offers an almost continual series of minor (sometimes major) problems that have to be solved in many cases, before the user can continue.

When computer technology combines with Internet, it creates a channel for students to obtain a huge amount of human experience and guide students to enter the "Global Community". In this way, students not only can extend their personal view, thought, and experience, but also can learn to live in the real world. They become

the creators not just the receivers of knowledge. And, as the way information is presented is not linear, second language learners can still develop thinking skills and choose what to explore (Lee, 2000).

In this case, not only the students get the easiest way but also the teachers find the best way in teaching vocabulary. They don't need much time to prepare the lesson for the students. Both of them will take some advantages by using computers. Computer as technology in educational world provides a lot of materials for teachers and students needed in language teaching in the classroom. Very much stimulated by the fact that new technologies have led to a demand for more and better ways of teaching training, current principles of teacher training places an emphasis on a process-oriented approach where teachers are encouraged continuously reflect and improve on their teaching practices. Such an on-going process may involve taking part in in-service training course, carrying out actions research in classrooms or engaging in collaborative discussions and projects with other teachers in both virtual and face-to-face environments.

Computer technology plays an important role in stimulating students' achievement of English vocabulary.

II. DISCUSSION

Language teacher has been using Information and Communications Technology (ICT) in the modern language classroom for over 20 years. The boom period began in the early 1980s with the advent of the microcomputer, which opened up an exciting new range of learning opportunities for students of languages. The computer was hailed by enthusiasts as the panacea, but after the initial period of euphoria many teachers become disappointed with what the computer appeared to offer. This is fairly typical sequence of events whenever a new technology becomes available to teachers.

Oppenheimer (1997:45) predicted the motion picture is destined to revolutionize our educational system and {...} in a few years it will supplant largely, if not entirely, the use of text books. In 1945, William Levenson, the director of the Cleveland public schools' radio station, claim that the time may come when a portable radio receiver will be as common in the classroom as is the blackboard. Forty years after that the noted psychologist B. F. Skinner, referring to the first days of his 'teaching machine,' in the late 1950s and early 1960s, wrote, 'I was soon saying that, with the help of teaching machine and programmed instruction, students could learn twice as much in the same time and with the same effort as in the standard classroom.'

In the last few years the number of teachers using Computer-assisted Language Learning (CALL) has increased markedly and numerous articles have been written about the role of technology in education in the 21st century. Although the potential of the Internet for educational use has not been fully explored yet and the average school still makes limited use of computers, it is obvious that we have entered a new information age in which the links between technology and TEFL have already been established. In the early 90's education started being affected by the introduction of word processors in schools, colleges and universities. This mainly had to do with written assignments.

The development of the Internet brought about a revolution in the teachers' perspective, as the teaching tools offered through the Internet were gradually becoming more reliable. Nowadays, the Internet is gaining immense popularity in foreign language teaching and more and more educators and learners are embracing it.

2.1.1 Computer Assisted Language Learning (CALL)

Computer Assisted Language Learning (CALL) may be defined as "the search for and study of applications of the computer in language teaching and learning". CALL is a term that came into favor in the early 1980s, replacing the older term CALI (Computer Assisted Language Instruction). The term CALI fell out of favor because it became associated with programmed learning, i.e. a teacher-centered rather than a learner-centered approach that drew heavily on behaviorism. Throughout the 1980s CALL widened its scope, embracing the communicative approach and a range of new technologies. CALL now includes highly interactive and communicative support for listening, speaking, reading and writing, including extensive use of multimedia CD-ROMs and the Internet. An alternative term to CALL emerged in the late 1980s, namely Technology Enhanced Language Learning (TELL), which was felt to provide a more accurate description of the activities which fall broadly within the range of CALL.

Computers have been used for language teaching ever since the 1960's. According to Warschauer, M. & Healey, D. (1998), this 40-year period can be divided into three main stages: behaviorist CALL, communicative CALL, and integrative CALL. Each stage corresponds to a certain level of technology and certain pedagogical theories.

2.1.1.1 Behaviorist CALL

In the 1960's and 1970's the first phase of computer-assisted Language Learning featured repetitive language drills, the so-called drill-and-practice method. It was based on the behaviorist learning model and as such the computer was viewed as little more than a mechanical tutor that never grew tired. Behaviorist CALL was first designed and implemented in the era of the mainframe and the best-known tutorial system, PLATO One of the most sophisticated system, which ran on its own special PLATO hardware, including central computers and terminals. The PLATO system included vocabulary drills, brief grammar explanations and drills, and translations tests at various intervals (Ahmad, Corbett, Rogers, & Sussex 1985). Drill and practice courseware is based on the model of *computer as tutor* (Taylor 1980). In other words the computer serves as a vehicle for delivering instructional materials to the student. The rationale behind drill and practice was not totally spurious, which explains in part the fact that CALL drills are still used today. Briefly put, that rationale is as follows:

1. Repeated exposure to the same material is beneficial or even essential to learning
2. A computer is ideal for carrying out repeated drills, since the machine does not get bored with presenting the same material and since it can provide immediate non-judgmental feedback
3. A computer can present such material on an individualized basis, allowing students to proceed at their own pace and freeing up class time for other activities.

2.1.1.2 Communicative CALL

The second phase of CALL was based on the communicative approach to teaching which became prominent in the 1970s and 80s. Proponents of this approach felt that the drill and practice programs of the previous decade did not allow enough authentic communication to be of much value. One of the main advocates of this new approach was John Underwood, who in 1984 proposed a series of "Premises for 'Communicative' CALL" (Underwood 1984:52). According to Underwood, communicative CALL

1. focuses more on using forms rather than on the forms themselves;
2. teaches grammar implicitly rather than explicitly;
3. allows and encourages students to generate original utterances rather than just manipulate prefabricated language;
4. does not judge and evaluate everything the students nor reward them with congratulatory messages, lights, or bells;
5. avoids telling students they are wrong and is flexible to a variety of student responses;
6. uses the target language exclusively and creates an environment in which using the target language feels natural, both on and off the screen; and
7. will never try to do anything that a book can do just as well.

Several types of CALL programs were developed and used during this the phase of communicative CALL. First, there were varieties of programs to provide skill practice, but in a non-drill format. Examples of these types of programs include courseware for paced reading, text reconstruction, and language games. In these programs, like the drill and practice programs mentioned above, the computer remains the "knower-of-the-right-answer" (Taylor & Perez 1989:3); thus this represents an extension of the *computer as tutor* model. But - in contrast to the drill and practice programs - the process of finding the right answer involves a fair amount of student choice, control, and interaction. In addition to *computer as tutor*, another CALL model used for communicative activities involves the *computer as stimulus* (Taylor & Perez 1989:63). In this case, the purpose of the CALL activity is not so much to have students discover the right answer, but rather to stimulate students' discussion, writing, or critical thinking. Software used for these purposes include a wide variety of programs which may not have been specifically designed for language learners. The third model of computers in communicative CALL involves the *computer as tool* (Brierley & Kemble 1991; Taylor 1980) or, as sometimes called, the *computer as workhorse* (Taylor & Perez 1989). In this role, the programs do not necessarily provide any language material at all, but rather empower the learner to use or understand language. Examples of *computer as tool* include word processors, spelling and grammar checkers, desk-top publishing programs, and concordancers. Of course the distinction between these models is not absolute. A skill practice program can be used as a conversational stimulus, as can a paragraph written by a student on a word processor. Likewise, there are a number of drills and practice programs which

could be used in a more communicative fashion - if, for example, students were assigned to work in pairs or small groups and then compare and discuss their answers (or, as Higgins 1988, students can even discuss what inadequacies they found in the computer program). In other words, the dividing line between behaviorist and communicative CALL does involve not only *which* software is used, but also *how* the software is put to use by the teacher and students. On the face of things communicative CALL seems like a significant advance over its predecessor. But by the end of the 1980s, many educators felt that CALL was still failing to live up to its potential. Critics pointed out that the computer was being used in an ad hoc and disconnected fashion and thus "finds itself making a greater contribution to marginal rather than to central elements" of the language teaching process. These critiques of CALL dovetailed with broader reassessments of the communicative approach to language teaching. No longer satisfied with teaching compartmentalized skills or structures (even if taught in a communicative manner), a number of educators were seeking ways to teach in a more integrative manner, for example using task- or project-based approaches. The challenge for advocates of CALL was to develop models which could help integrate the various aspects of the language learning process. Fortunately, advances in computer technology were providing the opportunities to do just that.

2.1.1.3 Integrative CALL

The last phase of computer-assisted Language Learning is integrative CALL. Integrative approaches to CALL are based on two important technological developments of the last decade - multimedia computers and the Internet.

Warschauer claims that we are now well into the integrative phase. Certainly, the range of different types of CALL software currently available is impressive. As well as routine drill-and-practice programs, there are vocabulary games, action mazes, adventures and simulations, exploratory programs, and text manipulation packages, including "total Cloze" packages. The main advantage of multimedia packages is that they enable reading, writing, speaking and listening to be combined in a single activity (*hypermedia*), with the learner exercising a high degree of control over the path that he/she follows through the learning materials. That means learners can navigate their own path simply by pointing and clicking a mouse.

The Internet has numerous advantages, building on multimedia technology and in addition enabling both asynchronous and synchronous communication between learners and teachers. For the first time, language learners can communicate directly, inexpensively, and conveniently with other learners or speakers of the target language 24 hours a day, from school, work, or home. This communication can be asynchronous (not simultaneous) through tools such as Web searches, Web concordance, and collaborative writing, electronic mail (email), which allows each participant to compose messages at their time and pace, or in can be synchronous (synchronous, "real time"), using programs such as MOOs ("Multiple-user-domains Object Oriented"), which allow people all around the world to have a simultaneous conversation by typing at their keyboards. It also allows not only one-to-one communication, but also one-to-many, allowing a teacher or student to share a message with a small group, the whole class, a partner class, or an international discussion list of hundreds or thousands of people.

2.1.2 The Use of Computer in Language Learning

The use of computers can capture, analyze, and present data on second language students' performances during the learning process. As we know, observing and checking students' learning progress are very important activities to help students achieve their second language acquisition. When teachers attempt to assess students' learning progress, they can get the essential information from a well-designed computer language learning programs and then offer feedback tailored to students' learning needs.

In addition, students can get various authentic reading materials either at school or from home by connecting to the Internet. And, those materials can be accessed 24 hours a day. In a word, computer technology provides the interdisciplinary and multicultural learning opportunities for students to carry out their independent studies. For learning interaction, random access to Web pages would break the linear flow of instruction. By sending E-mail and joining newsgroups, second language learners can also communicate with people they never met before and interact with their own teachers or classmates. Shy or inhibited learners can be greatly benefited through the individualized technology-learning environment, and studious learners can also proceed at their own pace to achieve higher levels. In particular, many concepts and cognitions are abstract and difficult to express through language the language teaching area. It seems that computers can make up for this shortage by using the image showing on the screen. Interactive visual media which computers provided seem to have a unique instructional capability for topics

that involve social situations or problem solving, such as interpersonal solving, foreign language or second language learning. Both cognitive theorists and humanists all pointed out that practice experience is a very important factor for people's learning. Experiential theory educators believe that learning is about making sense of information, extracting meaning and relating information to everyday life and that learning is about understanding the world through reinterpreting knowledge.

2.1.2.1 Computer Application for use in Foreign Language Class

Grammar

CALL Programs designed for teaching grammar include drill and practice on a single topic (*Irregular Verbs, Definite and Indefinite Articles*), drills on a variety of topics (*Advanced Grammar Series, English Grammar Computerized I and II*), games, and programs for test preparation (*50 TOEFL SWE Grammar Tests*) Grammar units are also included in a number of comprehensive multimedia packages.

Listening

This category includes programs which are specifically designed to promote second-language listening (*Listen!*), multi-skill drill and practice programs (*TOEFL Mastery*), multimedia programs for second language learners, and multimedia programs for children or the general public.

Pronunciation

Pronunciation programs (*Sounds American, Conversations*) generally allow students to record and playback their own voice and compare it to a model. Several comprehensive multimedia programs (e.g. *Learn To Speak English*) include similar features.

Reading

This category includes reading programs designed for ESL learners (*Reading Adventure 1 - ESL*) and tutorials designed for children or the general public (*MacReader, Reading Critically, Steps to Comprehension*), and games (*HangWord*). Also included are more general educational programs which can assist reading (*Navajo Vacation, The Night Before Christmas*) and text reconstruction programs. We can split the reading that a student does into two categories: (a) reading with the Reading Tutor, and (b) everything else (outside the scope of this paper). In the case of reading with the Reading Tutor, "how much reading" translates into how many days a student has a session with the computer, and how many minutes each session lasts. How often the Reading Tutor gets used by whom for how long depends on who sets policy for Reading Tutor use, and in any event lies outside the scope of this thesis. Therefore, for the purposes of the present discussion we will take the number of days allocated for Reading Tutor use per year as externally determined, and likewise we consider the number of minutes of Reading Tutor use per day as also externally determined. How frequently we expect students to read with the Reading Tutor, and for how long each session, have varied for different studies and in different contexts of use.

Writing

Most software for supporting writing falls under the Computer as Tool category (see below). Exceptions include tutorials such as *Sentence Combining, Sentence Maker, and Typing Tutor*.

Text Reconstruction

Text reconstruction programs allow students to manipulate letters, words, sentences, or paragraphs in order to put texts together. They are usually inexpensive and can be used to support reading, writing, or discussion activities. Popular examples include *Eclipse, Gapmaster, Super Cloze, Text Tangles, and Double Up*.

Vocabulary

This category includes drill and practice programs (*Synonyms*), multimedia tutorials (*English Vocabulary*), and games (*Hangman*, *Scrabble*). Also useful are several reference and searching tools (such as concordances) which will be described in the Computer as Tool section below. As any teacher knows, any new topic starts with a large or small number of new words, which students are supposed to learn, to be able to understand the theme and to talk or/and write about it themselves. Any teacher also knows that it is next to impossible to make students learn all the necessary words: at best, they will learn them by heart mechanically, parrot them back at us or write some test, and then probably forget the new vocabulary. If you have tried checking the new words, say two or three weeks later, you know what I mean. To activate the new vocabulary, to recycle the words and expressions, we need some new techniques which will be suitable and satisfying for the new generation which is living in the era of ICT, or maybe even post-ICT.

Computer classrooms are efficient, by all means. But since most of my students are used to asking me for clearer (or sometimes simpler) explanations, I can't imagine my classes without so-called "whiteboard activities". Sometimes it happens, my students fail to apply the skills obtained by working with certain programs in real life, so I pay particular attention to all types of communication as it doesn't only give them an opportunity to bring new vocabulary items and grammar models into practice, but it helps them overcome shyness, which is a great obstacle in learning a language.

Comprehensive

A number of comprehensive multimedia programs are designed to teach ESL students a variety of skills. They range in price but many are quite expensive. Among the better known are *Dynamic English*, *Ellis Mastery*, *English Discoveries*, *Rosetta Stone*.

2.1.2.2 Computer as Stimulus

The computer as stimulus category includes software which is used not so much as a tutorial in itself but to generate analysis, critical thinking, discussion, and writing. Of course a number of the above-mentioned programs (e.g. *The Animals*, *Navajo Vacation*, *Night Before Christmas*) can be used as a stimulus. Especially effective for a stimulus are programs which include simulations. Examples of this latter group include *London Adventure*, *Oregon Trail*, *Sim City*, *Sleuth*, *Crimelab*, *Amazon Trail*, *Cross Country Canada/USA*, and *Where in the World is Carmen Sandiego?* A skill practice program can be used as a conversational stimulus, as can a paragraph written by a student on a word processor. Likewise, there are a number of drill and practice programs which could be used in a more communicative fashion - if, for example, students were assigned to work in pairs or small groups and then compare and discuss their answers (or, as Higgins 1988, students can even discuss what inadequacies they found in the computer program). Also computer simulations in science education as a representation or model of an event, object, or some phenomenon. In science education a computer simulation according to Akpan and Andre (1999) is the use of the computer to simulate dynamic systems of objects in a real or imagined world. Computer simulations take many different forms from 2 or 3-dimensional simple shapes to highly interactive, laboratory experiments and inquiry environments. Figure-1 shows a 2-dimensional graphical representation of weather dynamics over a mountain and a 3-dimensional DNA structure. Figure-2 shows screen captures of two computer simulation. First, the Exploring the Nardoo" enables students explore dynamics of a river. Second, BioWorld enables students examine the body structure and systems. Both of them allow interactivity and collaboration.

2.1.2.3 Computer as Tool

Word Processing

The most common use of computer as tool, and probably the most common use overall of the computer for language learning, is word processing. High quality programs like *Microsoft Word* can be useful for certain academic or business settings (Healey & Johnson 1995a). Programs such as *ClarisWorks* and *Microsoft Works* are cheaper and simpler to learn and still have useful features. *SimpleText* and *TeachText* are simpler yet and may be sufficient for many learners.

Grammar Checkers

Grammar checkers (e.g. *Grammatik*) are designed for native speakers and they typically point to problems believed typical of native speaker writing (e.g. too much use of passives). They are usually very confusing to language learners and are not recommended for an ESL/EFL context.

Concordancers

Concordance software searches through huge files of texts (called *corpora*, which is the plural of *corpus*) in order to find all the uses of a particular word (or collocation). While very confusing for beginners, concordancers can be a wonderful tool for advanced students of language, linguistics, or literature. The best concordancer for language students and teachers is Oxford's *MicroConcord*. The program includes as an optional extra several large (total 1,000,000 words) taken from British newspapers. Or this program, and other concordancers as well, can be used with any other text files available in electronic form.

Collaborative Writing

A number of tools exist to help students work on their writing collaboratively on computers linked in a local area network. The most popular among language teachers is *Daedalus Integrated Writing Environment*, which includes modules for real-time discussion, word processing, electronic mail, and brainstorming, as well as citation software and a dictionary. Other programs with some similar features are *Aspects* and *MacCollaborator*.

Reference

There are numerous CD versions of encyclopedias and dictionaries. Two which have highly recommended (Healey & Johnson 1995a) for language learners are the encyclopedia *ENCARTA* and the *Longman Dictionary of American English*.

Internet

The three most popular uses of the Internet for language teaching are electronic mail (email), the World Wide Web, and MOOs. Numerous programs exist for using electronic mail. The *Eudora* program has several nice features, including "point-and-click" word processing capacity, easy attachment of formatted files, and ability to include foreign characters and alphabets. The free version (*Eudora Light*) is suitable for most purposes; there is also a more powerful commercial version (*Eudora Pro*). *Eudora* requires a direct connection to the Internet. Additional programs which run through the *unix* system and do not require a direct Internet connection are *Pine* and *Elm*. To access the World Wide Web, one needs a special program called a browser. By far the most popular browser among educators is *Netscape*, which until now has been free to teachers and students.

MOOs ("Multiple-user-domains Object Oriented") allow for real time communication, simulation, and role playing among participants throughout the world, and a special MOO has been set up for ESL teachers and students ([schmOOze University homepage 1995](#)). The use of MOOs is greatly facilitated if one uses a special client software program such as *TinyFugue* (for Unix), *MUDDweller* (for Mac), or *MUDwin* (for Windows).

Authoring

Authoring allows teachers to tailor software programs either by inserting new texts or by modifying the activities. Authoring runs on a spectrum from set programs which allow slight modification (e.g. inclusion of new texts) to complex authoring systems. Many of the programs listed earlier (e.g. *MacReader*, *Eclipse*, *Gapmaster*, *Super Cloze*, *Text Tanglers*, and *Double Up*) allow teachers to insert their own texts and thus make the programs more relevant to their own lessons (and greatly extend their shelf life too). By allowing the students themselves to develop and insert the texts, the programs can be made even more communicative and interactive. On the other end of the spectrum, authoring systems allow teachers to design their own multimedia courseware. These can take a lot

of time and effort to master, and are most often used by true enthusiasts. Some are specifically designed for language teachers (*CALIS, DASHER*), others for educators (*Digital Chiseler*) and others for the general public (*Hypercard, Hyperstudio, Supercard, ToolBook, Macromind Director*).

2.1.3 Achievement

According to Algarabel (2001), there are two different definitions of achievement, namely, a first characterization of achievement is accomplished through the analysis of construct representation. From this perspective, the behavioral approach focuses more on the end result, whereas the cognitive approach is more process centered and a second characterization of achievement is about the nomothetic amplitude: the relationships between achievement and aptitudes, socioeconomic status, and changes over time.

2.1.3.1 Achievement of Construct Representation

In the standards for test construction (APA, 1999) achievement is viewed basically as the competence a person has in an area of content. This competence is the result of many intellectual and non-intellectual variables.

The scientific study of achievement encompasses data coming from the acquisition of complex domains, like computer programming, mathematics, or the way in which people solve physics problems. At the experimental level, achievement is referred to as acquisition, learning, or knowledge representation, sometime depending on theoretical biases. Achievement is the word preferred in the educational or psychometrics fields, being sometime characterized by the degree of inference required on the part of the student to give a response, and by the type of reference to a cognitive process made explicit in the measurement tool.

Achievement is the competence of a person in relation to a domain of knowledge. The current view states that to reach the specific level of performance it may be necessary to bring into play complex cognitive tools like strategies, heuristic or skills. No doubt that the end result and the type of means to reach it must be correlated (Wilson 1989), a fact often overlooked. A difficult problem can only be solved after a well-organized body of knowledge is consulted and the appropriate meta-cognitive skills are used to reach the solution. The question then is what can be gained or lost, when taking into account the whole process, as when an open response is assessed, or just the final solution, as in multiple choice. From the point of view of measurement instrument, one can argue that if there is no compromise in reliability; that is, if the evaluation of the whole open response is carried out with a high level of precision, the measurement of the open response will increase validity.

2.1.3.2 Achievement of Nomothetic Amplitude

The relationship of achievement and alternative constructs are malleable (achievement and family atmosphere, socioeconomic status, country, ethnicity) and the others are more fixed (achievement and aptitude). The analysis of the changeable influences, in the case of achievement, serves the purpose of diagnosing educational or schooling programs, and making decisions on the basis of the data. The purpose of examining the relationship between achievement and aptitude is uncertain.

2.2.4 Vocabulary

Broadly defined, *vocabulary* is knowledge of words and word meanings. However, vocabulary is more complex than this definition suggests. First, words come in two forms: oral and print. Oral vocabulary includes those words that we recognize and use in listening and speaking. Print vocabulary includes those words that we recognize and use in reading and writing. Second, word knowledge also comes in two forms, receptive and productive. Receptive vocabulary includes words that we recognize when we hear or see them. Productive vocabulary includes words that we use when we speak or write. Receptive vocabulary is typically larger than productive vocabulary, and may include many words to which we assign some meaning, even if we don't know their full definitions and connotations – or ever use them ourselves as we speak and write (Kamil & Hiebert, in press).

Vocabulary refers to the total number of words which with rules for combining them make up a language (Hornby 1974:959). Vocabulary knowledge is an important element in second language (L2) acquisition. By learning new words, students can increase their ability in listening, speaking, reading and writing vocabularies and can improve their comprehension and production in L2. Traditionally, vocabulary learning was often left to look after itself and received only incidental attention in many textbooks and language programs. Thus, although the course curriculum was often quite specific about aspects of teaching such as grammar, reading, or speaking, little specification was given to the role of vocabulary. But recently there has been a renewed interest in the nature of vocabulary and rightly placed as a fundamentally important aspect of language development.

2.1.4.1 Vocabulary Technique

Students can increase their vocabulary knowledge formally in the classroom and informally through communication with others and through out of class activities. Many instructional techniques were devised and utilized by L2 language teachers to develop the general and academic vocabulary of students.

According to Kinsella (1985:98), vocabulary techniques are divided into five well as follows:

1. **Vocabulary can be more than one word**

Vocabulary is not only words, but it can be phrases that are impossible to be translated word by word. For example on relatively formal circumstances, two speakers of (British) English meeting for first time will both say *how do you do*. *How do you do* is a complete phrase with a single meaning. The meaning of this group of words can not be deduced from the meaning of individual words. The word 'how' for example, at first suggests that the phrase will be a question. But when both speakers use the same phrase, it is clear that it is a greeting. Students need to be given lists of phrases, beside lists of words and the teacher should explain the phrase by a description of how the phrase is used.

2. **The functional approach is a good way**

Actually, the students only need to understand its meaning. If the teacher explains the functional approach of those phrases, students will know how to use them. The teacher must avoid confusing their students by giving structural explanations for functional materials.

3. **Active and passive vocabularies**

Learning more vocabularies does not guarantee someone's fluency. Teachers and even students, feel that increasing their vocabulary passively such as learning by heart will increase their fluency in speaking or in writing. But this is very far from the truth. The most important thing for the teacher is that at the beginning of most conventional language courses, all the words that are taught intended to be acquired for active use.

4. **Explaining the difference of meaning is the effective way**

Understand or explaining what something means is more complicated. There is a temptation, for example, for teacher to explain a word by a direct translation. It is exceptionally rare for a word in one language to have a direct equivalent between one another. Furthermore, each word has a meaning, which can be related to other words. It is better to explain the difference of meaning rather than meaning itself. Besides, the teacher may use the picture to explain the different meaning of word. It is such as the word bush and tree, which the teacher can draw the picture of a tree and a bush. It is easy for students to remember because it is done visually and contrastively.

5. **Word are often best taught in groups**

An individual word in language frequently acquires a meaning because of the relationship between it and other words. Awareness of certain kinds of relationship makes explaining vocabulary easier for the teacher and learning it simpler for the student.

Here are some important relationships:

a. **Synonym**

Synonym are frequently meant as the similar of words. For example the word *enormous*, which its possible for the teacher to say the same meaning of enormous with *very large*.

b. **Antonyms**

Antonyms are often named as opposites. Antonyms are good to be taught to students in order they are not only know the word but also the opposite of the word. The word *young*, for example, opposite with the word *old*, the word *big* opposite with the word *small/ little*, etc.

c. **Complements**

Complements are word, which can be representative to the other words such as the word *single* or *married*. In this case it is possible to explain by saying *single* means *not married*. Complement can also be extended to groups of incompatible words, which are explained by saying not the others. It is such as *morning – afternoon – evening – night*. For this group of words, it best to teach the meaning of one word depends directly on the meaning of the others.

d. **Converses**

Converses are pair of words, which implies each other such as *parent* and *child*, *employer* and *employee*, etc. Such words are best explained together.

e. **Hyponyms**

Hyponyms are general meaning for specific words. For example, *car*, *van*, *bus*, *lorry*, are hyponyms vehicle. Sometimes, such words are difficult to handle without translating. It is such as

the word *a carnation*, which hyponym of flower. It is important to students to know the meaning of the word. So that's why, translation is necessary to be given to them.

Base on the 2004 curriculum content, the student of second year of senior high school should know the best strategies and motivated the students so that they can master vocabulary as many as possible.

2.1.4.2 Vocabulary Achievement through Computer Technology

Computer Assisted Language Learning (CALL) has a positive influence on student's motivation, interest, and learning. The National Reading Panel Says (2000, p. 4-4); Computer technology can be used effectively to help teach vocabulary.

Computer use may be new to the student and thus be a motivating factor in learning. Never the less the students may progress rapidly with this new method. Learners do tend to like learning in different ways and diverse methodology. Thus, there can be tutorial software used in vocabulary development.

A mixed approach to vocabulary instruction was used by few studies such as Hill (1998), Laufer and Hill (2000) and Johnson (1997). Johnson (1997) used three methods of vocabulary instruction (contextual cues, definitions, and a mixed approach) supplemented by computer-assisted instruction (CAI) using a mixed approach.

Bazeli & Olle. (1995) discussed research findings regarding vocabulary instruction and suggested methods to develop vocabulary using visual aids. They pointed out a strong need to relate concrete visual experiences to vocabulary development, providing active, meaningful, and repeated word use. Visual methods for developing vocabulary that involve students actively taking part in their reading vocabulary development include using: interactive video; student illustration of vocabulary; computer software packages designed to develop reading skills; activities that involve visual perception; and graphic organizers, including story maps, collaborative rehearsal of new vocabulary, and student-made flash cards. The use of visuals, combined with cooperative learning groups, provides an effective environment for the development of vocabulary and reading comprehension.

Many software programs offer 'read along' and 'edutainment' that assist students as they learn letter sounds, vocabulary concept, comprehension, and to enjoy literature. Interactive multimedia allows the printed word to take on sight, sound, and action visually and mentally stimulated the individual.

Here are some kinds of software programs can be used as follows:

Name/ Type of Software	Features/ Functions	Advantages/Application for Language Study	Cost
Learn to Speak English v. 8.1 (Learning Company, Inc)	<ol style="list-style-type: none"> 1. The Home Screen 2. Pronunciation 3. The Basic Course 4. The Extended Courses 5. Internet Lessons 6. The Cultural Movies 7. The Progress 8. The Customization 9. Dictionary 10. Grammar 11. Online Study Group 	Learn To Speak is a comprehensive computer program that builds all-around fluency in a foreign language, from speaking and understanding to reading and writing. This version of Learn To Speak contains progressive courses that place a strong emphasis on building skills through practice and review utilizing extensive lessons, exercises, and drills. Through visual, auditory, and interactive participation, this program provides educational content in an all-encompassing format combining video, audio, textbook, and online instruction.	
BARRON'S TOEFL	<ol style="list-style-type: none"> 1. General TOEFL orientation 2. Computer-Base TOEFL 3. Paper-Base TOEFL 4. Next Generation TOEFL 	How to prepare for the TOEFL	

The use of computer technology in stimulating student's achievement of English vocabulary that has firstly delineated in theoretical perspective through which to view the research. There are several competing theories of vocabulary acquisitions, much of the research supports to the use of computer technology as one of mixed approach.

A broad range of technologies may support teaching, this digest will examine those technologies involved in computer and Internet use for purposes of FL instruction and learning and will use the term CALL (computer-assisted language learning) to include "the search for and study of applications of the computer in language teaching and learning" {...}. There was a significant lack of references to innovative pedagogical approaches: Data Driven Learning was the only new approach to language teaching that was cited by survey respondents as a direct result of the attributes of the computer. In other words, this approach has been conceived with the computer in mind. (Levy 1997:123).

This theoretical review reflect two variables on vocabulary acquisition both computer technology as stimulus and vocabulary achievement perspectives on foreign language acquisition. Therefore, those variables that affect to traditional vocabulary learning are expected to be influential in vocabulary acquisition as well. Furthermore, providing several authentic multimedia software applications should create a more interesting learning environment serving learners with different learning styles. It is suggested that differences in learning styles should result in distinctive navigation patterns and differences in learning outcomes in hypermedia environments.

III. ANALYSIS

The researcher gave questionnaire which is to find out how dept students' sure about computer technology can improve or faster their vocabulary achievement, for more depth investigation the students was analyzed according to each of the twenty-one vocabulary items. The students were divided into three group in different answer who were familiar and answered correctly, familiar but did not answer correctly and unfamiliar and did not answer. In other words, it was found that a different number of students' answer between students have computer base and non computer base. The students' vocabulary performances were compared with the results of the test for sample selection in order to find whether there is any effect of the activities in computer technology on the students' vocabulary achievement.

This analysis poses several limitations; thus, the findings should be considered with caution. The target population of the study was not EFL students but who learn English for academic purposes. This study should be replicated in other learning contexts with students from different levels to generalize findings to a larger target population. Finally, further studies with larger sample sizes must be conducted to investigate whether a really significant variation existed in the population: the results cannot be generalized to people who are not pre-tested.

IV. FINDINGS

Computer-Based Teaching Learning Class

1. From the number of 75 respondents, 90% active in use computer technology.
2. 80% familiar and manage to answer correctly and
3. 18% familiar with the word but didn't answered correctly
4. while only 2% of the students unfamiliar and didn't answer
5. The respondents who were rarely connected with computer technology is 10%

Non Computer-Based Teaching Learning Class

1. From the number of 75 respondents 25% active in using computer technology
2. 26% familiar and manage to answer correctly and
3. 5% familiar with the word but didn't answered correctly
4. and 69% of the respondents unfamiliar and didn't answer
5. The respondents who were rarely connected with computer technology is 75%

A significant difference was found to both in different teaching learning, Computer-Based Teaching Learning Class and Non Computer-Based Teaching Learning Class. Suggesting that are correlation between the use computer

technology and the students' achievement of English vocabulary. That means computer technology proved a powerful tool for improving students' achievement of English vocabulary.

V. CONCLUSIONS

After analyzing the data, conclusions are drawn as the following

- (1). There are important roles between the use of computer technology and the students' achievement of English vocabulary.
- (2). There are important roles such as:
 - (a). Authentic materials for study,
All students can use various resources of authentic reading materials either at school or from their home. Those materials can be accessed 24 hours a day at a relatively low cost some Internet activities give students positive and negative feedback by automatically correcting their on-line exercises.
 - (b). Enhance student achievement,
Network-based instruction can help students strengthen their linguistic skill by positively affecting their learning attitude and by helping them building self instruction strategies and promote their self-confidence
 - (c). Global understanding,
A foreign language is studied in a cultural context. In a world where the use of the Internet becomes more and more widespread, an English Language teacher's duty is to facilitate students' access to the web and make them feel citizens of a global classroom, practicing communication on a global level.

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