**Title: *The Effect of Computer Assisted Language Learning (CALL) on L2 Vocabulary Acquisition.”***



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**Abstract**

Developing the academic literacy of L2 learners within the United States seems to be a challenge that most schools struggle with. This paper explores the literature on the use of computer based technology and software in the acquisition of L2 learning in the classroom. The goal of this paper is to understand how to effectively incorporate technology into L2 curriculum, and to determine technology’s impact on L2 acquisition. It draws data from a popular computer based technology pathways: Computer Assisted Language Learning (CALL). The first approach is to view how CALL facilitates independent and collaborative learning, and provide students with language experiences. Finally, we will discuss the effect CALL has on L2 vocabulary acquisition.

Computer technology has advanced over the world throughout the decades. It has changed the face of the classroom, and it has changed the way we access and retrieve information. One important aspect of learning that education has changed is how we learn and acquire a second or foreign language. One popular form of computer-based technology that aids in this is Computer Assisted Language Learning (CALL). Computer Assisted Language Learning is “the use of computer in the teaching or learning of a second or foreign language” (Ellis, 1995; Goodfellow, 1995). The programs are student-centered, and focus on learning and not teaching. In that, learners are allowed to work at their own pace until they are able to fully acquire the language that they are learning. This research aims to draw data from multiple research articles in order to see what effect CALL has on L2 vocabulary acquisition in an attempt to answer the following questions: “Does teacher-directed classroom along with computers lead to a better vocabulary learning outcome for ELLs and/or “Are there any differences for students who are taught explicitly through direct-teacher classroom instruction, versus students who are taught solely by Computer Assisted Language Learning?”

Vocabulary plays an important role in language proficiency and is a key component of how well learners speak, read, listen and write. What was once seen as not important to second or foreign language acquisition has since been receiving recognition among the linguistic community due in part to comprehension-based approaches to language. According to Nunan, 1999, “there is a reciprocal, well-documented relationship between vocabulary knowledge and reading comprehension.” In that, both vocabulary acquisition and reading comprehension goes hand in hand when it comes to learning a second or foreign language. Almost, if not all schools in the United States of America adhere to an English Language Arts curriculum that places a lot of emphasis on reading comprehension, whereas, most English Language Learners have been struggling with this due to the fact that they are not equipped with the extensive vocabulary knowledge that will enable them to succeed at a fast rate comparable to their L1 counterparts. Fluency of any kind in learning a second or foreign language requires that the learner knows about 2000 to 7000 words from that language, and more if they want to reach native like fluency (Grabe, 1991). That said, as language educators, not only do we need to keep an open mind when it comes to using technology to teach language, but we have to view vocabulary as training wheels toward bigger language acquisition goals.

**The Effect of CALL on L2 Vocabulary Acquisition**

The use of computers to support language teaching and learning dates back to the 1960s. It can be broken down into three main parts: behaviorist CALL, communicative CALL and integrative CALL; which all relates to some form of pedagogical approach:

Behaviorist CALL: This was developed in the 1960s-1970s and followed an audio-lingual approach, which dealt solely with the learner listening, and then repeating what they hear. Many believed that this approach of extensive drilling would aide in the acquisition of the language that the student was learning.

Communicative CALL: This approach is the opposite of behaviorist, and uses a variety of activities such as language games, reading, and text reconstruction to build and practice skills in a non-drill format. Students are allowed to make choices, and have more control over their learning. Instead of repeating words and phrases exactly as heard through the program, learners are encouraged to develop their own ideas, and think critically to provide responses. Also, communication is done almost exclusively in the target language. (Genc and Aydin, 2011)

Integrative CALL: Currently, integrative CALL is what being used on a wide scale, and is the most advanced form of the three approaches. This includes something referred to as hypermedia and consists of a combination of multimedia graphics, animations, sound, and video, allowing learners to navigate and learn at their own pace. (Warschauer, 1996)

**Review of Related Literature**

Technology, which is constantly changing, has had its effect on language teaching and learning (Warschauer, 1996). Computer and software technology have become a fixture in many homes, and has made it easier for how, when, and where we learn language. With its significant impact on education, we have seen a great rise of it being integrated into classrooms to assist in teaching and learning. According to Warschauer and Healey (1998), “it is the rise of computer-mediated communication and the Internet, more than anything else, which has reshaped the use of computers for language learning at the end of the 20th century” (Warschauer & Healey, 1998). Whereas, computers today whether in the classroom, or in society as a whole, with the help of the Internet have been transformed from a tool of information to a tool for communication. Some factors such as learning laboratories, multimedia lessons, and extensive drilling approach associated with computer-assisted language learning makes it easier to monitor, record, assess, and analyze student language performance. These capabilities make language teaching and tutoring possible for the teacher and the learners. The effect of this on the teacher is that it saves time–that is with the proper language software the teacher does not need to create an assessment, or a lesson from scratch because the program is tailored to the student’s needs once the computer program collects the necessary data. The effect of this assisted language-learning program on the student is that it creates autonomy in the language learning process. Students can work at their own pace due to the fact that CALL provides students independence from the classroom where they can work on the material at any time and any place. However, the issue with this is that there is no accountability, in the sense that if students aren’t intrinsically motivated they might get discouraged, and not practice this learning outside of the classroom.

Although there are numerous research studies on CALL in general, the investigation of whether CALL vocabulary instruction is effective on L2 learner’s within the United States has not been widely-researched; therefore, the literature mostly synthesized articles that have done studies on students from other countries who were either learning English, or a foreign language, and is divided as follows:

1. *The Effects of CALL on Vocabulary Learning: A Case of Iranian Intermediate EFL Learners* by Maftoon et al conducted a research to see if CALL has any effect on vocabulary learning. Their findings showed that there was some usefulness of incorporating CALL into vocabulary acquisition for ENL/EFL learners. For instance, it facilitates vocabulary learning by helping students in remembering what they have studied, and also enhancing students’ motivation to learn the English Language. Another confirmation of this study is that long-term a higher-level of students was able to recall the English vocabulary that they were exposed to, due in part to the use of multimedia CALL software. Even though effective learning of new English vocabularies is important for L2 learners, there seems to be some setbacks when it comes to teachers, learners, and the software within itself. Firstly, even though teachers know the importance of technology, especially computers within the classroom, very few try to incorporate it within their pedagogy. This might stem from the fact that some teachers view computers and technology as the enemy, rather than seeing its benefits in the language learning process. Also, it is that fear of teacher purge by technology from the classroom. Secondly, there is a lack of sufficient CALL-based studies being done in the U.S. Rather; most of these ESL language-learning studies are done in foreign countries. In which, it is difficult to compare the level of motivation among students from a foreign country, and students within the U.S. especially because all parties are learning the language because of their own unique intrinsic and extrinsic reasons.

2. *The Possible Effect of CALL on Vocabulary Acquisition and Instruction* looks at the relationship between vocabulary development and reading comprehension. Like much of the other research suggests, an easy way for L2 to acquire vocabulary is through visual imagery. With the use of multimedia application, which offers a variety of annotation (pictures, text, sound), students were able to learn and retain many of the new words that they learned. Once L2 learners are equipped with the necessary vocabulary, not only does it help them to improve in other parts of the language learning process, but it helps them to master content such as reading comprehension, which is almost prevalent in every English Language Arts curriculum, within the United States. However, when it comes to using the computer for teaching and learning second language it has its downsides, such as, the financial barriers in the purchasing of the computer itself, or the necessary software to aide in the language learning process. Also, having the technical and theoretical knowledge of teaching one’s self how to correctly use, and monitoring all aspect of the software in order to get an extensive use from it.

3. In the article *“Applying information and communication technologies to language teaching and research: an overview”* the authors Antonio Pareja-Lora, Pilar Rodríguez-Arancón, and Christina Calle-Martinez discuss the ways in which modern technology can be used for new language acquisition; in a variety of traditional and non -traditional settings. Education on the whole has been changing dramatically on an international scale ­– creating new teaching environments– therefore requiring adjustments from traditional teaching models to mixed methods of both instruction and learning. These innovations require role changes for not only the educator, but also the student. The authors attempt to demonstrate how these advances in technology due to the accessibility of a multitude of computing devices can be successfully implemented into language teaching and learning with positive outcomes. However, they fail to explain in depth how these technologies can be successfully integrated into curricula for the best possible outcomes for L2 learners, and instead provide several examples of studies that have been conducted exploring different types of CALL (MALL, CMC, MOOCs to name a few) and touch on the results of those findings. Furthermore, the article wasn’t clear on the benefits or disadvantages of using CALL programs for language learning.

4. *The e-generation: the use of technology for foreign language learning* by Pilar Gonzalez-Vera was primarily comprised of series of questionnaires aiming to obtain the learner’s opinion on the usefulness of CALL and other computer based technology on their own language learning. It discusses the notion that due to key technological advances, educators as well as students heavily rely on the usage of computers, laptops, mobile devices, and online resources in order to facilitate learning. Colpaert suggests that distance learning, whose intent was to reduce and address the time and space constraints of traditional classroom environments, has now been replaced by online learning platforms for the simple fact that technology has become completely adapted into our daily lives. More specifically, educators have come to rely on online access as an avenue to conduct instruction either completely, or as a supplement to traditional means (Colpaert, 2004). Students were given a series of four pre-questionnaires followed by one post questionnaire inquiring the following key elements, respectively:

a. Student’s access to and use of technologies;

b. Student’s competence in linguistic communication;

c. The way in which the students learn English;

d. Student’s autonomy and personal initiative when learning; and

e. Role of technology in the learning process and students’ competence in English. (Gonzalez-Vera, 2016)

5. The article *Vocabulary acquisition in L2: Does CALL really help?,* examines the usage of the CALL program Word Engine compared to traditional learning methods. In the study, Japanese students attempting to learn English were being assessed by a highly regarded standardized English proficiency exam titled TOEIC. Two sets of students were studied and ultimately, the group that utilized Word Engine, fared markedly better at acquiring the language and vocabulary than the group that used traditional methods of memorization, reading comprehension, fill-in-the blank, sentence building activities, and word reviews. Additionally, they scored significantly higher on the TOEIC over the course of two years, than their counterparts who had not used the program in previous years. This study specifically compared these two groups of students, showing distinctions and positive results of using CALL as a learning tool. It is also worth noting, that when the school got rid of the program, the students TOEIC scores subsequently declined. (Avieranova, 2015)

6. *The Impact of Computer Assisted Language Learning (CALL) on Vocabulary Achievement of Iranian University Students EFL Learners* tried to determine if CALL has any effect on vocabulary learning for Iranian EFL learners. Their findings determined that there is no relationship between CALL and vocabulary achievement for Iranian EFL learners. The research did explain why there was no relationship between CALL and vocabulary achievement for Iranian EFL learners. In that, a previous study conducted on Iranian students, which was looked at, and spoke about in this literature review they did see a relationship between CALL and vocabulary achievement for Iranian students. However, in the previous study they gave students a pre-test and a post-test on the vocabulary words that they were supposed to know. Also, the instructor gave students a lecture on how to navigate the software and the Internet before they began the actual learning process. Whereas, in this particular study students were also given a pretest and post-test, but the pretest was used to test how many English vocabulary words the students knew, and the post-test assessed them on words that they actually learned during the learning process. It is hard to determine that there is no relationship between CALL and vocabulary achievement because different groups have found success with multiple CALL vocabulary software. There is a possibility that this study did not use the correct learning materials, and/or their staffs were not properly trained to carry out this particular activity. This is too broad of a conclusion passed on CALL’s effectiveness in vocabulary development. As of now, there has not been any research update on whether or not this particular vocabulary software was updated, or retested.

**Analysis and Implications**

Although there are many computer software programs designed to help in language learning and teaching, the aim of this research was to see the effect of CALL on L2 vocabulary acquisition, while trying to answer the questions of whether or not teacher-directed classroom along with computers lead to a better vocabulary outcome and if there are any notable differences for students who are taught explicitly through direct teacher classroom instruction. A few of the research findings that were synthesized placed great emphasis on vocabulary acquisition and reading comprehension, due to the fact that there is a reciprocal relationship between the two. The research points out that the better the students’ vocabulary knowledge, the better they perform in reading comprehension. Even though there is a reciprocal relationship between the two, the research did not highlight how CALL aids in reading comprehension, especially if the student is not equipped with a large vocabulary background. Also, from a psychological standpoint, some students may be sensitive to computers and educational software, and may prefer learning English the conventional way, in a teacher-centered classroom.

Conversely, one of the major advantages of students who rely solely on Computer Assisted Language programs as their means for learning a new language, can also been seen as a disadvantage, and lies in the very fact that they have complete autonomy over their education. Students that fall into this category, can have a higher dropout rate, or tend to lose motivation to stick with the program more so than their traditional classroom-learning counterparts. The student’s motivation or "the process whereby goal-directed activity is instigated and sustained" (Pintrich & Schunk, 1996), to learn a second language can be attributed to numerous factors, and is a noteworthy variable to consider when trying to determine the success of the learner.

Masgoret and Gardner (2003) argues that the student’s motivation is strongly related to learner outcomes, and that highly motivated learners not only possess a desire to learn the language, but also enjoy the process and are therefore more likely to see it through. He goes on to state that motivation is the most influential part in learning the new language, therefore having the most direct impact in whether or not the learner is successful. (Gardner 2003). This can be further explored by considering the nature of the motivation. Is the student learning the language as a class or job requirement? Or maybe he/she is going to visit or move to a new country where the language is spoken and it’s a means necessary for survival. Or, is the learner simply interested and learning for recreational purposes? All of these and a variety of other reasons for learning the L2 can either positively or negatively impact the level of motivation the learner has to succeed. Surprisingly, none of the research explicitly highlights how CALL can be built into the curriculum for it to be more effective for L2/foreign language learners.

 **Conclusion**

Overall, it may be concluded that coupled with effective pedagogical practices and a strong curriculum, using CALL technology in the classroom can prove to be a beneficial tool for second language learners. The role of the teacher in CALL usage can be seen as an important part of the learning process. The consensus of the articles referenced suggests, however, that CALL technology should not be looked at as a replacement to traditional classroom instruction, but more so as a supplement to it. Students still thrive in environments that promote and encourage human interaction, but can also benefit tremendously from the convenience, autonomy, and ownership over one’s success that CALL technology and its derivatives can offer.

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