THE EFFECT OF SYNCHRONOUS AND ASYNCHRONOUS PEER FEEDBACK ON TRANSLATION STUDENTS’ VOCABULARY

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ABSTRACT

This paper examined an experimental study of (a) synchronous peer feedback in reading comprehension classes among Translation students developing their vocabulary knowledge at Islamic Azad University, Abadan Branch. Two classes were treated under the control and experimental conditions. Participants included 90 English as foreign language (EFL) students who were selected among 120 learners based on a researcher-made vocabulary achievement test. Then they were divided into two equal experimental and control groups. To the experimental group, synchronous peer feedback techniques via internet was started in which the students learnt how to submit their own vocabulary exercises and check their classmates’ feedback in asynchronous mode. For the control group, the feedback mode was offline through which they evaluating the same synchronous photocopied passages and sharing with their classmates within the class. After 10 consecutive sessions in a full semester, the students were tested on their post-test on vocabulary achievement on ten units covered throughout the treatment period. The performance of the two groups was compared through using an Independent Samples t-test statistical analysis. The control group who worked on peer feedback asynchronously outperformed the experimental group who dealt with group peer feedback synchronously (p<0.05).

Keyw rods: Synchronous, Asynchronous, Peer feedback, Translation students, Vocabulary.

1. INTRODUCTION

Technology changes the educational area increasingly and it could be reasonable that the English teachers should be more familiar to terms such as education technology, science and technology, internet, multimedia, satellites, simulation, educational games, electronic networks, new methods of generation and transmission of visual and graphic information, virtual library, CALL, and computer science applied to education (Hubbard and Levy, 2006). The use of those terms shows the changing nature of the educational environment that is a vital part of the new
world order and have started to trigger the modernization of the teaching learning process and consequently started to modify the way the educational system works (Son, 2008).

Students can increase their listening, speaking, reading and writing vocabulary items and can improve comprehension and production in the L2. It provides an integrative network tool utilized in any teaching classroom all around the globe. Decarrico (2001) as cited in Celce-Marcia (2001) claims “Vocabulary learning is central to first and second language acquisition and specialists now emphasize the need for a systematic and principled approach to vocabulary by both teachers and learners” (p. 285). Vocabulary plays an important part in reading comprehension and techniques that are useful for vocabulary development (such as software glossing) also benefit reading comprehension, and vice versa (O'dowd, 2003).

CALL programs can be divided into synchronous (online) and asynchronous (offline) modes. In synchronous CALL programs, people can communicate in real time via chat or discussion software through a live channel, with all participants at their computers at the same time; while in asynchronous CALL programs, on which the present study emphasizes, people communicate in a delayed fashion by computer via offline mode, e.g. email. As a matter of fact, synchronicity refers to the timing of message exchange within a given time frame. In face to face (FtF) and computer-mediated communication (CMC), when message exchange occurs in real time, it is referred to as synchronous, or same-time communication; when time lapses separate conversational turns, it is referred to as asynchronous, or different-time communication. Instant messaging, text chat, multi-user dungeon (MUD), and mud object oriented (MOO) are different forms of synchronous communication. Email and electronic bulletin or message boards are forms of asynchronous communication.

Some advantages of asynchronous CALL programs compared to synchronous ones, according to Hubbard and Levy (2006) including having more time to think and elaborate messages, feel more relaxed, more freedom and at own pace to self-correct, more chance to write, etc.

This study seeks to find out the impact of asynchronous CALL programs on EFL high and low achievers' vocabulary retention. In conducting the research, 50 intermediate learners, all from Iranian backgrounds, were asked to report what vocabulary they could retain immediately after a lesson and to what extent they could retain it. They were then tested for retention of vocabulary after a two week and a six week intervals. Transcripts of the classroom interaction in the lessons were also examined to see if any connections between classroom interaction and the retention of vocabulary could be established. Froke (1994) suggested, "Concerning the money, the challenge was unique because of the nature of the technology" (p. 46). Availability of high quality software is the most pressing challenge in applying the new technologies in education (Herschbach, 1994; Miller, 1997). There are few educators skilled in designing it because software development is costly and time-consuming (McKay, 1980).

Iranian language teachers may be more comfortable with textbooks because it is what they are used to do, and there is the idea that the use of computers threatens traditional literacy skills since such teachers are heavily tied to books. As we approach the 21st century, we realize that
technology as such is not the answer to all of our problems. In Iranian setting, asynchronous CALL programs have not implemented unless they are required even if dealing with vocabulary teaching. The current study attempts to answer the following question: To what extent do (a) synchronous CALL programs affect translation students’ development of vocabulary?

2. REVIEW OF LITERATURE

A CALL-program is usually introduced at academic contexts for various reasons. And language learners look for effective ways to increase opportunities for learning and retaining new words in their long-term memory. Huge studies in this area shows different ways each scholar has looked to this field but the ones, which are in line with this study, has differentiated between meaningful and rote learning. Rote learning as the name bears for itself indicates vocabulary-learning styles in which the learner learns unknown words in isolation, with little or no association to the already existing cognitive structure in the brain. Since learned vocabulary in this style has no connection to the already existing structure, learners tend to forget the new learned vocabulary. However, on the other style of vocabulary learning, which is called Meaningful Learning, the learners learn unknown vocabulary, connecting it to the already existing cognitive structures. This connection is more meaningful and systematic than the first one.

There are conditions that contribute to the breakdown of the connection of the new vocabulary to the existing network which could hinder learning and longer retention of the new vocabulary. These conditions are among those which pertain to this research, the lack of sufficient input and lack of sufficient output are of paramount importance. Paper and print constrains in being linear presenters of information were probably the reasons for emergence of CALL. In addition, the reluctance students often demonstrate toward using paper-based dictionaries in reading situations in second or foreign language emerged the need for change. This change not only should eliminate the shortcomings. Gettys et al. (2001) claim most subjects in such research studies state that they definitely prefer some manner of immediate or computer-assisted support rather than more traditional ways in the learning the word meanings, of the previous media (paper and print); however, it also should challenge their advantages. In doing so, new approaches toward language teaching have evolved asynchronous CALL programs over traditional approaches which developed earlier for vocabulary acquisition mainly through word-list pedagogy. But word-list pedagogy was not an effective way of teaching vocabulary (Fitzgerald, 1995).

According to Shrum and Glisan (1994), and Trump et al. (1992), word list pedagogy did not introduce new words to be learned within their meaningful contexts. However, advancement in computer technology has triggered the development of asynchronous CALL programs (Gorjian, 2008). Using this technology not only facilitates learning processes (Hayati, 2005), but also holds other great potentials for language learning. One of these potentials is the ability to present information in different formats using graphics, sound, text, and video with links to other chunks of information (Slatin, 1991).
Computer activities in an asynchronous way have several advantages; research carried out by (Boers et al., 2004; Abraham, 2008) have provided evidence of an overall beneficial role for computer mediated text glosses providing lexical support on comprehending authentic second language (L2) readings and learning vocabulary. Nation (2001) also asserts that electronic glossing is widely acknowledged as a suitable method for supporting learners while reading academic texts in a foreign language.

Reinking and Rickman (1990), for example, investigated whether intermediate-grade readers' vocabulary learning and comprehension would be affected by displaying texts on a computer screen that provided the meanings of difficult words. Reinking and Rickman (1990) concluded that reading comprehension could be increased when computer-mediated texts are used to expand or to control options for acquiring information.

Kang (1995) conducted another study with elementary school students who had basic knowledge of the English alphabet and sentence structure. The instructional methods used for vocabulary learning were: "Paper and Pencil (P&P), Computer-based Word-for-word (CW), Computer-based word-for-word plus Picture (CP) and Computer-based Context (CC)" (p. 46).

In another study on the capability of instantaneous look-ups in on-line dictionaries, Tozcu and Coady (2004) conducted a case study that examined the outcomes in vocabulary acquisition when using interactive computer-based texts as opposed to traditional materials. Their results suggest positive implications of integrating technology in the language classroom for vocabulary development.

The idea of CALL approach to learning/teaching is also backboned by cognitive psychology. According to Hulstijn and Laufer (2001), "the more a learner pays attention to a word's morpho-phonological, orthographic, prosodic, semantic, and pragmatic features and to intra-word and interwork relations, the more likely it is that the new lexical information will be retained"(p.143). In the same line, Hulstijn and Laufer (2001) suggested Involvement Load Hypothesis. Their basic contention in this hypothesis is that “the retention of unfamiliar words is, generally, conditional upon the degree of involvement in processing these words” (p. 545).

Roby (1999), studied the effect of computer and paper modes of presentation on students of American learning Spanish and found that those who used an electronic dictionary looked up significantly more words than those who used a paper dictionary. Similar results were found by Aust et al. (1993) that those using the electronic reference had more than twice as many dictionary lookups as those in conventional modes.

Cook (2001) believes that being able to work out the meaning of a vocabulary is one thing, and remembering that vocabulary on future occasions is something else. In order to make the task easy for learners to remember vocabulary items in future occasions, CALL cues provide multiple retrieval cues by integrating different forms of mental representations.

What can be concluded from works in this field is that, effective teaching should include tasks which direct the learners’ attention to the words targeted for instruction and provide rich enough inputs in different modalities to support different language learning strategies.
3. METHODOLOGY

3.1. Research Sample

This study was conducted with selection of a sample of 90 Iranian Translation students majoring in English language translation based on non-random judgment sampling among the first and second year students who entered university for their undergraduate studies. Participants were selected based on a given TOEFL vocabulary test (Farhady and Moradian, 2001), to indicate their level of proficiency as well as to make sure of their homogeneity. Then they were divided into two experimental and control groups based on their scores to provide appropriate rank scale (i.e., based on (Richards and Schmidt, 2002)). Experimental group (n=45) worked synchronous mode and the control group (n=45) dealt with asynchronous mode peer feedback in learning vocabulary. The participants comprised of female and male students ranging from 18 to 47 years old.

3.2. Instruments

A pre-test containing the actual test items was administered to the participants before treatment in order to determine how well the participants are homogeneous. The participants were asked to answer 40 multiple-choice vocabulary items in 30 minutes selected from TOEFL vocabulary test (Farhady and Moradian, 2001). The reliability coefficient of the pre-test in this research was calculated by Kuder-Richardson formula (KR-21). The reliability coefficient for the pre-test was 0.76.

After the students had covered the eight passages given to them during the treatment time to be read for the sake of comprehension, there was a post-test right after the end of the course; there was a multiple question test asking the meaning of the new vocabulary items learnt in those sessions. The purpose of this test was to decide on the immediate retention of the vocabulary in both groups. These 40 items were selected from words picked out meticulously from the course passages introduced in materials' section. The reliability coefficient of the post-test calculated by Kuder-Richardson formula (KR-21) was 0.74.

3.3. Remedial Materials

The participants in both groups were exposed to the first eight chapters extracted from Select Readings: pre-intermediate (Lee and Gundersen, 2002) respectively. It included CDs. Each chapter which was taught weekly consisted of the main passages, mono dictionaries, annotations, maps, different types of exercise, and culture and language notes. The aim of these parts was to facilitate learning and to provide rich input on the account of learners to measure their vocabulary retention.

3.4. Procedure of the Course

Since this comparative study is consisted of the same approach to vocabulary retention, the material used for the purpose of this study was the same for both groups except for the difficulty level of passages, for this reason two levels of passages were used, namely, select readings:
intermediate and select readings: pre-intermediate levels. The participants in experimental and control groups met with the researcher once a week at a computer lab separately, where in the first session, each was asked few questions about their background knowledge of asynchronous CALL program. Then a brief introduction to the program, its objectives, and its method was given to them to make sure they understood the importance of the study. The investigator also informed the participants that program allowed them to hear the selected word pronounced, read a definition, and see either a picture or a video clip. They were also told that they could consult the annotated words whenever and as many times as they wished. To make sure everyone had at least studied the passages for one time and in order to expedite the process, the instructor used a CD player available in the lab to play the audio track for the passages so that the students have a chance to hear the words pronounced by a native speaker for 15 minutes. After playing the audio track for each passage, the students were asked few comprehension questions to make sure that they have understood the text. Students were given time to look up the meaning of the unknown words and read the passage for themselves, using the multimedia program which contained multimodal annotations for the vocabulary items. Participants spent approximately an hour reading the passages. When students came to a word or phrase they did not understand, related information about that word was presented to them by clicking on that word or typing that word in electronic dictionary. Textual annotations which were presented were consisted of phonetic transcription of the vocabulary, part of speech, American or British pronunciation, meaning of the vocabulary (either by mono- or bilingual dictionary), and few example sentences for the intention of creating greater exposure to the intended vocabulary. It should be noted that the procedure for both groups was exactly the same except for difficulty level of books taught during the 10 sessions. After the students had covered the eight chapters which were taught during the treatment time, there was a post-test right after the end of the course; the purpose of this test was to decide on the immediate retention of the vocabulary in both groups. This forty-item-test was selected from words picked out meticulously from the course chapters.

4. RESULTS

The data collected from both groups in pre-test, immediate post-test and delayed post-test, then the results of each group were separately submitted to statistical paired samples t-test to find out whether asynchronous CALL program had any impact on the participants' vocabulary retention in short and long run. It should be noted that the data were analyzed through SPSS 11.5 version. Descriptive statistics of pre-test of the experimental and control groups were respectively computed. The results indicated partially equal performance on the tests among the groups as they are presented in Table 1.

Table 1. Descriptive analysis (Pre-test)

<table>
<thead>
<tr>
<th>Tests</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>45</td>
<td>13.8889</td>
<td>4.22236</td>
</tr>
<tr>
<td>Control</td>
<td>45</td>
<td>13.3778</td>
<td>3.88054</td>
</tr>
</tbody>
</table>
Table 1 shows that the mean of pre-test of the experimental group is (13.8889) and the standard deviation (SD) is (4.22236) compared with the control group mean is (13.3778) and the (SD= 3.88054). Since descriptive statistics could not offer the researcher valid information to reject or sustain the null hypothesis, an Independent Samples \( t \)-test was run in Table 2 which observed differences between the groups is significant.

<table>
<thead>
<tr>
<th>Tests</th>
<th>N</th>
<th>( t )</th>
<th>df</th>
<th>( P )</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental vs.</td>
<td>45</td>
<td>.598</td>
<td>88</td>
<td>.551</td>
<td>.51111</td>
</tr>
<tr>
<td>Control</td>
<td>45</td>
<td></td>
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As indicated in Table 2 the mean and the SD of pre-test in experimental group are compared with the mean and the SD of the control group. Both groups performed almost similarly in the pre-test which showed that they were homogenous before the treatment. At the end of the treatment sessions, the participants took a post-test on vocabulary achievement gained in the treatment course. Results of the post-test are shown in Table 3.

Table 3 shows that the mean of post-test of the experimental group is (18.7778) and the standard deviation (SD) is (1.29408) compared with the control group mean is (14.6000) and the (SD=.59831). The means are put in Table 4 of the Independent Samples \( t \)-test to show the differences between the performances between two groups.

<table>
<thead>
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<th>Mean</th>
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</tbody>
</table>

Table 4 indicates that the observed \( t \) is 2.930, which is greater than critical \( t \) (1.980). \( t \)-test analysis indicated that there was a difference between the post-tests. In other words, the null hypothesis was rejected at significant level (\( p< .05 \)).

In short, results showed that the mean score of each group in the pre-tests and post-tests were significantly different. A brief comparison showed that the experimental (i.e., asynchronous) group outperformed the synchronous (i.e., synchronous) group in the post-test.

### 5. DISCUSSION

Putting aside the pre-test, which was administered to the participants at the beginning of the treatment for indicating their post-test, was administered to the participants immediately after
they finished the treatment to check the learners’ vocabulary retention. This test was a multiple-choice test asking the meaning of the new vocabulary items learnt during the treatment sessions. Then the participants were given two weeks off and then the delayed post-test was administered to check their long-term memory. Therefore, experimental group were learning vocabulary more effective than the control group due to the data analysis. In other words, there was a significant difference between them. The experimental group in the treatment period could be enhanced through the retention of vocabulary items concerned with their gained scores. Therefore, it could be accounted for the effects of asynchronous CALL programs on learning style of language learners. To clarify the point, experimental group as compared to the control group, might rely on vocabulary knowledge more than low achievers do. We may argue that high achievers learning habits such as practicing and reviewing of what they learnt during the treatment helped their vocabulary retention and storage of data in their long-term memory. On the other hand, since experimental group are more experienced than the control group in utilizing the computer, this might cause the partially success of experimental group in using computer for searching vocabulary annotations. In the review of literature section, a number of studies support the results of the study namely the importance of vocabulary knowledge, among them, Bernhardt (2005) in support of the importance of word knowledge claims that "the more word knowledge is developed, the more it frees up resources to operate on more complex syntactic patterns"(p. 140). Yoshii and Flaitz (2002), point to vocabulary learning as a vital part of each student’s life which develops their further vocabulary storage. The studies conducted by Lomicka (1998) agree with the findings of the present research. Reliance too much on printed text than computer; the control group by their nature as younger learners was not familiar to the new technologies (Chun and Plass, 1996). Lack of experience in reading comprehension because of freshness; since the low achievers in this study were mostly of freshmen, they had not yet developed their reading strategies; and the control group were thinking of passing the exams. Thus, they focused on short-term memory rather than long-term memory.

6. CONCLUSION

The present study investigated the role of CALL approaches in teaching vocabulary among pre-intermediate translation students developing their vocabulary retention. Mean differences and t-test analysis indicated that the experimental group gained much better benefit from CALL approaches rather than the control group. The focus of this study was twofold: studying the effect of CALL approaches and the use of CALL in teaching vocabulary. Pre-intermediate experimental group outperformed the control group in vocabulary retention of the post-test while the control group did not well in the post-test (p<.05). Findings revealed the appropriate use of CALL approaches among experimental group rather than control one. This study indicated that high achievers learning habits and computer literacy as well as their vocabulary storage helped them to gain much benefit from CALL approaches in long-term periods (Chen et al., 2004). In contrast, the control group were relying on their printed materials and trying to be ready to pass the immediate exam. Therefore, this habit may affect their performance in taking the post-test.
In short, this study contributes in the existing literature through CALL approaches and it could be used for teaching vocabulary in both synchronous and a synchronous modalities among the translation students. However, these approaches should be used with care due to the lack of reliability of using computer in helping the other levels other than pre-intermediate students.

**Funding:** This study received no specific financial support.

**Competing Interests:** The authors declare that they have no competing interests.

**Contributors/Acknowledgement:** All authors contributed equally to the conception and design of the study.

**REFERENCES**


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