

THE ROLE OF WEB-BASED GRAMMAR INSTRUCTION IN TERTIARY LEVEL EFL STUDENTS' ACADEMIC ACHIEVEMENT

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Abstract. *Recent technological advances have raised the issue of how to integrate technology into language classrooms. With the emphasis on student-centred learning, the applications of the computer have enhanced not only the input but also the output in language teaching and learning. This study is an attempt to find out the role of a web-based grammar instruction system in students' grammar achievement and students' perceptions about the system. This web-based grammar instruction was provided via an online grammar lab serves as a blend of the coursebook, online, and mobile sources. It has three level series; however, for the present study its intermediate level was used. The study was conducted at the Department of English Language and Literature at a major university in north-eastern Turkey throughout the academic year 2012-2013. English-majoring students with access to the online grammar lab were assigned as the experimental group (n=73), and the students who take grammar instruction in traditional whole-class environment as control group (n=57). While four achievement exams served as the quantitative data gathering instrument of this one-year quasi-experimental study, an open-ended questionnaire was conducted with 53 voluntary students so as to gain more insights into the use of web-based grammar instruction.*

Key words: *CALL, ELT, grammar, innovative, computer, web-based instruction*

1. INTRODUCTION

Twenty first century could be characterised as a fast-evolving era where information and communication technologies such as e-mail, chat, software, podcasts, web blogs have implications for education, as well as other domains in that the expanding presence of these technologies has transformed all aspects of education including syllabus design, classroom setting, teachers' role, the expectations from students, teaching techniques, to name just a few. Among these technologies, especially computers have affected how and what practitioners should teach in their classrooms. Furthermore, the fascinating array of options offered by computer technologies urged scholars to develop a kind of teaching pedagogy referred as 'computer-assisted language learning' (CALL).

2. REVIEW OF LITERATURE

The development of CALL dates back to 1960s, and after the invention of personal computers towards the end of 1970s, CALL gained much ground and broadened its field in the 1980s (Akbulut, 2008; Davies, 2002; Gündüz, 2005; Kayaoglu, Akbaş & Öztürk,

2011). There are numerous definitions of CALL in the existing literature; however, it is succinctly defined by Richards and Schmidt (2002) as “the use of a computer in the teaching or learning of a second or foreign language”. However, Richards and Schmidt (2002) elaborate on this brief definition, and list three groups of activities, which CALL may take the form of. The first group includes activities which “parallel learning through other media but which uses the facilities of computer” (p. 101). Using the computer to present students with a reading text can best exemplify the activity. The second form of activities includes the “extensions or adaptations of print-based or classroom based activities” (p. 101). Using computer software to teach writing or making use of online programs such as Wordchamp to prepare online flashcards, quizzes, and collaborative conversations (Loucky, 2007) can serve as two examples. And lastly, Richards and Schmidt (2002) list the activities which are “unique to call [CALL]” (p. 101), and give the interactive video as an example.

The plethora of the related literature on CALL suggests that the CALL pedagogy actually passed through three stages: Behaviourist CALL, Communicative Call, and Interactive CALL (Warschauer & Healey, 1998). Behaviourist CALL (between 1950s and 1970s) characterises repetitive language drills, grammatical explanations and translations where computers were employed as mechanical tutors. The second stage of CALL, Communicative CALL (the late 1970s and early 1980s) recognized learning as a process of discovery, and focused on the meaning of language in use rather than on its forms. Lastly, Interactive CALL emphasized the authentic use of language in meaningful context. The integration of skills was emphasized for the sake of actual communication (Akbulut, 2008). The existing literature shows that although the focal concern of CALL is the use of computers to enhance students’ learning experiences. The integration of rapid advances in information and communicative technologies into the classrooms has a number of advantages. Chapelle (2005) suggests that computers modify language input, and help learners comprehend the input better and this seasoned input makes the process of vocabulary and grammatical forms acquisition much easier for learners. Chapelle (2005) further adds that CALL expands the range of tasks that teachers can develop as either in class or homework tasks (e.g., e-mailing, writing on a web blog, answering a text message, recording one’s own voice and sending it to the teacher via mobile phones or e-mails, etc.) The other possible transformations of computer-assisted language learning that Chapelle (2005) lists include providing new testing ways for high-stakes tests, and accelerating globalization and putting English in a global context.

There are a number of figures which lengthen this advantage list. For example, Lai and Kritsonis (2006) postulate that CALL provides more independence for learners, increases learner autonomy, and allows them to work on their learning whenever and wherever they wish. They add that CALL leaves the teacher more time to concentrate on other aspects of language education, such as pronunciation, spoken dialogue, etc. Furthermore, Lai and Kritsonis (2006) argue that CALL has some potential affective benefits, such as providing a lot of fun activities, reducing the learning stress, building self-confidence and resulting in higher self-esteem. It is inextricable that all advances have both weaknesses and strengths, and computer-assisted language learning is no exception. The frequently stated barrier inhibiting the practice of CALL is its financial barrier (Gündüz, 2005; Lai & Kritsonis, 2006; Lee, 2000). These financial barriers include the high cost of hardware, software, regular maintenance, and the training of staff at school. Lai and Kritsonis (2006) even claim that all these financial barriers harm the equity of education. Students

with low income and schools with low budget cannot keep pace with all these advances, and this causes unfair educational conditions for the poor. The second barrier is the lack of technical and theoretical knowledge (Lai & Kritsonis, 2006; Lee, 2000). No teacher or student can utilize the aforementioned advances in information and communication technologies if they lack the necessary training in the uses of these technologies. As stated by Chapelle (2005), this barrier has a tendency to shape the profession as a whole. In Chapelle's terms (2005), the integration of technology into the classrooms has "implications for how and what future teachers are taught in programs for teacher education" (p. 746). There are a great number of studies on the role of technology integration into education in language teaching. Naba'h (2012) who conducted a quasi-experimental study with 212 secondary school students in Jordan found that a software instructional program developed by the researcher significantly improved students' grammar performance and achievement in passive voice. Similarly, the project by Lan, Hsiao & Chiang (2010) with 90 university freshmen in Taiwan concluded that computers enhanced students' motivation and participation in grammar course. However, the study of Vlugter, Knott, McDonald & Hall (2009) with 73 students came up with different results in the sense that students attending CALL tutorials on the Maori personal pronouns were found as successful as the ones in traditional class in immediate post-test. Also, they performed worse in the delayed post-test. Possible reasons attributed to printed worksheets, the different environments of teaching and testing, the support of teacher, and cognitive effort of the experimental group. In addition to grammar-focused studies, there is a body of research regarding the role of technology integration into other language skills. For example, the longitudinal field experimentation study of Hui, Clark, Tam and Miltons (2007), who compared the effectiveness and satisfaction related to technology-assisted learning with that of face-to-face learning, found that the effectiveness of CALL depends on the target knowledge category. The use of technology-assisted learning supported vocabulary and grammar learning; however, it was found less effective in enhancing listening comprehension skills, which require human interaction. The issue has interested Turkish scholars, too. For example, the study of Kayaoğlu et al. (2011) showed that although there was no statistically difference in scores of achievement tests between the control and experimental groups, the experimental group working on vocabulary by watching animations outperformed the control group which working on vocabulary on paper. With their own words, their study "supports the idea that multimedia applications can be integrated into language classes not as an alternative way but as an additional way to contribute positively to the atmosphere of class and motivation of students" (Kayaoğlu et al., 2011, p. 24).

In addition to the experimental studies aforementioned, there are surveys which explore the attitudes of students towards computer integration into the classrooms. For example, the survey of Genç and Aydın (2010), with 126 students of English as a foreign language at a preparatory school showed that EFL learners had a high level of motivation towards computer use in language learning process. Genç and Aydın (2010) concluded that students' beliefs are one of important variables in the rise of motivation, and the more the students believe that English is worth learning, the more motivated they become during computer-assisted language learning process. In the same vein of aim, Akbulut (2008) carried out a survey with 55 freshmen students at a Turkish state university. His findings conform to the results of Genç and Aydın (2010) in that the participant had "positive attitudes towards CALL because of computers' potential to sustain independence,

learning, collaboration, instrumental benefits, empowerment, comfort and communication” (Akbulut, 2008, n.p.). The present study aims at finding out the role of computer integration on grammar achievement of student. The existing literature proves the central place of grammar in language teaching (Farrell & Particia, 2005; Richards, Gallo & Renandya, 2001). On the other hand, as it consists of a lot of rules, it may be regarded as a boring language sub-skill. Therefore, technology-integrated pedagogies are believed to add colour to monotonous, frustrating and boring grammar teaching (Ellis, 2003), encourage students to take the ownership of their own learning (Brown, 2002), and help students learn more efficiently and effectively on their own at their own pace with various materials (Naba’h, 2012).

3. THE RESEARCH DESIGN

Investigating the role of a web-based grammar instruction system in students’ grammar achievement and students’ perceptions about the system, this quasi-experimental study conducted at the Department of English Language and Literature at a major university in northeastern Turkey throughout the academic year 2012-2013. English-majoring students with access to the online grammar lab were assigned as the experimental group (n=73), and the students who take grammar instruction in traditional whole-class environment as control group (n=57). Volunteer students among the experimental group were invited to the open-ended questionnaire (n=53). The students attended the study in the framework of grammar class which was held four hours per week throughout the year. The students in the experimental group followed the course via the online grammar instruction system in addition to the face-to-face grammar class. In the following section detailed information about the system is presented.

3.1. Web-based Grammar Instruction System

The system that the experimental group used in the current study belongs to an international ELT publishing company. In their website, the system is described as a blend of coursebook, online, and mobile sources. It requires registration for a username and password. The system has various tests such as diagnostic, progress, catch-up and exit tests; grammar tutor videos, pronunciation exercises, listen-and-check parts, and practice exercises. It helps students to take the control of their own learning as they can learn and practice grammar at their own pace and according to their individual needs. In addition, it prepares students for internationally recognized exams within the framework of Common European Framework. What is worth noting about the system is that it provides immediate feedback, detailed report of students’ performance and automatic grading. Furthermore, teachers can select whichever assignment they want to assign, select the target student, and set the due dates that help students manage their time with its countdown system. Lastly, the system enables a two-way communication between the teacher and students via its messaging function.

In the present study, one of the researchers teaching the English grammar assigned tests after the completion of each module in the coursebook. She set due dates and sent messages to all students to remind them the requirements and help them manage their time.

3.2. Data Collection and Analysis Procedures

Four achievement grammar exams throughout the year prepared by the researchers and the experts in the field served as the quantitative data gathering instrument of this one-year quasi-experimental study. These exams cover the grammar content that is taught throughout the year and consists of different types of questions. To gain more insights into the use of web-based grammar instruction, an open-ended questionnaire was conducted. In this questionnaire, the participants responded questions regarding the weak and strong sides of the online grammar system, its role in grammar learning and achievement and they were asked about their experiences, feelings and opinions about the system. The questionnaire was administered online. As for the data analysis, independent samples t-tests were employed to compare the exam scores of the students by using SPSS 16.0. Content analysis was used to analyze the responses to the questionnaire by identifying code and categories. In order to ensure the reliability and the validity of the conclusions, the researchers employed member checks, peer debriefings during the data analysis process.

4. THE FINDINGS

The results of independent samples t-tests indicated that there exists no significant difference between the experimental and control group ($t(128)=2.45, p>.05$) in terms of grammar achievement.

Table 1 Independent samples t-test results for grammar achievement

	N	\bar{X}	Sd	df	t	p
Experimental	73	62.86	9.71	128	2.45	.298
Control	57	58.38	11.10			

However, as the group means were compared, it showed that the mean value of experimental group ($=62.86$) is relatively higher than that of the control group ($=58.38$).

When it comes to the qualitative data analysis, the quantitative data results were supported in a way since most of the students also felt that the grammar system exerted no significant influence on their grammar achievement even if it contributed the students' learning grammar via various tests and practices. In addition to these results regarding grammar achievement, the students also shared some other problems that they experienced during the use of system. The excerpts pointed out some of these problems: "Although I bought an original coursebook and registered in the system, I had access problems. And this problem could not be solved. I could not use the system and it did not positively affect my grades. I could not use the system. I wish the teacher had not given Internet-based assignments. Because I have been staying at a dormitory, and have Internet access problems. I think it is not a suitable system for every single student" [Participant 47]

“An activation code was required to have an access in the system. To that end, we had to buy a very expensive original coursebook. Of course, buying an original copy is very useful, yet difficult. This, sometimes, negatively affected the relationship between the teacher and the students” [Participant 1]

In addition to the problems about the nature of online systems such as access, technical issues resulting in info loss, internet connection, the students also complained that there were so many details on the screen, the questions with their answers after the feedback were not given on the same screen and the students’ performances were not listed in a single way at the end. Internet connection and time management problems were among most often stated problems. The students were also unhappy about the system since they thought that it was expensive to buy an original copy and this was affecting negatively the relationships. Another problem was deadlines and being online regularly since most of them stayed in a dormitory with no internet access. It is also important to note that the students experienced the inability to use the system since they were accustomed to traditional way of learning with pen and paper. The system was thus considered inappropriate for the students without digital literacy.

There were also common points in the responses in terms of facilities that system provided. The students were quite positive about the system since it helped them to prepare for the class, to practice a lot with various types of tests, to correct their mistakes and to get immediate feedback. The students thought that it was colourful, user-friendly and enjoyable. Other commonalities in the responses were that it has categorized content with visual and auditory aids as it is presented below:

“Getting immediate feedback on our performance and seeing the difference between our first and second trial can show us how we have improve our grammar” [Participant 1]

“The system is really good and it has all the opportunities as an organizational aid. In addition, the tutorials supported via auditory and visual aids are very useful. It plays an important role in the relationship between the teacher and the students and it is a good system to practise grammar” [Participant 5]

“In my opinion, it is both good and useful. Furthermore, we can use the system whenever we want, of course in the required time limits. The fact that we practice both at home and via mobile phone is an easiness for us. In addition, both the book and the questions on the side are high quality” [Participant 46]

As it is mentioned above, the students got the opportunity to access the system by their mobile phones which contributed to practice whenever and wherever they wish. The responses also suggested that the system aided them to build some habits such as studying regularly and paying attention to time management. Moreover, it developed a sense of responsibility and enabled the students to have control over their learning processes. According to the responses, all these aspects contributed to increase students’ motivation. Last but not least, thanks to this online grammar system, the students got the chance of keeping touch in teacher and thus strengthen the relationship.

5. DISCUSSION

The quantitative and qualitative analyses proved that there was no statistically significant difference between the experiment and control groups regarding the students’ grammar achievement scores, yet the experimental group’s mean value was slightly

higher. The findings of the present study seem to be in tune with the result of previous studies. For instance, the quasi-experimental study of Vlugter et al. (2009) with 73 students yielded that students attending CALL tutorials on the Maori personal pronouns were as successful as the ones in traditional class in immediate post-test. However, they performed worse in the delayed post-test. They argue that there are three possible reasons for the success of traditional teaching: better retention promoted by the existence of an interactive human teacher, state-dependent learning effect and novelty effect. First, the actual interaction between people is believed to help retention of target structures. Second, the students attending CALL tutorials in the lab were asked to remember the structures in the tutorial room, and this change of place was regarded as a disadvantage for retention. Lastly, the students in CALL tutorials made cognitive attempts to use the system; therefore, this extra attempt is believed to affect their success negatively. However, further studies are needed to draw a complete portrayal of the situation.

Although the present study reinforces the findings of Vlugter et al. (2009), it has yielded contradictory results with Naba'h (2012) and Lan, Hsiao and Chiang (2010)'s study in which there existed significant difference between experimental and control group in terms of achievement. Though the present study did not yield such a result, the participants were found to be quite optimistic about the web-based grammar instruction. Most of the participants stated that the software did not positively affect their grammar achievement, yet it enabled them to practise English in various contexts via its audio and visual materials. What seems to be worth of note for the present study is that the reasons for the experimental group not to demonstrate more grammar gains than the traditional group could be state-dependent learning and system requirements, as similar to the study of Vlugter et al. (2009). Both groups had traditional pen and pencil exams although student attending CALL tutorials practised grammar via computer. This difference could make the experimental group not to display their actual performance in the exam. In addition, the system required Internet connection and regular logins. Information loss and irregular attendance due to Internet access problems may have caused the participants to lose their motivation and this, in turn, might result in weak performance in the exams. The researchers fully endorse Dörnyei's (2005) argument that motivation is "the driving force to sustain the long and often tedious learning process" (p. 65), and without motivation good teaching, materials, curricula and so on are not enough for student success.

6. CONCLUSION AND IMPLICATIONS

The present study investigated whether computer-assisted grammar instruction could yield better results regarding academic success. Although the system appeared not to affect the students' achievement directly when their exam scores were taken into consideration, it seems that it contributed them in terms of autonomous language learning to some extent by providing interdependency and independence at the same time, enabling the students to control their learning processes. The participants also developed positive attitudes towards the integration of computers into language education.

The study findings outlined above support a number of implications that could serve well for better CALL applications in language classrooms. Teachers who want to integrate online computer-based instruction into their teaching should clearly explain the aims of

this integration at the very beginning of the application, as students in face-to-face education contexts where the teacher is seen as the basic knowledge transmitter may feel suspicious about the benefits of this integration and avoid cooperating with the teacher. In addition, the teacher should guide the students about the system and provide advices regularly as information loss caused by technical problems may demotivate the students. Furthermore, incentives such as small gifts (e.g., for the best performance of the week), or grades could yield a competitive atmosphere and motivate the students. In the course of using the system, the students' needs and problems should be taken into consideration and possible solutions should be presented. In a way, teachers should also play a role of mediator and facilitator.

It is important also to note that there are some limitations in the current study. The notion of achievement was limited to some grammar achievement exams; therefore, further studies could employ process-based rather than product-based assessment techniques. In addition, pre-test and post-test research designs could help researchers to compare the effects of CALL much holistically. Lastly, CALL applications could be extended to other skills as detailed comparisons between skills are believed to serve well for understanding the pros and cons of computer integration into language education.

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