EFFECTIVENESS OF TWO CORPUS-BASED APPROACHES ON TURKISH STUDENTS' LEARNING ENGLISH GRAMMAR

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ABSTRACT: The aim of this study was to compare two corpus-driven teaching approaches, Brigham Youth University-British National Corpus (BYU-BNC) and AntConc for teaching/learning grammar in terms of achievement in grammar learning, forming grammatical structure, self-confidence in using tenses and modals, reaction to corpus use, and opinions about overall assessment of the teaching approaches. The study has two experimental research designs: the static group pretest posttest design and the static group comparison design. The sample of this study was chosen from junior students in two sections of Computer Education and Instructional Technology department in Mustafa Kemal University. Before the study, each section was trained about how to use the corpus tools, AntConc (concordancer) and BYU-BNC (a web-based reference corpus). Five data collection tools were (1) achievement test (2) forming grammatical structure test (3) self-confidence test (4) questionnaire of reaction to corpus use (5) questionnaire of overall assessment of teaching approaches. The findings of the study revealed converging and diverging results, compared to related literature.

Keywords: Corpus linguistics, corpus-based teaching, corpus tools, grammar teaching

1. INTRODUCTION

Corpus linguistics, a methodology based on electronically collected texts, has opened up a new dimension in language research. According to Vannestal and Lindquist (2007), corpora (plural form of corpus) have been used for pedagogical purposes for more than two decades (p. 1). Corpus linguistics, providing authentic data with the help of electronic tools, helps researchers investigate language at hand and promote pedagogical understandings in English Language Teaching (ELT).

The reasons for increasing corpus use in ELT are the facilities of corpus tool functions that enable learners to investigate language through frequency value, concordance hits, expanded contexts, register types, and collocations. Different from traditional methods, corpus-based language learning/teaching methods provide learners with frequency value of lexical structures. Being familiar with frequency value, learners become conscious of when and in which context to use a lexical item. Furthermore, concordance view of corpus tools help learners in sorting the left and right lexical occurrences. By doing so, learners find out collocation matches of the search item and they learn language inductively. In case of split sentences, learners can shift to expanded context view, which help learners infer contextual meaning of the search item. Besides, corpus collections, especially big corpora like BYU-BNC, provide learners with various register choices. It supports language researchers and learners to discover different frequencies of lexical structures in different context and acquire a sense of spoken and written language.

While conducting a corpus based study, some issues such as the type and size of a corpus need to be considered. According to Evan (2006), type of corpus can be specified as, general, specialized, comparable, and historical. Similarly, size of a corpus is classified as small and large corpus. Discussions as to which corpus is suitable to use in teaching/learning English are generally closed at the use of small corpus by many researchers. However, pedagogical use of big corpus in classroom is ignored (Bernardini, 2011, p. 221). Considering representative feature of big corpus, it could be more beneficial to introduce high level students with various language samples.

Although there is not a certain consensus on whether to use small or big corpus in classrooms, corpus studies support language learning of students of English as a foreign language (EFL) or English as a second language (ESL). Findings of many studies with direct corpus consultation, carried out whether in
grammar teaching (Liu & Jiang, 2009; Liu, 2004) or in writing (Yoon & Hirvela, 2004; Cobb & Gaskel, 2004; O'Sullivan & Chambers, 2006), report gradual positive attitudes toward learning English with corpus and an increase in language awareness of students. However in the instance of Vannestal & Lindquist (2007) the attitudes of the students, especially in the first trial, was unexpected in that learning grammar with corpus was found more boring and more difficult, but slightly useful. The researchers postulated that the reason for the situation is at least some extrinsic, if less intrinsic, motivation. Common points in these studies are that participants’ English level mostly changes from intermediate to advanced level and research designs are either qualitative or quantitative except Yoon&Hirvela 2004, which includes both qualitative and quantitative research. In the literature of corpus-based studies, it is hard to find both qualitative and quantitative studies in one research. Furthermore, Zhao (2003) claims that studies remain small-sample size which makes it difficult to produce reliable quantitative data (as cited in Chambers, 2007, p. 5).

Angela Chambers (2007) points that the absence of beginners is noteworthy in corpus-based studies (p. 8). Possible reasons for the absence of beginners may be the fact that corpus consists of authentic language samples in nature, so dealing with such a complicated language system may make students to get lost in the naturally occurring texts. In addition to this, EFL beginner students need guided teaching in order to acquire basic grammar structures and enhance more complicated structures. Aston (2001), also states that it is important to note, however, that corpus driven learning may not be appropriate for beginners or low-level students due to their limited English proficiency (as cited in Liu & Jiang, 2009). However, considering Krashen's second language acquisition theory, beginner students need to interact with authentic language data, which may be provided with corpus-driven approach. When students do not expose to authentic language samples, they may perceive some sets of grammatical rules as fixed and this may cause fossilization in learning English. In this sense, exposing to authentic English and producing native-like English through corpus are of significance for many EFL students as beginners or intermediate ones.

Traditional language teaching methods are likely to be more effective through corpus-driven approach. For example, grammar translation method is a well-known one. Essentially, students are given literary texts and they are made to translate these texts. In return, they memorize vocabulary and grammatical structures derived from these texts. As Griffiths and Parr (2001) describe the method is heavily relied on teaching grammar and practicing translation as its main teaching and learning activities. On the other hand, the method is isolated from speaking and writing. One profit of adapting this approach with corpus is that EFL students frequently consult for translation in understanding written language; therefore, in translating authentic languages, EFL students expose to real English and make use of grammar. As Liao (2006) proposes learners very often use translation as a learning strategy to comprehend, remember and produce a foreign language (p. 192). When this method is improved with authentic language samples and electronic tools of corpus, learners benefit from various registers including spoken language.

In this present study, it was investigated how EFL students benefited from corpus-driven approach with grammar translation method in learning English grammar. Different from grammar translation method, learners developed a student-centered learning strategy and they were exposed to authentic language through corpus tool facilities. It was aimed to enhance students’ grammar knowledge and translational skills by using corpus, which raises students’ awareness about authenticity and changes fossilized grammatical rules.

2. METHODOLOGY

2.1. Sample

The study was carried out in Mustafa Kemal University, Education Faculty, department of Computer Education and Instructional Technology (CEIT). Subjects had never been interacted with corpus methodology and they were composed of two freshman sections; daylight (44) and evening (43). Although majority of the subjects were composed of low-level students, few of them were intermediate ones. Being enrolled to CEIT department, subjects are already computer literate and interested in using electronic tools. We randomly assigned the two teaching tools (AntConc and BYU-BNC) to the sections. General demographic information of subjects is given in presented Table 1. As can be seen, they are similar.
Table 1: Demographic information of Samples.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Mother Tongue</th>
<th>GPA (Grade Point Average)</th>
<th>First term English Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Turkish</td>
<td>4.00-5.50</td>
<td>AA</td>
</tr>
<tr>
<td>Female</td>
<td>Arabic</td>
<td>3.49-3.00</td>
<td>BA</td>
</tr>
<tr>
<td></td>
<td>Kurdish</td>
<td>3.00-2.50</td>
<td>BB</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>Less than 2.00</td>
<td>CC</td>
</tr>
</tbody>
</table>

2.2. Corpus Tools and Corpus Training

In this study, two teaching approaches, AntConc and BYU-BNC, were used. AntConc is a freeware concordancer that is used with specialized or small corpus and it is not a web-based tool, thus we collected 160,000 words of corpus from children's books which can be downloaded as plain text from project Gutenberg free e-books site. We used the books in the sense that language of such books is more suitable for beginner students. Considering the register variety of both teaching approaches, BYU-BNC include more than seventy registers, but the corpus we collected was composed of three registers: fiction, academic and historical texts. On the other hand, BYU-BNC is a large web-based corpus with 100,000,000 words. The reasons for using both teaching approaches were to compare the effectiveness of small and large corpus and to make use of the common features of the tools. A training program including what corpus is how it is used and how students benefit from it was done for three weeks. In carrying out the lessons, we used common features of the tools. In the introduction session of the training, we informed students about key terms that will frequently be used in the lesson such as corpus, concordancer, part of speech etc. The instructor explained the functions of sample queries and encouraged students to make similar queries.

2.3. Teaching Procedure

The English courses in Turkish universities are mandatory lessons for all freshman students. Therefore, we continued to follow the curriculum of the first term. English lessons took place at the faculty's computer laboratory with internet connection. While doing the lessons, students were guided to make inferences from concordance lines and after a while their findings were discussed in the class. Note that students' English competence was low, so they were in serious need of understanding the meaning of the sentences; therefore, at the beginning of the lesson students consulted to translation frequently. While explaining grammatical structures, students’ attention was taken to the two words that occur on left and right side of the search term. By doing so, it was attempted to form grammatical rules by raising consciousness on frequently occurring words around the search term. Instances that did not match with the rule were discussed and their language awareness level was aroused. Students interpreted the concordance lines through whole class and pair discussions. Students were given translation tasks at the end of each lesson, by which we aimed to help students improve interpretation skills. The interaction between the students-the instructor (in-class activities) and students-the instructor (in assignments) were existent. The students were given oral feedback in class and written feedback for assignments after the sessions.

2.4. Data Collection Instrument

2.4.1. Achievement Test

In developing an achievement with multiple choices, test we intended to see whether there is any difference in learning tenses (past simple, past progressive, present perfect, simple future and to be going to) and modals (ability, necessity, obligation and permission) within and between groups. Also, we used the achievement test to compare the tools in terms of effectiveness in teaching grammatical structures. In preparing the questions, we considered the steps in Bloom's taxonomy of cognitive domain for instructional objectives which are; knowledge, comprehension, application, analysis, synthesis and evaluation. It was composed of fifty four questions and was used as pre and posttest.
2.4.2. Forming Grammatical Structure Test

In developing the test, we were motivated by discovering whether there is any difference in the achievement of students' forming grammatical rules such as tenses (past simple, past progressive, present perfect, simple future and to be going to) and modals (ability, necessity, obligation and permission). The test was designed to measure the effect of part of speech (POS) query in acquiring grammatical rules. The POS codes at both teaching methods were different, so two different forms were prepared for each group. The questions were asked in a way that reminds the grammatical rules. For example, it was asked that "which of the POS code help us find the rule about using enough?" In order to choose the correct item, students need to remember with which grammatical words enough is used, which evaluate the competence of forming grammatical structures. The test was given to subjects at the end of the term.

2.4.3. Demographic Information Questionnaire and Self-confidence Test

The demographic information questionnaire was organized to have information about subjects' English background, self-confidence in using English, and computer use. We adopted the questionnaire from Yoon and Hirvela (2004). Essentially, it is composed of three parts. In the first part, we asked common questions about gender, age, grade point average, first term English grade etc. In the second part, students were asked to evaluate how confident they feel about using the grammatical structures in written English. This part is given to the students as pre and posttest. In the third part, students' frequency of computer use, software language choice, having personal computer, accessing internet connection, electronic and paper-back dictionary use and having heard of corpus sources were asked.

2.4.4. Questionnaire of Reaction to Corpus Use

The attitude questionnaire was also an adaptation from Yoon and Hirvela (2004) study of ESL student's attitudes toward corpus use in second language (L2) writing. We translated questions into Turkish and adapted those about writing into grammar questions. Since there were two different corpus tools, we produced two questionnaires because some items displayed difference in terms of corpus tools. The questionnaires were organized in a seven points likert-type scale and administered as pre and posttest. The choices of the questionnaire were 1: strongly disagree, 2: disagree, 3: somewhat disagree, 4: somewhat agree, 5: agree, 6: strongly agree, and 0: No idea.

2.4.5. The Overall Assessment of Corpus Work Questionnaire

The questionnaire was prepared to have thoughts about students overall assessment of corpus use. It was composed of five questions. We derived the questions from the study of Liu and Jiang (2009). Similar to reaction to corpus use questionnaire, it is a seven point likert-type scale. Furthermore, this and the previous questionnaires translated to Turkish and reviewed by a Turkish Teacher.

2.5. Data Collection Procedure

At the beginning of the term, students filled demographic questionnaire as pretest form. After they learnt how to make corpus search and the first grammar topic was taught, then learners took achievement test as pretest. Since the first topic, adjectives, was studied before the achievement test, we excluded it from the pretest. After the first few weeks of second term, students took reaction to corpus use questionnaire as pretest. At the end of the second term, students took all posttests of achievement, self-confidence in using grammatical structure, forming grammatical structure, overall assessment of corpus-based teaching approaches, reaction to corpus use, since corpus teaching process was completed.

2.6. Data Analysis Procedure

At the end of the term, the researchers collected data from five data collection instruments. However, the number of subjects at both groups was not equal in pre and posttests; therefore, the students taking both pre and posttests were remained. Then, the data was analyzed in SPSS program. In order to make comparisons of within and between groups, paired sample t-tests and independent samples t-test were respectively conducted. We set the alpha level at .05.
3. RESULTS

1. By sorting concordance lines in AntConc and BYU-BNC, is there any difference in each group’s pretest and posttest mean scores of learning grammatical structures?

A paired-samples t-test was conducted to evaluate whether there was any difference in students’ learning grammar through corpus tools during the second term. Results for BYU-BNC group indicated that there was a significant difference in the scores of pretest (N = 41, M = 47.22, SD = 17.05) and posttest (N = 41, M = 58.86, SD = 16.37); conditions t (40) = -6.66, p = .000. Similarly there was a significant difference in the scores of AntConc for pretest (N = 41, M = 44.86, SD = 15.59) and posttest (N = 41, M = 57.38, SD = 18.65); conditions t (41) = 5.53, p = .000. It was observed that the two corpus tools increased the achievement of learning grammatical structures in each group respectively.

2. Which of the teaching approaches is more effective in increasing students’ learning grammatical structures?

An independent samples t-test was conducted to compare the pretest achievement of both groups after corpus training. Accordingly, there was no significant difference in pretest results for BYU-BNC group (N = 41, M = 47.22, SD = 17.05) and AntConc (N = 42, M = 44.86, SD = 15.59); conditions t (81) = .66, p = .512. Therefore, the groups were accepted as homogenous before the treatments. To compare the posttest scores of the groups, another independent samples t-test was conducted. The results revealed that there was no significant difference in the groups of BYU-BNC (N = 41, M = 58.86, SD = 16.37) and AntConc (N = 42, M = 57.38, SD = 18.64); conditions t (81) = .383, p = .703. When posttest scores considered, it was seen that both groups had similar means with no significant difference. In other words, both groups displayed similar progress in learning grammatical rules.

3. Through part of speech (POS) query in BYU-BNC and AntConc, is there any difference in the success level of forming grammatical structures between groups?

An independent samples t-test was conducted to evaluate whether POS query helped students at both groups form grammatical structures. The results displayed that there was a significant difference in posttest of forming grammatical structures of the groups of BYU-BNC (N = 41, M = 69.71, SD = 21.56) and AntConc (N = 43, M=82.86, SD = 20.39); conditions t (82) = -2.87, p = .005. It can be derived that subjects who used part of speech query functions in AntConc was more successful in forming grammatical structures than BYU-BNC group. In other terms, POS quality of the AntConc corpus tool was more helpful in forming grammatical structures than that of BYU-BNC.

4. Does each corpus tool improve the self-confidence of students in:
   a. using tenses, such as past simple, past progressive, present perfect, simple future, and to be going to?
   b. using modals, such as ability, necessity, obligation, and permission?

Paired samples t-tests were conducted to evaluate whether there were any differences in students’ self-confidence in using tenses and modals before and after the treatment. The result for tenses suggested that there was no significant progress for BYU-BNC group, pretest (N = 37, M = 51.11, SD = 33.67), posttest (N = 37, M = 58.11, SD = 25.75); conditions t (36) = -1.535, p = .134. Compared to mean values, there was an increase in students’ self-confidence, but it was not significant. Similarly, there was no significant progress in the AntConc group, pretest (N = 32, M = 54.94, SD = 31.39), posttest (N = 32, M = 58.91, SD = 30.63), conditions t (31) = -.731, p = .466.

As for modals, the results of paired samples t-test revealed that there was no significant progress for BYU-BNC group, pretest (N = 36, M = 46.81, SD = 28.56), posttest (N = 36, M = 56.81, SD = 26.84); conditions t (28) = -.087, p = .932. The paired sample t-test results for AntConc group was not significant either, (N = 32, M = 43.41, SD = 30.04), posttest (N = 32, M = 43.75, SD = 28.40); conditions t (29) = .24, p = .812. This means that the self-confidence of AntConc group did not change. To sum up, both tools were ineffective in increasing the self-confidence of using tenses and modals in written English.

5. Which tool better improves the self-confidence of students in
   a. using tenses, such as past simple, past progressive, present perfect, simple future, and to be going to?
   b. using modals, such as ability, necessity, obligation, and permission?
An independent samples t-test was conducted to compare the groups about understanding which corpus tool better improve students' self-confidence in using modals and tenses in written English. There was no significant difference for pretest results of tenses in BYU-BNC group (N = 40, M = 50.78, SD = 32.39) and AntConc group (N = 36, M = 52.31, SD = 32.19); conditions t (74) = .855, p = .396. Similarly, there was no significant difference between groups for the initial self-confidence levels in modals: the BYU-BNC group pretest results (N = 40, M = 47.13, SD = 30.87) and AntConc group (N = 36, M = 41.22, SD = 29.25); conditions t (74) = .86, p = .40. Therefore groups were accepted as homogenous in terms of confidence in using tenses and modals at the beginning of the study.

As for the posttests for tenses and modals, independent samples t-test results of tenses showed that there was no significant difference between the groups, BYU-BNC (N = 38, M = 59.10, SD = 24.76); AntConc (N = 40, M = 58.49, SD = 31.22); conditions t (80) = .098, p = .922. Likewise, there was not a significant difference in posttest results of modals for the groups of BYU-BNC (N = 38, M = 56.32, SD = 26.45); AntConc (N = 43, M = 45.93, SD = 29.51); conditions t (79) = 1.659, p = .101. To evaluate descriptively, BYU-BNC group seemed to feel more confident in using modals. Considering the within and between pretest and posttest results, it was seen that both teaching approaches did not create any difference in the subjects' self-confidence in using tenses and modals in written English.

6. What are the reactions of students toward corpus use in learning English grammar?

Two paired samples t-tests were conducted to evaluate whether there was any difference in students' attitude toward using corpus in learning English grammar before and after treatment. The results for BYU-BNC suggested that there was a significant decrease in their attitudes toward learning English grammar with corpus, pretest (N = 30, M = 4.05, SD = .57), posttest (N = 30, M = 3.72, SD = .68); conditions t (29) = 2.5, p = .018.

As to the AntConc group, there was no significant improvement, pretest (N= 31, M = 3.78, SD = .56), posttest (N = 31, M = 3.49, SD = .79); conditions t (30) = 1.76, p = .088. It was seen that the attitudes of BYU-BNC group decreased more sharply than AntConc group although both groups' attitudes tended to decrease after corpus treatment.

An independent samples t-test was conducted to evaluate whether there is any difference in the initial attitudes of BYU-BNC and AntConc groups about using corpus in learning grammar. The result showed that at the beginning of the study the attitude of BYU-BNC group was higher than the AntConc group's, pretest for BYU-BNC (N = 30, M = 4.05, SD = .57), AntConc (N = 35, M = 3.77, SD = .56); conditions t (63) = 2.04, p = .046. To compare the attitudes of BYU-BNC and AntConc group after the treatment, an independent samples t-test was conducted. The results suggested that there was no significant difference in posttest scores, BYU-BNC (N = 40, M = 3.78, SD = .67) and AntConc (N = 40, M = 3.54, SD = .76); conditions t (80) = 1.51, p = .135.

7. What are the students' overall assessments of corpus-based teaching approaches?

In order to evaluate the teaching approaches, an independent samples t-test was conducted. The result suggested that there was no significant difference between BYU-BNC and AntConc group students' assessment of corpus use in learning English, BYU-BNC (N = 43, M = 3.05, SD = .62), AntConc (N = 44, M= 2.85, SD = .87); conditions t (77) = 1.26, p = .211. It was depicted that BYU-BNC group's overall assessment of the teaching approach was slightly more appreciating, but with no significant result.

4. DISCUSSION CONCLUSION AND IMPLICATIONS

The distinctive features of the study are derived from the sample being low-level students and teaching approaches in which small and big corpus were used simultaneously, which is a deficiency in the literature. Compared to common points reached in literature such as an increase in attitude and language awareness, we have divergent results. To start with achievement test, we expected an increase in learning grammatical structures and this was realized. Regarding the results of achievement test, the increase in their progress happened within groups and there was no significant difference between groups. This can be interpreted as corpus, be it of small or large, assists students in learning grammatical structures.

Another achievement was recorded in acquiring the forms of grammatical structures through POS query. When two groups compared, AntConc group showed higher success. AntConc, being a freeware concordancer, is a more user-friendly tool and it is very easy to use the POS codes. On the other hand, POS codes in BYU-BNC are more complicated. Therefore, it can be postulated that AntConc group is more successful in acquiring the forms of grammatical structures. Still, the obtained achievements did not
affect students' reactions to corpus use even there was a little decrease in their attitude to use corpus, so having been successful in achievement test may not be a sign of positive reflection.

Several studies (Yoon & Hirvela, 2004; Liu & Jiang, 2009; O'Sullivan & Chambers 2006, Gaskel & Cobb, 2004; Vannestal & Lindquist, 2007) reported a positive attitude toward learning English with corpus, especially in writing; however, this was not corroborated in this study. Despite the success of both groups in the achievement tests, the attitude of BYU-BNC group was decreased significantly in our case, which was an unexpected result. As for AntConc group, no increase in attitudes was recorded, which was unexpected result, either. The reasons may be stemmed from students' not understanding enough how to derive conclusions from concordance lines, since many students were used to have courses in their background education with deductive learning. Most of them requested from the instructor to give the rule and use corpus for investigation. It was until the instructor changed the inductive teaching into deductive one, then students started to actively participate in the class. As Vannestal and Linquist (2007) point, this may be the result of not getting used to think inductively. Another reason of low attitudes of students can be explained with limited time of training and teaching. Extending the treatment time to two semesters is required for measuring the real changes in attitudes.

Another unexpected finding was that there was no significant increase in the self-confidence of students about using grammatical structures in written English language. To some extent, this may be related with exposing to real English samples in that students did not investigate authentic language during their English lives which was limited to school. Therefore, this requires spending more time to gain confidence and experience in corpus samples. Also, they did not felt confident while working with corpus, since they needed to understand the whole meaning of the sentences, which was time and effort taking. These may cause them develop negative attitudes and low-confidence in English. It is clear that there is a trade-off in using corpus for beginner students. Providing that low-level English learners are not exposed to corpus, their language awareness remains limited with basic chunks of language, but their attitudes toward learning English are likely to be better. However, when they are exposed to corpus, their perception of real English broadens and their English competence enhances. This is crucial especially for weak students, since they are lack of familiarity in English grammar and are in need of teacher guidance. From this point, it was recommended to use grammar with corpus based approach. One benefit of integrating grammar translation method into corpus is that EFL students frequently consult for translation in understanding written language, so when they translate authentic languages, they expose to real English data and make use of different grammatical structures.

As for limitations of the study, the lesson was mandatory in both sections, so it was not likely to assign students who are better in English into one section. Furthermore, lesson time was limited to two hours in a week, which caused less teacher guidance within class. We selected the common functions of the tools about grammar teaching and omitted other functions such as register and collocation, which are more suitable for writing courses. For those interested to study corpus with low-level students, it is highly recommended to spend more time with corpus training and corpus work. Also, the researchers need to consider when to apply data driven teaching and deductive teaching, since complex grammatical structures are better to be explained with deductive teaching. In our case, we did not use any course books and audiovisual materials, so it is recommended to enhance the lesson with other kinds of instructional materials; otherwise the lesson may be boring with only authentic language samples for low-level students. We studied corpus for one term, which may not be sufficient for students to develop a positive attitude towards corpus use in low level students. Thus, in studying corpus with low-level students, it is recommended a two term lasting study and a more deductive teaching method.

In conclusion, despite the unexpected results, the study was significant in terms of comparing small and large corpus as teaching approaches and studying with low-level students, which gives us insights and new horizons about pedagogical understanding. As for the effectiveness of the two corpus based teaching approaches, we deduce that both approaches are effective in teaching grammatical structures. Nevertheless, there may be decrease in students' attitudes toward teaching approaches. In this sense, reasons why students have negative reaction to the teaching approaches need to be investigated with a qualitative research.
REFERENCES


