The Effect of Exploiting Corpora in TEFL Classroom: A Case Study

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Abstract—This paper is an attempt to study the integration of data-driven corpus-based methodology in an inductive and learner-centered way in TEFL classes. More concretely, it evaluates a potential strategy of having Iranian EFL students appeal to a large target language monolingual corpus searching a certain grammatical pattern. The results reveal the high effectiveness of corpus consultation as a supplement to conventional language learning tools such as grammar textbooks, dictionaries and the like. The results also made clear that the effect of corpus on students’ self-learning increases as their level of language proficiency enhances. The total improvement of the students on using corpora has been gained as 18.4% which is promising in its own status.

Index Terms—corpus linguistics, corpus-based learning, language learning, monolingual corpus, TEFL students

I. INTRODUCTION

We live in a world in which information technology is rapidly finding its way into our working as well as private lives. However, the way in which such information is gathered and stored is important as it needs to be processed and interpret into knowledge. As a result, the users of this technology require developing new strategies for constructing the knowledge. Computer software for language studies are among the very supportive tools in exploiting technology in this respect.

During recent years, computer assisted language learning (CALL) methods have been taking advantage of different types of corpora and concordancing in solving lexical, grammatical, stylistic, and some other linguistic problems. Corpus linguistics has provided linguists as well as language teachers with new insights into language structure and use making extensive use of corpora.

EFL students living in countries where English is not widely spoken do not normally have the opportunity to meet native speakers of English in order to improve their language abilities, recognize language patters and correct their errors. Moreover, non-native speakers of English desire their English to be as close as possible to the norms of English. This obstacle can be partly removed by extensive reading referring to a rich language exposure such as corpora. Extensive reading (Nation, 1997; Susser & Robb, 1990) is believed to facilitate language learning, because it exposes learners to real language use in context, and in amounts far larger than the short texts and dialogues usually preferred for the presentation of new language items. Extensive reading is also regarded as an effective way to help language learners develop intuitions as native speakers do (Krashen, 2004).

Using corpora in the form of concordances is of great benefit to a variety of users including students of English, teachers, translators, linguists, and any individual involving reading, writing, speaking and analyzing English or having any kind of question about the way English works. These users are not often able to find the appropriate answer to their questions in grammar textbooks and traditional dictionaries.

Concordances are one of the tools frequently used in corpora analysis. A concordance is a list of queried keywords (search items) which are centered and highlighted in context in which they occur. In a concordance one can see not only the search item(s) along with the corresponding occurrence frequencies but also the right and left context surrounding the search item(s). The relative frequencies of search items in the corpus are very helpful in analyzing linguistic data in terms of typicality, accuracy, and some other qualities. One of the first language teachers who used concordancers in language classes was Tim Johns (Johns, T. 1997). He later developed Data Driven Learning (DDL) concept. In DDL procedure students are asked to answer their language questions by analyzing the data produced by the concordance lines which are condensed exposures to different language patterns. And this is exactly the very concept which has been made use of in the present study. This paper is, in fact, an effort to demonstrate the effect of using concordances in English language classes as a tool for self learning of certain grammatical patterns, namely, verbs and adjectives with different prepositions. Grammatical and lexical studies are among the two most frequent areas which have made use of corpora.

Working with corpora in language classes may take two forms: soft version and hard version (Leech, 1997, p. 10). The soft version requires only the teacher to have access to, and the skills to use, a corpus and the relevant software. The teacher prints out examples from the corpus and devises the tasks. Learners work with these corpus-derived and corpus-
based materials (Bernardini, 2004; Granger & Tribble, 1998; Osbourne, 2000; Tribble, 1997b; Tribble & Jones, 1990). The hard version requires learners to have direct access to computer and corpus facilities and have the skills to use them (Aston, 1996). Tasks can be devised by the teacher (Tognini-Bonelli, 2001), contained within a CALL program (Hughes, 1997; Milton, 1998), or chosen by the learners, with or without the teacher's guidance (Bernardini, 2002). In this paper the soft version has been used due to inaccessibility of all students to the internet simultaneously at the classroom. In this way, I made some print-out instances from BNC (British National Corpus) in which the pertinent features (i.e. verbs or adjectives and their prepositions) have been highlighted in order to be distinguished from the surrounding context. The task – several cloze tests – have also been designed previously and given to the students to be answered. One of the advantages of using soft version in corpus handling is that all students receive the same language exposure, the same data for the same task and their computer skills or working speed cannot affect the results.

II. RELATED WORK

In recent years, the accessibility of language corpora provides language learners and teachers with great opportunities in learning a language as well as language analysis with the help of various computer programs in order to reveal many aspects of language use quickly and accurately without any need to manually collect and analyze data.

Bernhard Kettemann studied the use of concordances in English Language Teaching (ELT) in grammar, vocabulary works as well as stylistics and literature teaching. In the grammar area, for instance, he looked at if-clauses, reported speech, the contrast between present perfect and past tense and some examples of possible contrasts between since and for (Kettemann, B. 1995). Kennedy investigated the ways of expressing quantification and frequency in ESL (English as a second language) textbooks (Kennedy, 1987a, 1987b). Holmes also examined ways of expressing doubt and certainty in ESL textbooks (Holmes, 1988), while Mindt looked at future time expressions in German textbooks of English (Mindt, 1992). The last three studies have similar methodologies, that is, comparing the relevant constructions or vocabularies in the sample textbooks to those in Standard English corpora. Most of these studies found that there were considerable differences between what textbooks are teaching and how native speakers actually use language as evidenced in the corpora.

Costas Gabrielatos in an extensive study first defined corpora and their types and then discussed their contribution to language learning and teaching while providing examples of their use in class. His study also outlined the changes in knowledge, skills and attitudes that are needed for learners and teachers to take advantage of the opportunities offered by the availability of corpus resources. Finally, the paper discussed the limitations of using corpora in language teaching, and the potential pitfalls arising from their uncritical use (Gabrielatos, C. (2005. Davies also used corpora of historical and dialectal texts when teaching an advanced course in Spanish linguistics (Davies, M. 2000).

III. THE EXPERIMENT

The language examples demonstrated by concordances and analyzed by the learners are the most effective way in self-learning certain aspects of language in TEFL classes. The concordance data are claimed to be more comprehensive than those found in dictionaries or textbooks. In this experiment, we have tried to prove this claim by using a very large monolingual corpus of English - British National Corpus (BNC) - in an English language classroom. The students have been provided with a set of concordances and asked to deduce the rules for a certain grammatical feature behind concordance lines. Then the results of the students' consultation of the concordances have been examined.

A. Subjects

The present study is concerned with 50 male and female undergraduate students (in first year, second year and third year) at the English Language Department of Shahrekord University. The native language of the students is Persian and they learn English as their foreign language. All students are familiarized with the way the experiment is going to be carried out, its purpose as well as working with the keywords in the concordance of which they will make use just before the experiment. As the learners face with an unconventional activity in their learning experience requiring them to change their learning strategy, making sure that the students understand the basic mechanism of working with the concordance is the name of the game in such experiments. We select the learners from different grades to be able to evaluate the effect of language proficiency level in this study too.

B. Materials

The material in this experiment consists of two similar test sheets as well as two print-out pages of concordances extracted from BNC corpus. Each student receives the two test sheets, the one as a pre-test and the other as a post-test before and after reading the concordance pages, respectively. The number of tests in the test sheets has been decided to be small not to be tiring for the students in order to reduce the exhaustion influence. The tests are all about using proper preposition for the words taking more than one prepositions based on different contexts. For this study, the two words responsible and agree are examined for their relevant prepositions which may differ according to the context in which they occur as responsible for/responsible to, and agree on/agree with. We tried out only these two words since it did not seem worthwhile to engage students' minds with so many grammatical points and concordance lines in such a short time. The concordance lines pertinent to the mentioned words and their prepositions produced by BNC corpus have
been manipulated and rearranged so that they can be suited to the requirements of the experiment conditions like time allocated for the experiment, level and mood of the students, and the type of tests given to be answered. That is, out of 729 concordance lines produced by the corpus for the two search items responsible for and responsible to, only 40 (20 for each) lines have been selected to be printed for the students. Students are not, of course, aware of the frequency information or the fact that some certain patterns are more frequent than others. The number of actual concordance lines has been contracted because it seemed not desirable to have the students read a lot of concordance lines to teach only one or two grammatical points. Appendix I is the two print-outs of concordance lines used in this experiment and Appendix II is the test sheet given to the learners twice as pre-test and post-tests.

The material has been administered to the three groups of learners who were randomly selected from the total number of about 170 ESL students in Shahrekord University. For level 1 we selected 16, for level 2, 17 and for the third level 17 students to be contributed in our experiment. These three groups of students were tested separately in different rooms. First, all students were given a pre-test sheet and asked to fill the blanks with the appropriate prepositions using their existing language knowledge (Appendix II). After collecting the sheets, the same students were given a two-page print-out of corpus (Appendix I) in which some concordance lines had been listed showing the related words and prepositions bold and underlined (as usually seen in BNC search engine). A 5 to 10-minute time was allocated for reading the corpus and then the second test sheets (post-test) were distributed to be filled out. While filling out the post-test sheets, the students were invited to remark their self-learning conclusion in terms of some certain rules or regularities on these two words and accompanying prepositions (responsible for/responsible to, and agree on/agree with).

C. Data Analysis and the Results

The scores of the students in each group were determined by recording the number of tests that they answered correctly. The maximum score for each student in each test sheet was 7. At first, descriptive statistics of the three groups on pre-test and post-test were represented as has been shown in Table 1. Then, the average percent of improvement for each group was calculated using the individual improvements gained from comparing pre-test and post-test of every individual student. The average learning improvement for students in grade one and hence the lowest level of language proficiency was 10.62 percent. The average learning improvement for students in grade two is 17.58 percent, and that of the students in grade 3 – the highest level of language proficiency is 27 percent.

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
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<tbody>
<tr>
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<td>Post-test</td>
<td>Imp.</td>
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<tr>
<td>6</td>
<td>6</td>
<td>0%</td>
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<td>7</td>
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<td>3</td>
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<td>7</td>
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<td>3</td>
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<td>5</td>
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<td>5</td>
<td>6</td>
<td>14%</td>
</tr>
<tr>
<td>Mean</td>
<td>10.62%</td>
<td>Mean</td>
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</table>

![Figure 1. Improvement in three levels of language proficiency](image-url)
The total improvement of the students on using corpora as a learning tool irrespective of their level of language proficiency has been gained as 18.4%, that is, a mean concordance effect of 18.4%, which is promising in its own status. Of course, it should be noted that the effect of corpus was not the same for three groups. As figure 1 demonstrates, the effect of corpus on students’ self-learning increases as their level of language proficiency enhances. The difference between the mean scores gained in pre-test and post-tests of three groups of students (three levels) has been demonstrated in figure 2. Figures 3 to 5 also show the difference between pre-test and post-test scores of each group of learners in the form of diagrams. These diagrams also display the amount of learning improvement in each group as well as every individual learner.
In these diagrams, the spaces with pink and blue lines in their top and bottom, respectively, are, in fact, the estimated amount of students' improvement. In terms of individuals, out of 50 students, 34 gained higher scores on the post-test comparing to the scores on pre-test, 12 gained equal scores on pre-test and post-test, and 4 gained lower scores on the post-test. In other words, for 68% of the learners the concordance consultation had a positive effect on their learning, for 24% of the learners it had no effect, and for the rest (8%) using the corpus had a negative effect.

Figure 6 aims to simultaneously compare the height of learning improvement in three levels of language proficiency displaying the post-test scores of all the students belonging to different groups in a diagram.

According to the students' remarks on their findings about the related syntactic structure, it was revealed that the new and authentic information provided by the corpus were highly appreciated by the majority of the students, especially those belonging to higher levels of language proficiency (mainly, level 3 learners). A few of the learners stated that working with concordance data and the attempt to induce certain patterns and structures help them to memorize the related patterns far easier.

Totally speaking, the obtained data analysis reveals some main results: the students having a little knowledge of English grammar were less able to study the corpus and formulate grammatical rules or syntactic regularities. In contrast, the students mastering English basic grammatical points were obviously able to deal with the data in the corpus and formulate some grammatical rules in order to improve their ability in certain grammatical features. In this regard, some points have to be born in mind. For one thing, the inability of students with a low level of language proficiency to handle corpus may be due to difficult grammatical structures selected for this experiment. As a result, corpus material (corpus samples) may have to be adapted according to the level of learners. For example, when the corpus has to be used by low level learners, the concordance lines should be selected in such a way that they are more tangible for the learners to be able to study the related contexts and extract regularities out of them.

IV. EDUCATIONAL IMPLICATIONS

A large number of teachers of foreign languages agree on the fact that most examples in traditional grammar textbooks as well as a majority of entries in conventional dictionaries are standing far apart from what the actual speakers of the language produce. These traditional resources contain only invented examples and descriptions most of which are based on the authors' intuition or second-hand explanations. That is, the authors of such conventional resources try to organize examples and explanations in the way that the language is used by themselves as their mother tongue. But, it is believed that a language belongs to all its native speakers and the textbooks as well as dictionaries...
should contain empirical examples and descriptions extracted from the corpora covering almost all varieties of the language produced in real contexts. So, revising grammar textbooks in the way mentioned above is considered as one of the main educational implementations of exploiting corpora in language teaching and learning.

Furthermore, having students to handle the corpus (whether in soft version or in hard version) causes their minds to work more dynamic in order to extract systematic patterns out of unsystematic concordance lines. This kind of learning may be referred to as creative, self-motivated or dynamic learning. Providing the learners with such an environment may help them learn different language skills thoughtfully and more precise, which can be regarded as another educational implementation of exploiting corpora in language teaching and learning. Costas Gabrielatos makes an analogy in this connection. He says in consulting a dictionary or grammar textbook, learners are given fish; by having them to actively engage in pattern recognition, they learn how to fish (Costas Gabrielatos, 2005).

Using corpora in language classes can also be of great help in learner independence. According to Johns when using corpora or corpus-based materials, "students define their own tasks as they start noticing features of the data for themselves - at times features that had not previously been noticed by the teacher" (Johns, 1997, p. 101). Moreover, certain endowed learners may criticize or question some of the existing rules in their textbooks based on their own examination of the corpus genuine data. This way, they would take the first steps towards becoming promising future researchers by engaging themselves in language awareness.

V. CONCLUSION AND FURTHER DEVELOPMENTS

The increasing use of corpora in teaching/learning environment has changed the roles of both teachers and learners in that conventional teacher-centered methodologies have turned into learner-centered ones. In such environment the actual and authentic rather than invented examples of language are exposed to learners to decide on language patterns and produce more explanatory and empirical answers to their questions. In this context, teachers are no longer the only source of knowledge for the learners, rather they act as administrators, moderators, advisors or catalysts in the learning process of the students.

Unfortunately, many language teachers have little or no awareness of corpus potentials in language learning, partly due to their limited access to corpora and corpus tools. Hopefully, however, many corpora can be reached freely or at low-cost price (See the appendix III). Teachers need to be informed not only of linguistic corpora and their contents, but also of various corpus analysis tools (software) to become skilled users and be able to guide their students in dealing with corpus data. Moreover, process-oriented approach to learning should become part of material design in language teaching syllabus. Using corpora in classroom does not imply that the teachers should abandon the existing teaching methodologies, but it means to improve and enrich classroom activities.

The aim of the present study was to examine the effectiveness of students' consultation of the corpora in the realm of grammar. However, there are still a lot of ground to be covered by various types of corpora for research to strengthen the integration of corpora in other areas like lexicon, stylistics, cultural studies and the like. In the new era of information and communication technology (ICT) we need some kind of modifications in approaches to teaching and learning to provide the future generations with more opportunities for exploiting technology in learning.

APPENDIX I PRINT-OUT SHEETS EXTRACTED FROM BNC

<table>
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<th>No.</th>
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</tr>
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<td>C90</td>
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<tr>
<td>16</td>
<td>CBX</td>
</tr>
</tbody>
</table>
agree on / agree with

A1A to which both his admirers and his detractors are unable to agree on what kind of writer Derrida is, or even what he

A1A and feminist ones. Such disparate allegiances are more likely to agree on what they oppose than in what they support. The different

A1Y to a strict timetable since scientists and technologists did not yet agree on how nuclear plants could be decommissioned safely. "For

A2E of moving to Fourth Division Lincoln City if the clubs can agree on a fee. Roberts, on the transfer list at his

A37 . The serious business of taking the tough decisions necessary to agree on a budget that both puts the deficit on a downward path

A3T intakes at power stations. Once the world's nations can agree on how to exploit mineral deposits on the seabed, the robots

A56 by trying to deny it, and now they can not agree on who should do what or how or why. World View

A59 would not push to legislate while neither shops nor shoppers could agree on a solution, pressure groups could not agree, and

A5M they were optimistic that a working group of senior deputies could agree on the reforms, which give the Muslims equal representation

A5Y White Paper on cabling Britain because two government departments can not agree on how it should be paid for. At the heart

A68 this up in realms of high theology then we shall all agree on what we can not understand. Ramsey was determined on clarity

A68 not in common. The commission moved away from the idea that Christians agree on what is important and disagree only on what is

A6F effort is likely to be politically disastrous, even if they can agree on a successor. The above are all classic instruments by which

A6G of generations." Fortunately, they were thus able to agree on her name. Ruby was flown, still frozen, to

A7N may not match. Measurements are "objective" inasmuch as scientists agree on the thumb to be used as the ruler. Primatologist Emil

A8J was evidence of a difference of views. "Generally we agree on how the situation in South Africa looks today." The

A9M to supra-national monetary union. But EC governments will have to agree on what changes to make to the Treaty of Rome by the

A9M "co-operation was needed and we always found it difficult to agree on rules. Mick and Paddy had been well briefed on most

AA4's party, said all political forces and ethnic groups should agree on a consensus that would fight for this goal, as well as social

AA4 the idea of a pan-European summit, but the participants must agree on how it will fit into the building of the "new

A08 up on the wrong side or eaten something which didn't agree with you or just need a few days' rest. It

A0C UNFAIR EVERYONE is entitled to their opinion, and while I agree with Joe Hyam's concerning service charges (Caterer, 15–21

A0K few who are questioning the state of play, and who agree with Ben Whittaker (1979: 312) when he urged &quote;
APPENDIX II PRE-TEST AND POST-TEST SHEET

1- She is directly responsible ----- the President. (to / for)
2- Who will be responsible ----- me? (to / for)
3- Smoking is responsible ----- many cases of lung cancer. (to / for)
4- Are we all agreed ----- the best course of action? (on / with)
5- But the two sides could not agree ----- what to do to control the emissions of sulphur. (on / with)
6- The verb agrees ----- its subject in number and person. (on / with)
7- Does she agree ----- you about the need for more schools? (on / with)

APPENDIX III FREE/AFFORDABLE CORPORA AND CORPUS TOOLS

1- British National Corpus Sampler (1 million words or written and 1 million words of spoken English): http://www1.oup.co.uk/elt/catalogue/Multimedia/WordSmithTools3.0
2- Collins Wordbanks Online English corpus (concordance and collocation samplers): http://www.collins.co.uk/Corpus/CorpusSearch.aspx
3- The Complete Lexical Tutor: http://132.208.224.131
4- Michigan Corpus of Academic Spoken English (MICASE): http://www.micase.msu.edu/micase
5- Variation in English Words and Phrases (Mark Davies, Brigham Young University).
6- Interface to the full British National Corpus (100 million words): http://view.byu.edu/
7- Web Concordancer (works with a variety of corpora): http://www.edict.com.hk/concordance/
8- WebCorp: The Web As Corpus (University of Liverpool): http://www.webcorp.org.uk/
10- WordSmith Tools: http://www1.oup.co.uk/elt/catalogue/Multimedia/WordSmithTools3.0

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