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INVESTIGATING STUDENT MOTIVATION IN THE USE OF CORPUS CONCORDANCING IN ESP LEARNING AT UNIVERSITY LEVEL

Abstract

This article is the qualitative part of a broader research project focusing on teaching English for Specific Purposes (ESP) via corpus concordancing in a university. A corpus of ten million words was assembled containing texts from the domains of Special Education, General Academic English, and General English. A corpus teaching method (CTM) was compared and contrasted to a traditional teaching method (TTM) in terms of student motivation. I particularly explored what it is that motivates mixed-ability level university students when involved in corpus concordancing compared and contrasted with existing traditional learning practice. Data collection procedures to estimate motivation were item analysis of a motivational questionnaire, an open-ended survey, and a corpus style analysis of the survey. Important features were demonstrated that motivate or demotivate students of three ability levels (beginner, intermediate, advanced) when following CTM or TTM. A major finding was that a substantial proportion of beginners suggested corpora be used in learning vocabulary, ascribing high motivational value to it. While this proportion is smaller than those with the other two student ability levels, it suggests they do wish to use corpora in learning vocabulary despite being cautious. Finally, some teaching implications are provided to be considered by ESP teachers at university level.

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Key words

English for specific purposes, corpus concordancing, motivation, corpus teaching, data-driven learning.

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1. INTRODUCTION

This article presents a comparative analysis between two approaches to teaching English for Specific Purposes (ESP) to university students who have Greek as their native language. The traditional approach involves the existing method used in ESP courses, typically consisting of reading handouts of academic English texts in class and developing strategies to understand unknown vocabulary or grammatical phenomena. The new method involves making use of electronic corpora, which are collections of texts in electronic form used for linguistic research and language teaching. This linguistic research is facilitated by electronic search engines called corpus concordancers. For the purposes of this investigation I compiled my own corpus, the Thessaly Corpus, counting ten million words. This research was born out of the necessity to modify and improve the ESP course of the Pedagogical Department of Special Education of the University of Thessaly. The overall research project included (a) a quantitative part in which students performed language tasks and their performance was measured, and (b) a qualitative part in which student motivation was assessed. The present article focuses on the latter.

2. CORPORA IN THE ESP CLASSROOM

This study has been influenced by practical applications of corpus linguistics that have offered extremely useful methodological approaches to communicative language teaching in ESP and broader settings. Sinclair (1990, 2003) connected corpus linguistics with the communicative teaching approach. His studies on corpora, collocations, idioms, and concordance lines have greatly influenced language teachers and researchers because they have proved that corpora can effectively clarify grammatical phenomena and lexical choices. Furthermore, his studies suggest what should be prioritized in language learning and, more importantly, they develop different and more imaginative ways of learning and teaching. By improving their accessibility and relevance to students, corpora or subcorpora of specific disciplines can sometimes be more suitable than general corpora in teaching languages for specific purposes and they usually benefit students who study ESP at university level (Allan, 2009). For example, Chang (2014) compared the online Corpus of Contemporary American English (COCA) with a manually collected specialized corpus (named Michelangelo) by analyzing data from a longitudinal, ESP writing skills experiment in Korea. Chang's sample included 10 intermediate to advanced English language students who were told to consult both the general and the specialized corpora to perform various academic writing tasks over a period of 22 weeks with teaching sessions once a week. The researcher's primary data was based mainly on transcripts of weekly interviews and students' written responses to survey questions (Chang, 2014: 247-248).

In his influential paper, Tribble (1997) offered useful and practical ideas and applications of corpus linguistics in language education in academic settings such as the present one. Rather than simply offering a formula for using a specific reference resource for teaching and learning language, Tribble's examples of concordancer use and suggested task types provided an incentive for many corpus teachers around the world (including myself) to seek empirical corpus evidence in support of teachers' and/or researchers' claims and to create appropriate corpus concordancing tasks to assign to students. Barlow (2003) worked extensively and authoritatively on corpus and concordancing software development and hence many teachers, including myself, decided to use his valuable, hands-on, Monoconc Pro 2.2 (or MP2.2) concordancing tool (Barlow, 2003) in corpus research efforts. In a work of great importance in the field of corpus linguistics, Mahlberg (2005) highlighted the serendipitous nature of corpus technology, which allows researchers to realize phenomena they had never imagined, and the vast potential of corpora "to bring to light facts about language that may be hidden from our intuitions" (Mahlberg, 2005: 38). This study is, to some extent, inspired by Mahlberg's work in that it aims to provide empirical corpus data from qualitative viewpoint by testing students' awareness not only of the frequencies of keywords in context (KWIC) occurrences but also their "semantic prosodies," in other words, semantically positive or negative occurrences (Mahlberg, 2005: 23). Further relevant literature has indicated a functional relationship between corpus linguistics (CL) and communicative language teaching (CLT) with progress in computer science certainly being a catalyst in this relationship. As regards the catalytic effect of computers on this relationship, Kennedy (2014) clearly states "it would have been surprising if the introduction of any technology as revolutionary as computing had not had consequences for the study of language" (Kennedy, 2014: 268). In other words, being able to use a PC to quickly analyze features of language in so many texts could be influential for teachers and learners. This is relevant to this study because there has been an effort to find and explore different methods of teaching ESP with the aid of computer programs. Such use of computers may be more interesting and effective than the traditional teaching approach that has been in use for so long. Thus, in this study, corpus concordancing was examined as a potentially helpful way of improving my ESP course.

In an effort to create a more motivational ESP course, Önder-Özdemir (2014) investigated the relevance of corpus data in medical English instruction via data-driven learning (DDL). In her longitudinal study, Önder-Özdemir (2014) employed an experimental group of 323 first-year Turkish medical students with a focus on teaching collocations found in medical English articles taken from a relevant medical journal. After investigating medical collocations of genre-specific target words, the students were asked to underline and talk about them with the instructor. At a later stage, they were asked to complete a self-initiated project to discover their own medical collocations and provide written reports. After the longitudinal experiment, the students were more confident in exploring medical collocations via DDL because

they had found uses that were not present in dictionaries (Önder-Özdemir, 2014: 41).

Thus, corpus concordancing has established its position in CLT and ESP, signaling an “extendability” (Gries, 2013: 159) or simply a shift from a focus on single words to multi-word items and, perhaps most importantly, facilitating learning processes “by providing a rich source of embodiments and contexts from new vocabulary” (Cobb as cited in O’Keefe, McCarthy, & Carter, 2007: 24) and dissolving language ambiguity (Geluso & Yamaguchi, 2014: 226). Furthermore, learning via corpus concordancing, or more broadly DDL, in ESP settings has provided a unique opportunity for practitioners and researchers to explore learners’ preferences and attitudes toward this type of teaching and learning methodology in comparison with other more traditional ones. For instance, Mizumoto, Chujo, and Yokota (2016) focused on student perceptions by constructing and validating a questionnaire designed to measure DDL (or Corpus Teaching Method or CTM here) effects, as is the case in the present study. Similar comparisons were performed by Marinov (2018), Forti (2019), and Elmansi et al., (2021), who created special instruments for measuring students’ attitudes and preferences as regards DDL.

3. METHODOLOGY AND RESEARCH DESIGN

As stated above, the qualitative component of the study addresses what aspects of the two methods, Traditional Teaching Method (TTM) and Corpus Teaching Method (CTM), motivate or demotivate university students, and why. The first step in addressing these questions was to design an open-ended survey containing five questions (see Section 4) and assign it to all the students (both TTM and CTM groups), no matter what their language ability level was. The students provided written responses which were analyzed thematically and categorized in an explicit manner according to their similarity or dissimilarity. This was also the case for multiple responses given by a single student to one question, which is in line with Tong, Sainsbury, and Craig (2007: 356) who maintain that “the credibility of the findings can be assessed if the process of coding, and the derivation and identification of themes are made explicit.”

The next step was to make a comparison between the categories of responses in order to draw conclusions about features that most frequently motivate or demotivate students when being taught via CTM or TTM.

Because this research took place in the university classroom where I teach, I used Action Research as the overall research paradigm for this study (Craig, 2009; Creswell, 2009; Gay, Mills, & Airasian, 2009; Plano Clark & Creswell, 2010). According to Gay et al. (2009: 18), Action Research in education involves systematic research performed in the teacher’s environment to collect data about how students learn and how teachers teach.

The qualitative component (open-ended survey) was used to support findings from the quantitative component, with the latter being beyond the scope of this article. Performance results from the tasks were combined with student responses to open-ended questions concerning the two teaching methods in order to explore how and why students reacted in different ways to TTM and CTM. The qualitative component of the study is aimed to provide an in-depth understanding of (a) the students' experiences with TTM and CTM, (b) their perceptions of the two different methods, and (c) their perceptions regarding the extent to which these two methods motivated them or not to make progress in class.

The experimental method is also suitable when participants are randomly selected into their respective groups or matched on key characteristics (Cook & Campbell, 1979; De Vaus, 2001; Meltzoff, 2010). The two groups of participants being compared are assumed to be equivalent due to random selection, a method whereby a population of interest is identified, and each member of the population has an equal chance of being chosen as part of the sample. Two groups of participants were selected for this study (G1 and G2 respectively, 30 students each). The two groups were stratified based on ability level, which is the moderator variable (19 beginner students, 22 intermediate students, and 19 advanced students). The students were then selected from the stratified groups. Due to the nature of the sampling, the two groups were analogous.

The study consisted of two phases. In the first session, both groups were given the same text or specialized passage (SP1), but the teaching approach was different: G1 was assigned four tasks that involved reading SP1 and working on target vocabulary via CTM, whereas G2 did exactly the same via TTM. In the second session, both groups were given the same specialized passage (SP2), which was different from the one used in the previous session. This time G2 was assigned four tasks that involved reading SP2 and were working on target vocabulary via CTM, and G1 did the same via TTM.

The experimental setup differs slightly from the traditional two-group experiment in that the control group became the experimental group and the initial experimental group became the control one. In other words, a within-subjects design was used because both groups of 30 students received both CTM and TTM, therefore providing some counterbalance. The reasoning behind employing a within-subjects design is that subjects function as their own control (Keren & Lewis, 2014: 260). This provides the opportunity for a researcher to instantly compare the different treatments. Statistically speaking, it increased the sample size of participants when using both teaching methods and, from a qualitative point of view, students were encouraged to express their feelings and attitudes to a greater extent. The within-subjects design ensured that both groups of participants were exposed to both methodologies and therefore a parity of student experiences was achieved.

After the two teaching sessions were completed, student performance was measured in terms of the percentage of correct answers in the tasks completed (see

sample worksheet in Appendix 1), and motivation was measured using a student motivation questionnaire (see the item pool in Appendix 2).

4. QUALITATIVE ANALYSIS OF SURVEY DATA

This section presents the findings from the qualitative analysis of the study after considering the methodology described above. The objectives of the qualitative part of this study were to determine to what extent student motivation informs preferred teaching style when asked to compare CTM and TTM, and to identify motivational and demotivational factors when using one method or the other. To fulfill these objectives, after completing the language task stage and the quantitative questionnaire stage (four exercises and one Likert scale questionnaire, respectively), sixty students who participated in this study were asked to respond to an Open-Ended Survey (OES) which asked the following five questions about CTM and TTM:

1. What did you like best about CTM and TTM?
2. What did you like least about CTM and TTM?
3. What were the most challenging aspects of CTM and TTM?
4. Which method do you believe motivated you more to learn and why?
5. Which one of the two methods would you suggest to a friend and why?

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According to Dörnyei (2007: 107), open-ended questions (a) allow wider freedom of expression, and (b) are used when the scope of answers is not known. In this research, the short answer question type was selected because it can be answered succinctly with a response, which is usually more than a phrase and less than a paragraph.

The students' responses were analyzed via thematic analysis. In the current section, the categorization process and the subcategories will first be described. I will then analyze responses within each subcategory with their frequencies in order to identify students' specific reasons when responding to questions about CTM and TTM. Thereafter, responses across ability levels will be presented. Then, reflections on important aspects of the responses to the OES will follow. Finally, a corpus-style approach to the responses to the OES will be provided.

4.1. The categorization process

Both the top-down and bottom-up approaches were used to categorize the qualitative responses, as described previously. A holistic top-down approach allowed for observation of trends in the qualitative responses that were then compared and contrasted with the trends in the quantitative results, thus allowing

triangulation of the results. At the same time, a bottom-up atomistic approach provided a detailed picture of the responses. Dörnyei (2007: 26) comments on the “ideological contrast” between the quantitative and qualitative categorization and/or coding practices. While quantitative research can launch a research study with exact coding tables for processing the data, qualitative categorization is different because (a) it is not numeral but verbal, adding up to small textual labels such as the ones provided by my students when they responded to the OES, and (b) it is often not defined on the basis of a theory or hypothesis but is left as open as possible in order to include the little niceties of meaning embedded within my students’ written data, which were usually hidden throughout the investigation. In line with theoretical grounding on coding (Busse & Walter, 2013; Creswell, 2009; Dörnyei, 2007; Tong et al., 2007), sixty tables were created, one for each student. Then, based on the questions, the following five categories were created:

1. Reasons for liking CTM and TTM
2. Reasons for not liking CTM and TTM
3. Challenging aspects of CTM and TTM
4. Reasons why CTM and TTM motivated me to learn
5. Reasons for suggesting CTM and TTM to a friend.

According to the responses that were spread over each one of the five categories, fifty-nine subcategories of responses were created. This was done by identifying and merging subcategories of responses that were linguistically and semantically synonymous. For example, some students had the following responses to the second question about CTM (what did you like the least?):

1. It was difficult for me to understand the meaning of unknown words.
2. It was difficult for me to read the text.
3. The content of the text was nonsensical and superficial to me.
4. The text was confusing to me.

Since the above responses had similar meanings, they were put into a single subcategory, “content nonsensical.” While categorizing, I assumed that no response could be exactly the same unless by chance so, for instance, responses that explicitly or implicitly reflected difficulty in comprehension were placed in the same category. The list of fifty-nine subcategories is presented in Table 1.

Category	CTM Subcategories	TTM Subcategories
Like best	Convenient Effective for understanding Interesting Use of technology Variety of examples, options	Access to content Consistent Easy Effective for understanding Interesting Teacher feedback Variety of learning strategies
Like least	Tiring (boring) Computer delays/unfamiliarity Content nonsensical Inconsistent Specific tasks Too many sentence examples Nothing I disliked	Boring Different process than CTM Ineffective for understanding word meanings Requires more time Specific tasks Too few example sentences Lack of help or guidance
Most challenging aspects	No challenging aspects Computer searches/problems Multiple sample sentences New method of learning Specific tasks Time to complete task	No challenging aspects Difficult Exercises Specific tasks Positive aspects Text and context-based learning Time to complete task Tiring and uninteresting Too few sample sentences
Reasons for motivation	Easy and enjoyable Comprehension Creative Faster Variety of sample sentences	Comprehension Fewer sample sentences Interesting Text-based content easier to read Traditional and familiar
Why suggest to a friend	Convenient Effective Enjoyable Interesting Modern Personal experience Variety of sample sentences Can verify results	(No reasons given)

Table 1. List of merged CTM and TTM subcategories of synonymous student responses

4.2. Summary of findings

A summary of the findings follows, in which comparisons and contrasts between the main subcategories of reasons for the two methods are presented. This will be done in order to see the students' trends in the reasons they gave as regards the OES questions. As will be described, the key findings were (a) all the students liked CTM but not all of them liked TTM, (b) the primary reason for not liking both CTM and TTM was boredom, (c) the most challenging aspects of CTM identified by students were dealing with multiple sample sentences and word meanings, and problems with computer searches, (d) a wide majority of the student sample believed that CTM motivated them to learn more, and (e) a vast number of the students indicated that they would recommend CTM to a friend.

4.2.1. Reasons for liking CTM and TTM

All the students liked CTM but they did not all like TTM. The primary reason for liking CTM (as identified by 32% of responses) was the variety of sample sentences, and the primary reason for liking TTM (as identified by 21% of responses) was the variety of learning strategies. Students categorized in the intermediate (36%) and

beginner (33%) levels gave this reason more often than the advanced students (28%). This finding is important because teachers usually assume that beginners may become confused when faced with a variety of examples; however, these results show that, although worthy of some attention, it is not a major problem and was welcomed by the students.

4.2.2. Reasons for not liking CTM and TTM

The main reason for not liking CTM and TTM was boredom. This was almost the same response across all ability levels (38% of advanced, 50% of intermediate, and 52% of beginner students about CTM while 51% of advanced, 53% of intermediate, and 46% of beginner students about TTM). Students also indicated that they thought that CTM had too many sample sentences (22%) and students did not like the fact that TTM had very few sample sentences (17%).

4.2.3. Most challenging aspects of CTM and TTM

The most challenging aspects of CTM identified by students were dealing with multiple sample sentences and word meanings (51%) and problems with computer searches (28%). It is worth noting that the challenging aspects of CTM appeared to vary across ability levels. The majority of students who were categorized as advanced level (63%) and intermediate level (57%) reported that their primary challenge with CTM was that it had multiple sentences and word meanings. However, the majority of students who were categorized as beginner level indicated that their primary challenge had to do with computer searches and technical issues (42%).

The most challenging aspects of TTM were that it involved text and context-based learning (identified by 23% of responses) and it was difficult (19% of responses). As with the challenges of CTM, the demanding aspects of TTM appeared to differ across ability levels. Advanced students were challenged by the text and context-based learning process of TTM, an issue identified by 26% of advanced students. Intermediate students were also challenged by this context-based process (26% of responses), and by the TTM exercises (26% of responses). Students categorized as being at beginner level were challenged by TTM because it provided very few sample sentences (26% of responses).

4.2.4. Reasons why CTM and TTM motivated students to learn

Ninety-five percent of the student sample believed that CTM motivated them to learn more; students provided one hundred and one responses to this item. As noted earlier, regardless of ability level, students indicated that the primary reason CTM motivated them to learn more was because it was creative and interesting. Students classified as intermediate and beginner levels reported that another reason CTM

motivated them to learn more was because it provided a variety of sample sentences.

Only 33% of participants indicated that TTM motivated them to learn more; only ten responses for TTM were offered in total. Students at the intermediate level indicated that the reasons TTM motivated them to learn more were because its text-based content was easier to read (33% of responses) and it was traditional and familiar to them (33% of responses). Students classified as beginners noted that TTM motivated them to learn because it provided them with fewer sample sentences (67% of beginner participants).

4.2.5. Reasons why students recommend CTM and TTM to others

Most of the students (95%) indicated that they would recommend CTM to a friend. In contrast, only a minority (22%) reported that they would recommend TTM to a friend; these students did not, however, provide reasons for their decision. Reasons for recommending CTM to a friend appeared to differ across ability levels, for example, advanced ability students chose to recommend CTM to a friend because it was effective (23%) and interesting (20%). Students at the intermediate ability level indicated that they would recommend CTM because it was modern (29%) and convenient (24%). Students in the beginner group stated that they would recommend CTM to a friend because it was convenient (37%) and effective (30%).

4.3. Corpus-style approach to the responses to the OES

A corpus approach to the responses to the OES (qualitative data) offers a deeper insight into the reasons why the students were motivated or demotivated by CTM and TTM. The analysis of student responses and the corpus approach offered in this study, together with the triangulation with the previous quantitative findings, can contribute to making research-informed teaching decisions. To perform the corpus analysis, the open-ended responses that the beginner, intermediate, and advanced level students gave about CTM and TTM were collected and put in separate text files to be inserted into the MP2.2 concordancing program.

4.3.1. Process of conducting corpus analysis

To gain a deeper insight into why the majority of beginner level students (BLSs) were not motivated by or did not like CTM, a text file (LOW SS on CTM, where “LOW” stands for “beginner”) containing all their opinions about CTM (as shown in Figure 1) was inserted.



Figure 1. Insertion of LOW SS on CTM text file in the MP2.2 program

The negation word “not,” the adjective “more,” and the noun “meaning” were selected as KWICs to be entered in the program. The word “not” was chosen to obtain a deeper and more qualitative picture of what bothers students about the two methods. It is useful to see what comes before and after the negation word “not” in their written responses in order to understand their feelings about the two teaching methods. Similarly, the word “more” was chosen to see what they actually say when comparing CTM with TTM. Finally, the noun “meaning” was selected because understanding the meaning of target words is within the aims of CTM and TTM and it is important to see how the students relate the two methods to their ability to understand the meaning of unknown words; looking at what comes before and after the KWIC *meaning* might offer a deeper understanding of students’ attitudes and feelings toward CTM and TTM. As mentioned previously, the literature supports the idea of scrutinizing individual examples in context (Mair, 1996) and performing more in-depth analyses and interpretations of authentic language (Hasko, 2013).

4.3.2. Collocates of not

To examine why most of the BLSs had a negative opinion of CTM, the KWIC *not* was typed in the concordancing program so as to elicit their negative sentences. As shown in Figure 2 below, 14 concordance lines were obtained.

Frequent collocates appear in red in MP2.2 to help observe the words that were more consistently used before and after *not* by the students. I will present the figures as images rather than text-only concordance lines so that red collocates are easily discerned.

more interesting This one because I was not bored It was very interesting the ctm It w
to find out the meaning of the words. I did not like that method because required knowl
elpful to remember the words that you do not know. It is a fast program that finds imme
nderstand the meaning of the world. I did not like very much the fact that this method v
d to create sentences with them. There is not consistency therefore I can not understa
. There is not consistency therefore I can not understand the meaning of words. There
iderstand the meaning of words. There is not a challenging aspect of the method CTM
dual and complete sentences and I could not find the meaning. There is not a consiste
nd I could not find the meaning. There is not a consistency. There is not a challengin
ing. There is not a consistency. There is not a challenging aspect of CTM for me. The
it. The CTM was faster. The student does not get tired and are equally valid. The CTM
am execution and more for those that did not know. I believe that CTM gave me the mo
Because is more modern, fast, and does not tire and the child learns many more in qu
ormation, enriches the vocabulary and is not at all tiring for him. ...

Figure 2. Fourteen of 14 concordance lines of *not* from BLSs’ responses regarding CTM

Figure 2 offers an insight into how the BLSs see CTM. They used the word “not” in 14 sentences; however, in 8 of 14 concordance lines (1, 3, 7, 10, 11, 12, 13, 14) the word “not” was used in a positive way, such as “not tire,” “not bored,” “not at all tiring,” etc. In the six clearly negative opinions, the BLSs raised issues of the consistency of concordance lines and time which will help teaching decisions in future attempts to incorporate the Thessaly Corpus in teaching practice. For instance, to alleviate the abovementioned problem of inconsistency, more targeted corpora in terms of content for each particular level of student might be suggested. In the same way, a search was carried out in the BLSs’ responses about TTM using the same concordancing program and the same KWIC (*not*). The aim was to examine the BLSs’ negative opinions about the use of TTM in order to compare them to the students’ opinions about CTM. The following concordance lines in Figure 3 show the BLSs’ responses when asked to reflect on TTM:

can learn the new words There are not enough information and we can not unders
 not enough information and we can not understand the meaning of words It was a
 quire knowledge of computers. I did not like it because did not offer many example
 nputers. I did not like it because did not offer many examples and it was hard to fir
 was difficult and as a result, I could not find the words. That I could read the rest te
 lped me understand the words I did not know. It was boring because it is a typical
 . About the TTM I like least that I did not have many options to understand what the
 is a usual and known method. I did not like the fact that there were not any exam
 I did not like the fact that there were not any examples so it was more difficult for n
 method was the fact that there were not any examples so I had to concentrate mor
 . About the TTM I like least that I did not have many options to understand what the
 :cause there is consistency. It does not give many meanings for each word. The m
 allenge” but difficult for student and not interesting. In the TTM there is consistenc
 : one meaning and if the people can not find it, they have not the opportunity to hav
 the people can not find it, they have not the opportunity to have more examples for
 TTM is to make sentences. We did not need a computer to find the word and the p
 led more knowledge and there were not examples to help us. I needed more time.
 o help us. I needed more time. I did not have many choices for the words. I would
 many choices for the words. I would not suggest this, because it needs much time.
 because it needs much time. Ttm is not very good because is boring Ttm is more
 Ttm help me to learn because it did not give me many options and I had to think o
 : and I had to think one my one I did not suggest ttm because is more difficult Can
 e words. In this process, there were not many examples in order to understand the

Figure 3. Twenty-three of 23 concordance lines of *not* from BLSs’ responses regarding TTM

Commenting on the TTM, the BLSs used the word “not” in 23 sentences of their written responses to the OES; the collocates of the word “not” show that in 23 of 23 sentences, the word “not” was used in a negative way, such as “not like,” “not many examples,” “not suggest,” etc. The BLSs raised issues of the insufficiency of examples, loss of interest, boredom, and so on.

A similar comparison was performed between the responses of the intermediate level students (ILSs) about CTM and TTM. The following concordance lines in Figure 4 show the ILSs’ responses to CTM:

understand the given word. There were not anything particular that I did not like. It's a faster and more effective method, I did not like. It's a new method and I had the opportunity to see the results I think that CTM did not motivate me because I had to use the computer and this was good because if I would not understand 1 or 2 sentence, I go to next example, there is no possibility not to understand the meaning of the wanted word as something new and interesting. I did not have to do in the past with similar method I mostly like when I did not understand the meaning of the word and then I will remember it the next day. I did not really enjoy that there are many texts and word which I am looking for. There was not any challenging aspect of CTM method. I like the words. I like very much CTM. I have not got something that I like me least. The use of computer in the classroom. I do not like the size of the letters. It was difficult to learn something from this method. I did not really like the passages due to the fact that it contained 7 to 10 words. This method I do not believe that motivated me to learn, consider time as a result to get boring. I would not suggest to a friend this method because it which made it easy to understand. I did not like creating sentences in task 3. We had the method TTM. In the CTM method did not like to me that there are lot of examples with results for one word was what I did not like because sometimes it confused me. Because we used computers, so we were not bored. I can not find something I did not like on computers, so we were not bored. I can not find something I did not like. It was not boring. I can not find something I did not like. It was not boring because we used computers and I can not find something I did not like. It was not boring because we used computers and I can learn easier with this method and do not forget the words in the future. The chances and opportunities to understand word that you do not know and finally this method has many examples.

Figure 4. Twenty-four of 24 concordance lines of *not* from ILs' responses regarding CTM

As seen in Figure 4, the ILs used the word “not” in 24 sentences. However, the collocates of *not* show that in 13 of 24 concordance lines (1, 2, 5, 6, 7, 8, 11, 19, 20, 21, 22, 23, 24) the word “not” was used in a positive way, such as “not bored,” “not boring,” “no possibility not to understand,” “cannot find something I did not like,” etc. In the 10 clearly negative opinions, the ILs raised issues such as confusion due to the great number of concordance lines and ignorance of the new software. The same search about the ILs' opinions of TTM yielded the following concordance lines, as shown in Figure 5:

It bothered me the fact that I could not find the meaning of the words easily. It is a familiar procedure. There were not examples. There were not any examples which made it of course in the sentence until I find it. I did not like the fact that when I used the TMT when I used the TMT program I did not follow the same steps as when I use task 3 because this method does not help me make sentences. I do not think that TTM method is motivated to me example in the text. There were not any. I find quite interesting the texts. It is specific unknowns word you can not understand the word. The most challenge own words. In my opinion we were not in the exact environment, it was noisy, noisy, as a consequence you could not concentrate the whole time on the passage time on the passage. Truly, I did not find any challenging aspect in TTM method learnt it from our schools, so it did not make any difference to me either, it was any difference to me either, it was not something challenging in my opinion. It is the classic way to learn You can not enjoy that way to learn things We did not joy that way to learn things We did not have many choices at the words and because all people can use it. I did not like this method at all. There was no in meanings. In the method TTM I did not like that you have to spend a lot of time vocabulary. The method TTM does not make me to learn more because it is long but when you find them you are not sure that this meaning is the correct meaning is the correct because you can not compare the results as happens with results with the other method. I would not suggest this method because it makes lead to wrong results. Actually, I did not like this method. It's tedious to learn the context because it usually does not help and so it was almost impossible and it was more familiar to me. It was not interesting and I can not make sentences me. It was not interesting and I can not make sentences with the words I had lists of words and do the tasks. I did not like anything. It was so boring. It was I because we were finite and we do not have plenty of examples to find the explanation of the word we do not know. I can not think about a challenging of the word we do not know. I can not think about a challenging aspect of the manageable, so a student who does not know how to use a computer, can easily in TTM I like least the fact that I did not had the opportunity to think, and for everyone is well-known to all and they would not have problems. ...

Figure 5. Thirty-three of 33 concordance lines of *not* from ILs' responses regarding TTM

When discussing TTM, the ILSs used the word “not” in 33 concordance lines; in 33 out of 33 sentences, the word “not” was used in a negative way, such as “not like,” “not sure,” “not suggest,” etc. The ILSs raised issues of dislike, loss of interest, boredom, and so on.

A similar comparison was performed between the responses of the advanced level students (ALSs) regarding CTM and TTM. The concordance lines in Figure 6 show the ALSs’ responses to CTM:

their meaning. The only thing that was not as good was the exercise that needed to be felt unable to write them, because I had not found their right meaning. It was more my own sentences with words that we did not know exactly that they mean. Task 3 became a kind of meanings the word had. I did not like so much that the meaning of the word at each word means. The fact that it did not have the whole sentences and after a spot after a spot they were cut off. That it did not help me to understand the meaning of the the meaning of the word because I did not have whole vision of each sentence. The sentences to understand the correct. I did not like Task 3, because I found very difficult to understand easier the unknown words. I did not like the task 3 where we had to write our own sentences. I do not think that it had any challenging aspects. It is easier to understand the word. I did not like very much the fact that it takes some time in the end that seems enjoyable (so it's not really a problem, you just have to get used to it). Tiring Task 3 because many words are not totally understood so it was difficult to correct to make sentences with words that are not still known for us, so it demanded attention delayed the process, but the CTM had not had any considerable disadvantages. The

Figure 6. Fifteen of 15 concordance lines of *not* from ALSs’ responses regarding CTM

The ALSs used the word “not” in 15 sentences; three of 15 concordance lines (10, 12, and 15) are totally positive. The rest of them are negative but raise very specific issues (e.g., specific task, not whole sentence, etc.). The clearly negative sentences raise issues such as:

- Change of meaning from one concordance line to another
- The exact meaning not found
- Not having the whole vision of a sentence (obviously due to the students not yet being used to the capabilities of the software).

The same search about the ALSs’ opinions on TTM yielded the following concordance lines, as shown in Figure 7:

how to work with that method. I did not like that we had only one example.
students angry because they can not find the meanings. It was less tiring
n. Unfortunately, I sometimes had not even understood the meaning of th
to acquire new knowledge. I would not suggest this method to others, bec
is I like most in that method. I can not work with the same happiness with
al, so nothing was interesting. I do not like something. There was not a ch
I do not like something. There was not a challenging aspect of TTM. It was
y unknown word and even we have not understood a word we can focus on
ited options for each word. I would not suggest TTM, because it required t
r me. It was a difficult method. I did not like something best. You had only
ind out what does it mean. You did not have alternative solutions. Someth
g which would help me more. It did not have challenging aspects. As a me
and complicated because you did not have a variety of sentences to react
. It has many disadvantages. It did not help me. It was difficult for me to fi
TM I found nothing of interest. I did not like something. You can understan
stand entire text. This method I do not think that motivated someone more
e meaning in the sentence. I would not suggest a friend this method. It wa
uggest a friend this method. It was not boring because it has many tasks I
g because it has many tasks It did not give many chances to find the mea
the meaning of the unknown words not only from reading the passage but
and see what I had written, I could not do it. This method was tiring and th
: the meaning of the word and I did not have to struggle and find out the m
ave in ordinary schools and it was not challenging. This method had not h
: not challenging. This method had not had anything interesting, because i
: cause we are used to it and I would not recommend it to a friend. It did not
not recommend it to a friend. It did not take much time to be accomplished
uch time to be accomplished. I did not like at all the fact that I had to deal
ch more easy. The fact that we did not have examples made it of course n
at the same time challenging. I did not really like something; on the contra
g of the word only from the text I do not know. It broadens our critical thinki
exhausting and boring so we could not pay as attention as it needed. That
iat helps to focus on words. It was not so interesting and I had some diffic
e meaning of words, because I did not have some assistance (such as co
aking my own sentences. TTM did not motivate me more because this me
rate me more because this method not only was less interesting but it req
ired much more time, too. I would not suggest the traditional method bec
thod because most students would not be so interested and attracted to th

Figure 7. Thirty-seven of 37 concordance lines of *not* from ALSs' responses regarding TTM

The ALSs used the word “not” in 37 sentences; the collocates of *not* show that in all cases, the word “not” was used in a negative way, such as “not motivated,” “not like,” “not suggest,” etc. The ALSs raised issues of dislike, unwillingness to recommend TTM, uninteresting approach, and so on. A semantically positive occurrence of the word “not” was observed in almost half the responses to CTM (25 of 53), whereas a semantically negative occurrence of the word “not” was observed in all the responses to TTM (93 of 93). The semantic prosody of the word “not” is used to express both contentment and frustration in the case of CTM but only frustration in the case of TTM. Such an observation is congruent with the years of work in corpus and functional linguistic research that clearly points to the role of context and phraseology, not just words, in language and meaning. This supports my argument that the students used the word “not” in a clearly negative sense when commenting on TTM but not when commenting on CTM which reveals that they were definite about their negative opinion of TTM and not that definite about their negative opinion of CTM.

4.3.3. Collocates of more

The second stage of the corpus linguistic analysis focused on the most frequent adjective used by students in their responses. The most frequent adjective used by all students when writing about CTM is shown in Figure 8:

Count	Pct	Word
451	8,1393%	the
249	4,4938%	to
204	3,6816%	I
182	3,2846%	and
166	2,9958%	it
149	2,6890%	of
136	2,4544%	because
122	2,2018%	method
110	1,9852%	a
108	1,9491%	more
104	1,8769%	ctm
101	1,8228%	was
97	1,7506%	that
84	1,5160%	words
80	1,4438%	is
78	1,4077%	word
69	1,2453%	this
69	1,2453%	meaning
67	1,2092%	me

5,541 words, 580 types

Figure 8. Results for most frequent adjective from student responses regarding CTM

As Figure 8 shows, the most frequent adjective was the comparative “more” (108 times). Figure 9 summarizes the collocates found to the immediate left and the immediate right of *more*, thus indicating the adjectives or nouns that the students preferred to use before and after *more*.

T-Left	1-Right	2-Right
20 is	22 interesting	19 and
20 was	17 to	15 learn
16 me	6 because	14 to
6 and	6 easy	8 I
6 learn	4 convenient	6 the
3 had	4 than	6 than
3 have	3 opportunities	4 for
	3 options	4 because
	3 modern	3 one
	3 effective	3 it
	3 examples	3 method
	3 creative	

Figure 9. Collocates of *more* from student responses regarding CTM

As Figure 9 shows, the most frequent word found in the immediate right position was “interesting.” The next most frequent was the full infinitive “to learn.” To provide more detailed evidence for my claim that most students felt more positively about CTM when compared with TTM, I looked closer at how my students were using the comparative adjective “more” in the corpus of their responses regarding CTM. The concordance lines in Figure 10 show the student responses to CTM:

... The CTM method **is more interesting** because we have contact with the technology. I suggest this method because **it is more interesting and** you have more opportunities to learn because it is more interesting and you have **more opportunities to learn**. It was an easy way to use because it was not boring. So many examples may drive us to **more answers and** to get tired until we finish. I think it is difficult to fill in the blocks, because there **was more than one** possible meaning for every word. I suggest this method because I use it and I had not found their right meaning. **It was more modern and** appealed to me, though to the fact that it is in search in computer. The CTM motivates **me more to learn** than TTM because CTM is a very creative and it gives more knowledge. I suggest the CTM because **it is more interesting and** we have more opportunities to learn because it is more interesting and we have **more opportunities to learn**. It was easier, more interesting and included sentences which were more interesting than many words as you want. CTM because **it was more creative and** innovative I liked that we had more fun and more challenging. The CTM method attracted **me more than** the TTM method because it was something different. TTM method is better than the TTM because the **more** examples you read about a word the better you understand the meaning of the words. Many words had **more than one** meaning and we had to find the appropriate meaning of the words. CTM, because I learnt **more things** while using it. Also using computers while using it. Also using computers makes it **more appealing to** the students and they pay more attention to it. I like it because you had a big variety of words; it helps me to learn new words. **It was more interesting and** put me to the curiosity to try and find that helps me very much. CTM definitely! **More** attractive, challenging and interesting. Easy to use. Cooperation with the computer. I learned **more words** than those which had given to me. This method is better than those which had given to me. This method is **more interesting and** attractive for the student. I believe that first method, CTM, **motivated me more to learn** because is more creative and easy to use. CTM, motivated me more to learn **because is more creative and** easy to use for a student like me because I will find it easy to understand a word reading **more than one** sentences with the same word. It gives me more chances to find the meaning of the word. I liked use the computer This one because **it is more interesting** method for learning words. It had interesting aspects. The CTM method **motivated me more to learn** because it was more interesting than the other method. It motivated me more to learn because **it was more interesting** than the other. I would suggest this method because it was easier and fast to find the suitable meaning. This method **was more convenient,** I could find a word easier and fast to find the suitable meaning. This method **was more effective** because I could choose the sentence which I wanted. I would suggest this one because **it was more convenient** than the traditional method. In addition, it was easier to find on my own the meaning and **it was more helpful** for me to remember the meaning of the words. I believe that the CTM motivated me **to learn more,** because I had to struggle in order to find the meaning of the word was maybe a little **more time** consuming as I mentioned before but I liked it. I believe that the CTM method **motivated me more,** because through the examples I would try to find the meaning of the word and it was **more easier** for me to remember the meaning of the word. I believe that the CTM method **motivated me more,** because it was more interesting and it motivated me to learn new words and critical skills This method because **it was more interesting and** motivate us more to learn new words because it was more interesting and motivate us **more to learn** new words CTM because it was more interesting and motivate us **more to learn** new words CTM because **it was more creative,** enjoying and easier way to learn if

Figure 10. Forty of 40 concordance lines of *more* from student responses regarding CTM

Figure 10 shows how the students used the term “more” at sentence level to explain why they considered CTM “more interesting,” “more convenient,” “more appealing,” and so on. For instance, if we look at the first concordance line from the top of Figure 10 and the first one from the bottom, we can see how the students explained why they felt CTM had something more to offer. To investigate how they used the term “more” to explain their adverse attitude to CTM, we can, for instance, look at the fourth concordance line from the top of Figure 10, “...So many examples may drive us to more answers and to get tired until we finish.” The corpus-style analysis thus offers a more in-depth picture of what the students were thinking when they used the comparative adjective “more”.

The same searches as shown in Figures 9 and 10 respectively were carried out using the corpus of opinions offered by the students when writing about TTM. Figure 11 summarizes the collocates appearing to the immediate right of *more*:

more]	
Play Window Info	
1-Left	1-Right
6 is	10 difficult
3 me	7 time
3 was	3 to
3 much	3 because

Figure 11. Collocates of *more* from student responses regarding TTM

As Figure 11 shows, the word most frequently used after “more” when students wrote about TTM was “difficult.” To provide more detailed evidence for my claim that most students felt there was usually something more negative about TTM when compared to CTM, I looked more closely at how my students were using the comparative adjective “more” in the corpus of their responses regarding TTM. The concordance lines in Figure 12 show the student responses to TTM:

your own sentences. TTM motivated me more because it is a traditional way
 own sentences. TTM did not motivate me more because this method not only
 method TTM does not make me to learn more because is required lot of time
 one example and that can make us think more carefully. The TTM was usual,
 e each method and find out which one is more convenient and easy for me. It
 pensive method. In contrast, the TTM is more detailed and enables the stude
 and for example if I make a mistake it is more difficult to rewrite in the paper.
 ng; on the contrary it makes my learning more difficult That it was too difficult
 did not have examples made it of course more difficult to find the meaning of t
 ust by one example. The exercises were more difficult than the first challenge
 not very good because is boring Ttm is more difficult because it tired me Wll
 my one I did not suggest ttm because is more difficult Can anyone without a c
 it any examples which made it of course more difficult but at the same time ch
 S VIEW OF TEXT WAS MORE TIME AND MORE DIFFICULT THE OLD METHOD
 it there were not any examples so it was more difficult for me to find the mean
 THE NEW WORDS IT WAS BORING AND MORE DIFFICULT TO UNDERSTAND
 nderstand the meaning of the word much more easy. The fact that we did not h
 it, they have not the opportunity to have more examples for finding it. The mo
 ing. No motivation in this method It was more familiar to me. It was not intere
 word and the process was fast. I needed more knowledge and there were not
 unknown word could mean. I could think more on each word and try to find its
 ECAUSE IS CLASSIC TEACHING WHERE MORE STUDENTS HAVE LEARNED TI
 s method I liked least that when you had more than the specific unknowns wor
 a word. I had to read the whole passage more than one time in order to under
 d and enables the student to learn many more. The TTM was very tiring. The
 : were not examples to help us. I needed more time. I did not have many choi
 rd and try to find its meaning. It required more time to find the meanings and
 ind the meaning of a word and that costs more time. You can make your own
 s difficult and boring. This method needs more time and it is too difficult. TTM
 was less interesting but it required much more time, too. I would not suggest
 of a word and this method took me much more time. Making my own sentence
 G THE MEANINGS VIEW OF TEXT WAS MORE TIME AND MORE DIFFICULT T
 ad I do not think that motivated someone more to learn because it's so much
 ot any examples so I had to concentrate more to find the meaning of the work
 of one word. In TTM student has to read more, to memorize every word and n
 no other help In this method I believe is more usually and manageable, so a

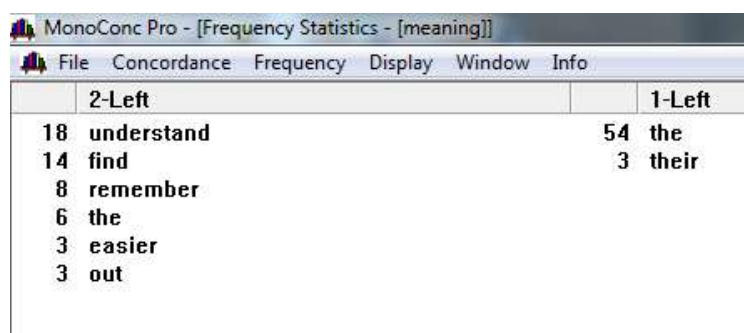
Figure 12. Thirty-six of 36 concordance lines of *more* from student responses regarding TTM

As shown in Figure 12, the comparative adjective “more” was used 36 times. A brief look at the immediate right collocates of *more* reveals the students’ negative attitude toward TTM because they mostly used the phrases “more difficult,” “more time,” and so on. However, the corpus-style analysis, drawn from Figure 12, shows how the students used the term “more” at sentence level to explain why they considered TTM “more difficult,” “more familiar,” and so on. For instance, if we look at the second

concordance line from the top of Figure 12, “...TTM did not motivate me more because this method not only was less interesting,” we can see how the students justified their feelings that they were not motivated by TTM. They seemed to be wondering why TTM might motivate them more and, at the same time, providing the answer in the same sentence. Also, if we look at the first concordance line from the bottom of Figure 12, “I believe is more usual and manageable,” we can see how the student explains why they felt TTM has something more to offer. My point is that, apart from calculating the collocates of *more* to its right or left and drawing conclusions, we can easily look more closely at each concordance line and discern how and why the students used the term “more” in the way they did. This is also particularly useful when triangulating with other types of data involved in this research, namely the OES responses. The corpus-style analysis thus offers a more in-depth picture of what the students were thinking when they used the comparative adjective “more” when commenting on TTM. The evidence offered in Figures 10, 11, and 12 shows that students felt that TTM was more difficult than CTM, which generally means that they believed there was something more involved in the process of learning when using CTM rather than TTM.

4.3.4. Collocates of meaning

The next most frequent words after “more” offered by all students when writing about CTM were “word(s)” and “meaning.” Between “word(s)” and “meaning,” I chose to investigate the collocates of *meaning* because I thought it would be more interesting to see how my students would evaluate the meaning of unknown vocabulary according to their responses about CTM and TTM. Figure 13 shows the collocates to the immediate left of *meaning*. I chose to look at the immediate left ones because I mainly wanted to observe what verbs the students put before the noun “meaning” according to their responses about CTM and TTM. The verbs “understand,” “find,” and “remember” were mostly used by the respondents when commenting on CTM.



MonoConc Pro - [Frequency Statistics - [meaning]]	
File Concordance Frequency Display Window Info	
2-Left	1-Left
18 understand	54 the
14 find	3 their
8 remember	
6 the	
3 easier	
3 out	

Figure 13. Left collocates of *meaning* from student responses regarding CTM

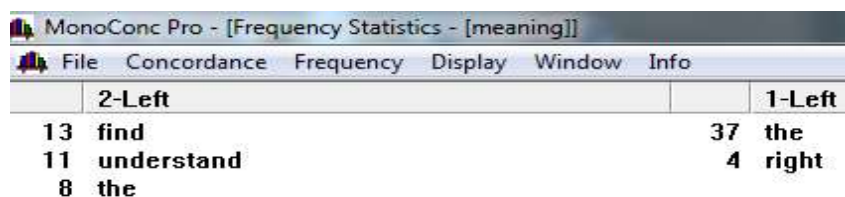
A first examination of the concordance lines indicated that the students felt that when using CTM, they could understand, find, or remember the meaning of unknown words better than when using TTM. This is shown when looking at the phraseology to the left of the key phrases “understand the meaning” or “found the meaning,” and so on. Figure 14 shows these words in context:

CTM method like to me that you can find easier the meaning of the words. I like it because it is more supportive and encouraging to comprehend the meaning of words. I like it because the examples were really helpful to find the meaning of the given unknown word. So I could understand more easily the meaning of the words. I prefer the CTM method because I found it easier the meaning of the words. I suggest the CTM method because I found it easier the meaning of the words. Alternative sentences and the users comprehend the meaning of each word. I like unknown word. So I could understand more easily the meaning of the words. I like the examples to find the word and it is easier to find the meaning. There was a lot of words for what we can understand the meaning of the word. I like it because it is not cut off. That it did not help me to understand the meaning of the word because of the lack of consistency therefore I can not understand the meaning of words. The CTM method is good for each word many sentences to understand the meaning and it is more natural and complete sentences and I could not find the meaning. There is not a reason to learn because it is more easy and quickly to find the meaning of the unknown words in texts and I am getting confused in order to find the meaning of the word. I like the CTM method because it was easier to find the meaning of each word. I like it because it can help you when you need to find the meaning of a word fast. I had to read a lot of passages in order to find the meaning of the unknown words. There were too many sentences given to us to find the meaning of the words. In addition we had many examples to help us find the meaning of the word and you could choose each one and try from their meaning to find what we can understand the unknown words and be surer about their meaning. It was tiring for the people who use it and help them to find the meaning of words. All this is helpful to learn new words and to understand their meaning. The only thing that keeps you all the time awake until you find the meaning of the words. I like it because it is more easy to find out the meaning of the world. I like it because it is easier and without spending lot of time for the meaning of words. The CTM method is the same word. It gives more chances to find the meaning of the word. I like it because it was an easy and a funny way to find out the meaning of the words. I like it because the sentences with this particular word to find out the meaning. Something that helps you study the examples and you try to find the meaning of the word with the examples it is easier for me to remember the meaning(s) of the words and it is very tiring. I had to find on my own the meaning and it was more tiring. I like the sentence help me more to understand the meaning of the unknown words, so it was a little challenging to find the suitable meaning. This method

Figure 14. Thirty-six of 69 concordance lines of *meaning* from student responses regarding CTM

Figure 14 further reveals that the phraseology at sentence level used before the abovementioned key phrases in context is positive such as “help,” “be surer,” “more easy,” “funny way,” “many sentences given to us,” “gives more chances,” and so on. This corpus-style analysis offers a more qualitative observation of the reasons why the students preferred one method over another. For example, if we look at the first concordance line from the top of Figure 14, “...CTM method like to me that you can find easier the meaning of the words,” we can see how the student justifies their preference, though their syntax is not accurate.

An analogous search was performed in the corpora of opinions offered by all the students when they wrote about TTM. The KWIC *meaning* was used again. The immediate left collocates were also examined in more detail, with the results shown in Figure 15:



2-Left		1-Left	
13	find	37	the
11	understand	4	right
8	the		

Figure 15. Left collocates of *meaning* from student responses regarding TTM

Figure 15 shows that the verbs “find” and “understand” were most frequently used in student opinions about TTM. It is worthy of note that the verb *remember* never preceded the noun *meaning* when the students commented on TTM but it did precede the noun *meaning* eight times when they commented on CTM (see Figure 13). I would argue that the students associate the retention of target vocabulary with CTM but not with TTM. My findings regarding the association of target vocabulary retention with CTM concurs with the findings of Akbari, Haghverdi, & Biria (2015) about the retention of collocations and with those of Daskalovska (2015) about better retention of information. Figure 16 shows the phraseology used before the verbs “find” and “understand”:

I sometimes had not even understood the meaning of the words in order to find the word I am looking for and try to guess its meaning. What I liked best about TTM is that we have to understand the general meaning of the paragraph without looking at it. In TTM it was difficult to understand the meaning of a specific word from the meaning of a specific word from the general meaning of the paragraph without looking at it. I think more on each word and try to find its meaning. It required more time to do this. I took us too much time to find the right meaning and finish the tasks. TTM is difficult to understand a word only from the meaning in the sentence. I would like to know the meaning of a word. It did not give many chances to find the meaning of the word. You learn how to use a certain word I could understand the meaning of the unknown words. The negative aspect of TTM was to understand the meaning of the unknown words by myself. I could ask my teacher to tell me the meaning of the word immediately. I needed to use it. My teacher told me the meaning of the word and I did not have to struggle and find out the meaning by myself. It was the same as the word which would help me understand the meaning of the word much more easily. It made it of course more difficult to find the meaning of the word but it was at least that it was too difficult to understand the meaning of the word only from the texts gave us the opportunity to guess the meaning of unknown words. The problem I had some difficulties to understand the meaning of words, because I did not have a dictionary. I had to read the text several times in order to understand the meaning of a word. I had to read the text more than one time in order to understand the meaning of a word and this method bothered me the fact that I could not find the meaning of the words easily. I failed to understand the whole text several times in order to find the meaning of a word and that costs a lot of time. When I see foreign words, I start thinking the meaning and I read again and again. The part that you have to find the exact meaning of a word in order to have a better understanding of the text. The difficulty finding the right meaning. The effort to find the right meaning. The effort to find the right meaning with one sentence's help. By using TTM I had difficulty in finding the meaning of a word because I had to read the text several times. It was hard to concentrate in text's meaning. The fact that I have to read the text several times in order to find the meaning of the unknown word and this method is easier to read a text and learn the meaning of the words. I really like TTM because it is so good that helped me to find the meaning of the words. The text is not so difficult level. We had to understand the meaning of each word from our text. The fact that you are able to understand better the meaning of the text and then you can find the meaning of the words and to include them in your vocabulary.

91

Figure 16. Thirty-six of 52 concordance lines of *meaning* from student responses regarding TTM

As Figure 16 shows, the phraseology used before the key phrases, “understand the meaning,” “find the meaning,” “guess the meaning,” and so on, is negative, including phrases such as “try,” “difficult,” “struggle,” “my teacher told me,” and “hard to concentrate.” For example, if we look at the first concordance line from the top of

Figure 16, the students say “...had not even understood the meaning of the words.” Overall, negative phraseology at sentence level before or after the KWIC *meaning* appears in 18 of 36 concordance lines of Figure 16 (i.e. 1, 3, 4, 6, 7, 8, 9, 16, 17, 19, 22, 23, 26, 28, 29, 30, 32, and 34). A comparison with Figure 14 shows how differently the students negotiated the meaning of unknown words when using one method or the other. It appears that when it comes to CTM, the notion of “meaning” is associated with a more positive context in the students’ minds.

5. DISCUSSION

The corpus-style analysis of my students’ responses presented in this study offered insights into aspects that might help formulate teaching recommendations in the future, including insights from other types of data. By addressing the teaching recommendations, teachers can better meet the ESP learning needs of their students in university settings.

The student responses offered useful reasons about why students liked or disliked CTM and TTM and generally showed how students approached both teaching methods. Also, a corpus-style approach to the analysis of the responses was offered. The students in this study liked CTM more than TTM and this was true at all ability levels, despite reservations that beginners might dislike corpus concordancing because it might be too difficult for them. The aspects of CTM that motivated students to indicate their preference for it were related to convenience and the variety of concordance lines, whereas the aspects that demotivated them were related to boredom and, in a few cases, the appearance of too many concordance lines. The multiplicity of concordance lines and word meanings offered in CTM were identified by intermediate and advanced students as the most challenging aspects of CTM; beginners, however, indicated that their main difficulty was not with the multiplicity of concordance lines, which, on the contrary, was their primary reason for liking CTM, but with computer searches that might take too long to show results and technical issues such as hardware/software compatibility with Windows version, difficulty in adjusting the size/number of characters displayed in each concordance line and limitations in understanding every little detail about the text searching software. Students of different abilities identified various challenges when taught using TTM. Intermediate and advanced students identified context-based learning as the most challenging aspect; beginners found the shortage of sample sentences a challenge. This seems to indicate that beginners did not actually have a problem with the multiplicity of concordance lines and instead found this aspect helpful and useful. Nearly all the students in this study stated that CTM/DDL motivated their learning more than TTM did. This finding is in line with Mizumoto et al. (2016: 241) who present “the learners’ perceived preferences and benefits of DDL,” and Marinov (2018: 238) who observes “a more positive attitude towards corpus use” on the part of students. More recently, Forti (2019: 375) found “better

language gains over time” with the use of DDL, and Elmansi et al. (2021: 59) observed “a positive attitude towards the DDL approach as it is considered to be a useful resource to acquire lexico-grammatical accuracy in order to improve EFL writing.” Overall, these aspects lead to positive learner attitudes as regards using corpus concordancing in ESP learning.

I initially thought that not all students in this study would like CTM; however, according to the qualitative findings, all students expressed a preference for CTM due to its convenience and ease. I initially expected that intermediate and beginner students would say that they liked the variety of concordance lines less often than the advanced students; however, they indicated that they liked the variety of concordance lines more often than the advanced students. A potential explanation for these findings is that intermediate and beginner level students may have already been disappointed by TTM before being exposed to CTM, so they had a positive attitude toward the latter method, whereas advanced students might have felt more confident with either teaching method and were thus more reserved.

6. CONCLUSION

The aspects of CTM that motivated the students’ learning more were linked to creativity and interest, with the variety of concordancing lines establishing more motivation among beginners and intermediate students rather than advanced ones. I conclude that all students regarded CTM as being creative and interesting and this finding should encourage teachers to include CTM in their teaching syllabus. Finally, nearly all the students in this study at all ability levels indicated that they would recommend CTM to a friend for several reasons but only a few held the same opinion about TTM and would not even say why. The aspects that motivated them to prefer CTM were linked to effectiveness and interest. I argue that CTM seems to have established itself as a better approach in the minds of the students, which should be considered by a teacher when modifying their teaching syllabus decisions. The above corpus-style analysis shows that CTM motivates ESP university students more effectively than the existing traditional learning method; hence a university teacher may wish to exploit the higher potential of CTM to interest students and to enhance motivation in their classroom.

The present study has a few limitations that should be acknowledged. Depending on the research focus and availability of space, a greater number of comparative adjectives could have been incorporated in the collocation analysis, for example, words ending in “-er” to supplement the analysis of “more”, or the “-n’t” contraction to supplement the study of “not.” It should also be acknowledged that frequency is not necessarily the most important criterion, as sometimes interesting observations are made and conclusions are drawn from single words or phrases.

This study showed that CTM can open new teaching and learning horizons in ESP university contexts in Greece and other countries. The utilization of corpus

concordancing tools to cover ESP students' learning needs can make learning different, effective, and more interesting. CTM may also provide an opportunity for ESP teachers and students at university level to create their own small and flexible corpora to suit the needs of their particular area of study.

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Appendix 1

Worksheet 1 for use with CTM and SP1 (Specialized Passage 1)

Linguistic Tasks Stage:

TASK 1: Reading Comprehension of SP1.

Read SP1 in the handout. Then look at the 10 words given and, with the use of the electronic corpus concordancer, try to understand the meaning of the ten given words and finally write their possible meaning in English or in Greek (the ten words are in bold and underlined in the text).

TASK 2: Fill in the gapped sentences using the words below in any suitable form and the corpus concordancer provided:

pervasive, underpin (verb), detriment, caveat, provision, lobby (verb), inclusive, disproportionate, favour (verb), mainstream (adjective)

TASK 3: Make your own sentences using the ten words given below and concordance lines you will find in MP2.2. Do not copy the concordance lines:

TASK 4: Underline (or put an X in the square next to) the meaning(s) of **caveat**. Wrong meanings count against your score. The 29 concordance lines below can help you:

1. ... samples drawn from different locales, but this **caveat** applies to almost all published ASD scales, ...
2. ... he's expected to obtain a mark of 65. The same **caveat** applies here. Equation E3e shows that ...
3. ... that his mark would be 51.3%. Again, the same **caveat** applies. To test whether exam performance is ...
4. ... and adults. There is no age barrier. The only **caveat** is that if the language training starts after puberty...
5. ... is the logical next step for this project. Another **caveat** is that, in the AS subjects of our study, a reduced ...
6. ... (see summary in Newcomb et al., 1993). A further **caveat** is that the present study used only one method ...
7. ... commonly used statistic and we present it with the **caveat** that it must be interpreted more cautiously than ...
8. ... and what we know now, but always with a kind of **caveat** that we've now learned that again these are not ...
9. ... there should be a warning or something, or a **caveat**, that says in some cases using manipulatives on ...
10. ...entered the current investigation with the known **caveat** that clusters are simply another form of categorical system ...
11. ...made above. However, we would want to add the **caveat** that the weighting attached to any outcome arrived ...
12. ... We give below an example, but must enter the **caveat** that because of its small order (n = 3) it converges ...
13. ... administration of the test was followed with the **caveat** that instructions were delivered in ASL rather than ...
14. ... question about informational text and kind of a **caveat**. That is, as much as possible you would like these ...
15. ... offers this document on the Internet with the **caveat** that, while readers can gain basic information about ...
16. ... you have a richer report for that, all with the **caveat** that one example isn't the only way to achieve a ...
17. ... For example, there is no need to include a **caveat** that a frog is in pain if its input is 1, and its output 0, ...
18. ... thought that that would be useful and with the **caveat** that the sample of the standards may differ over time. ...
19. ... questions on the test. And then, there was this **caveat** that said the further you get up the hierarchy, ...
20. ... which would be used for teachers and with a **caveat** that it isn't valid from year to year. An item analysis ...
21. ... one of them is, a- again just to stress this **caveat** that a lot of this, sort of logic, was built up in ...
22. ... thing in more than one manner. We offer one **caveat** to these specific conclusions. Research on persons ...
23. ... Attention must, however, be drawn to a crucial **caveat** to these rules. Case-law demonstrates that ...
24. ... uncertainty as to the validity of such decisions". The **caveat** to perpetual uncertainty is that where a decision ...
25. ... need not be the maximum profit. The final **caveat** to the question is that even if firms recognize that ...
26. ... kinds of passages. And she just sort of gave us a **caveat** to sort of think about that as you do that. ...
27. ... rather than differences in attention. An important **caveat** to this is that further studies are required to test ...
28. ... from regular walking. It is important to add a **caveat** to these findings, which are, in essence, ...
29. ... include many psychological studies. An additional **caveat** to this is that any benefits should be gained ...

- | | |
|---|-------|
| Meaning 1: An announcement containing information about an event | _____ |
| Meaning 2: A warning against certain acts | _____ |
| Meaning 3: A statement that limits or restricts some claim | _____ |
| Meaning 4: A type of expensive food served in luxury restaurants | _____ |
| Meaning 5: Anything we use to cover or hide something | _____ |
| Meaning 6: A positive result of a hard effort | _____ |
| Meaning 7: A kind of an answer or response to someone | _____ |
| Meaning 8: (law) A formal notice placed with a court or officer to stop a legal proceeding until the person who places the notice is given a hearing. | _____ |
| Meaning 9: A pleasant comment or remark | _____ |
| Meaning 10: A pleasurable activity performed | _____ |

Questionnaire Stage

Students fill in the CTM motivational questionnaire (Parts I, II, and III) given by the teacher.

Appendix 2

Motivational questionnaire about CTM (Parts I, II, and III)

General instruction:

I would like to ask you to help me by answering the following questions concerning foreign language learning. The following questions are given to you by me to better understand your thoughts and beliefs as learners of English. Please, read carefully the instructions and write your answers in each one of the sections. This is not a test so there are no “right” or “wrong” answers and you do not even have to write your name on it. The results of this survey will be used only for research purposes so please give your answers sincerely. The contents are totally confidential. Thank you very much for your help!

Part I: In this part, I would like to ask you to tell me how much you agree or disagree with the following statements by simply circling a number from 1 to 6. Please do not leave out any of items.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

Example: If you strongly agree with the following statement, write this:

I like dancing very much	1 2 3 4 5 6
--------------------------	-------------

1. The place of the lesson was convenient.	1 2 3 4 5 6
2. The tasks required critical thinking which made my learning easier.	1 2 3 4 5 6
3. The way the lesson was taught was a good aid to learning.	1 2 3 4 5 6
4. I need more help to totally understand words dealt with in the lesson.	1 2 3 4 5 6
5. The tasks were helpful for learning meaning of unknown vocabulary.	1 2 3 4 5 6
6. I was very confident in my abilities to use the passage.	1 2 3 4 5 6
7. I enjoyed filling in the sentences in Task 2.	1 2 3 4 5 6
8. I am very satisfied with the lesson.	1 2 3 4 5 6
9. The tasks required application of problem-solving skills which made my learning easier.	1 2 3 4 5 6
10. The method of presentation was easy to follow.	1 2 3 4 5 6
11. I think I will remember the words any time I meet them in the future.	1 2 3 4 5 6
12. I would like to participate in another similar lesson.	1 2 3 4 5 6
13. The activity was helpful for learning the usage of vocabulary.	1 2 3 4 5 6
14. I think I received new words in this lesson.	1 2 3 4 5 6
15. The classroom was comfortable enough for the activities.	1 2 3 4 5 6
16. This class experience has helped me improve my reading skills.	1 2 3 4 5 6
17. I found working with the passage very easy.	1 2 3 4 5 6
18. This class experience has helped me improve my learning skills.	1 2 3 4 5 6
19. The learning materials were convenient.	1 2 3 4 5 6
20. The lesson made me much more productive.	1 2 3 4 5 6
21. The teacher was an active class member offering direction where needed.	1 2 3 4 5 6
22. I was able to get personal attention from my teacher when needed.	1 2 3 4 5 6
23. I feel confident to produce relevant sentences on my own in the future.	1 2 3 4 5 6
24. The lesson did not meet my learning needs.	1 2 3 4 5 6
25. The teacher is knowledgeable enough for the type of activities I did.	1 2 3 4 5 6
26. I would recommend the lesson to others.	1 2 3 4 5 6
27. The time of the lesson was convenient.	1 2 3 4 5 6
28. I do not feel confident enough to handle similar tasks in the future.	1 2 3 4 5 6
29. In the future, I will be able to deal with a new but relevant activity and understand unknown words following this learning approach.	1 2 3 4 5 6
30. The lesson made learning more interesting.	1 2 3 4 5 6
31. I enjoyed working with the passage.	1 2 3 4 5 6
32. I felt the need to ask for synonyms of some unknown words.	1 2 3 4 5 6
33. I enjoyed making sentences in Task 3.	1 2 3 4 5 6
34. It was hard for me to deal with Task 4.	1 2 3 4 5 6
35. In Task 4, I could discover different meanings of the given word.	1 2 3 4 5 6

Part II (on Thessaly Corpus):

1. The operation of the Thessaly Corpus was stable.	1 2 3 4 5 6
2. The Thessaly Corpus provided content that exactly fitted my needs.	1 2 3 4 5 6
3. I feel good about the idea of a new syllabus which will include the Thessaly Corpus.	1 2 3 4 5 6
4. In this Thessaly Corpus lesson I feel I learnt more than I used to.	1 2 3 4 5 6
5. The Thessaly Corpus should be used in learning vocabulary.	1 2 3 4 5 6
6. The Thessaly Corpus should be used in learning syntax.	1 2 3 4 5 6
7. The Thessaly Corpus provided interesting content.	1 2 3 4 5 6
8. I feel the Thessaly Corpus lessons are more effective than the lessons I used to have.	1 2 3 4 5 6
9. The Thessaly Corpus provided up-to-date content.	1 2 3 4 5 6
10. The Thessaly Corpus was easy to use.	1 2 3 4 5 6
11. The Thessaly Corpus made it easy for me to find the content I needed.	1 2 3 4 5 6
12. The Thessaly Corpus was user-friendly.	1 2 3 4 5 6
13. The Thessaly Corpus provided sufficient content.	1 2 3 4 5 6
14. The Thessaly Corpus was easy to access.	1 2 3 4 5 6
15. I had some difficulty in using the Thessaly Corpus due to unfamiliar vocabulary on concordance lines.	1 2 3 4 5 6
16. The Thessaly Corpus provided personalized learning support.	1 2 3 4 5 6
17. I had some difficulty in using the Thessaly Corpus due to cut-off sentences in concordance output.	1 2 3 4 5 6
18. The Thessaly Corpus responded to my requests fast enough.	1 2 3 4 5 6
19. The teaching methods provided by the Thessaly Corpus were easy to understand.	1 2 3 4 5 6
20. I had difficulty in using the Thessaly Corpus due to too many sentences in concordance output.	1 2 3 4 5 6

Part III

Please provide the following information by ticking (✓) in the box or writing your response in the space provided.

Full name: Gender: Male Female

Nationality: Greek Non-Greek Age: 18 19 20 21 22 Other:...

Year of English studies: 1 2 3 4 5 6 7 8 Other:.....

Your level according to placement test: Beginner Intermediate Advanced

Thank you for your cooperation 