TEACHING ENGLISH VIA CORPUS CONCORDANCING IN A GREEK UNIVERSITY

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Abstract

This thesis focuses on teaching English via corpus concordancing in a Greek university and is motivated by a need to find an improved approach to teaching and learning English for Specific/Academic Purposes so that university students improve their English language skills and motivation. I assemble a corpus of thirty million words containing texts from the domains of Special Education, General Academic, and General English. I compare and contrast a corpus teaching method (CTM) to a traditional teaching method (TTM) in terms of student performance in linguistic tasks and student motivation. I particularly explore (1) the extent to which CTM is more effective than TTM with regard to student performance as measured by the overall percentage of correct responses in student performance tasks, (2) the extent to which the effectiveness of CTM with regard to student performance on performance tasks is moderated by the ability level of the student (beginner, intermediate, advanced), (3) the extent to which the effect of method on student performance is mediated by student motivation after controlling for student level, and (4) what it is that motivates university students in Greece when involved in corpus concordancing compared and contrasted with existing traditional practice in learning English.

Apart from performance measurement by percentage in four linguistic tasks assigned to students in the quantitative portion of this thesis, further data collection procedures to estimate motivation were item analyses of two motivational questionnaires, one about the contrast between CTM and TTM and one about the corpus concordancing software used in this study. The qualitative portion employs the use of an open-ended survey with five questions about CTM and TTM and a corpus style analysis of the survey. The objective of the qualitative part is to determine to what extent student motivation informs students' preferred teaching style when asked to compare CTM and TTM, and to identify motivational and demotivational factors when using the one learning method or the other.

The quantitative and qualitative findings are triangulated in order to validate interpretations. Key points of convergence between the quantitative and qualitative results are identified, which allowed a description of key student benefits and difficulties when CTM is used. An analysis of benefits and difficulties constituted the

basis for the development of a suggested teaching unit to be utilized by teachers of English at university level.

I demonstrate that CTM is more effective than TTM in the student performance tasks and that CTM is effective across all student ability levels with the advanced students performing better than the intermediate and beginner students. I also demonstrate that the sample of students was more motivated to learn English via CTM than via TTM and that student general motivation is a mediator in terms of the relationship between the teaching method and student performance. Finally, I demonstrate important features that motivate or demotivate students when following CTM or TTM.

Based on the overall findings, I recommend a CTM exemplary teaching unit to be used by teachers who teach English at tertiary level. This thesis also offers useful guidance and practice to teachers of English and students on how to make use of a corpus concordancing software program to fulfil their teaching and learning purposes, respectively.

Table of Contents Page

List of Figures Page

List of Tables

LIST OF ACRONYMS

ALS	Advanced Level Student
ANOVA	Analysis Of Variance
BALEAP	British Association of Lecturers in English for Academic Purposes
BLS	Beginner Level Student
BNC	British National Corpus
CALL	Computer-Assisted Language Learning
CEFR	Common European Framework of Reference for Languages
CL	Corpus Linguistics
CLEC	Chinese Learner English Corpus
CLT	Communicative Language Teaching
COCA	Corpus of Contemporary American English
COMETVAL	Corpus Multilingüe en Turismo de Valencia
CTM	Corpus Teaching Method
DDL	Data Driven Learning
EAP	English for Academic Purposes
EFL	English as a Foreign Language
EGP	English for General Purposes
ELT	English Language Teaching
EPP	English Profile Project
EQ	Emotional Quotient
ESA	Engage Study Activate
ESL	English as a Second Language
ESOL	English to Speakers of Other Languages
ESP	English for Specific Purposes
ICE	International Corpus of English
IELTS	International English Language Testing System
III	Illustration-Interaction-Induction
ILS	Intermediate Level Student
IQ	Intelligence Quotient
KWIC	Key Word in Context
MICASE	Michigan Corpus of Academic Spoken English
MP2.2	Monoconc Pro 2.2
OES	Open Ended Survey
OTABAWS	Oxford Text Archive of British Academic Written & Spoken English
PPP	Present-Practice-Production
PT	Placement Test
QRQ	Qualitative Research Question
S-CG-AE	Sub-Corpus of General-Academic English
S-CGE	Sub-Corpus of General English
S-CSEE	Sub-Corpus of Special Education English
SD	Standard Deviation
SP1	Specialized Passage 1
SP2	Specialized Passage 2
SVO	Subject–Verb–Object
TC	Thessaly Corpus
TTM	Traditional Teaching Method
WKP	Word Knowledge Pretest

CHAPTER 1

Introduction 1.1

This thesis presents a comparative analysis between two approaches to teaching English to university students with Greek as their native language. The traditional approach is the existing teaching method within the English course being taught typically involving the reading of handouts of academic English texts in class and developing strategies of understanding unknown vocabulary or grammatical phenomena. The new method is one which makes uses of electronic corpora, which are collections of texts in electronic form used for linguistic research and language teaching. This linguistic research is facilitated by special, electronic search engines called corpus concordancers. I compiled my own corpus, the Thessaly Corpus (TC), named after the university I work for, for the purposes of this investigation.

This research was born out of the necessity to modify and improve the English course of the Pedagogical Department of Special Education of the University of Thessaly. I will also implicitly explore to what extent teaching English for Specific Purposes (ESP)/English for Academic Purposes (EAP) via corpus concordancing meets the criteria set by the British Association of Lecturers in English for Academic Purposes (BALEAP) competency statements (2008) that define how an ESP/EAP teacher will be able to facilitate students' acquisition of the language, skills, and strategies needed for studying in a university context. For example, one of the issues I address in my thesis is to what extent important criteria set by BALEAP, such as "critical thinking" and "student autonomy" (BALEAP 2008: 3), are followed in teaching. In my study, 'critical thinking' refers to students' ability to analyze, synthesize, and evaluate information they find or are provided with while 'student autonomy' refers to student's ability to come to a point of self-directed learning so that teachers play only the role of facilitators. Although student autonomy and critical thinking are not systematically and exclusively investigated in this

research, some implications may be generalized as a result of contrasting Traditional Teaching Methods with Corpus Teaching Methods.

1.2 The rationale for the present study

This section describes the motivation for the present study, the teaching and learning context, and some of the challenges my students and I face during the implementation of my English course. I will particularly outline what the content of the existing English language course is and issues that necessitated a change in its methodology such as issues of motivation and problems with reading comprehension of specialized texts. I will also describe specific constraints faced in this teaching context such as optional attendance, no set course book, and overall student workload.

In the absence of a systematic state curriculum for teaching English in tertiary education, Greek universities have adopted an attitude of improvisation and experimentation. Most university foreign language departments have attempted to create their own syllabuses or teaching and learning units based on availability of time, staff, and materials. For decades, the majority have taught EGP by using some well-known commercial course books. Over the first decade of 2000, some Greek universities have started to teach ESP/EAP based on a content-based approach, with emphasis on specialized vocabulary. For instance, business departments introduced specialized business English texts found in commercial course books focusing mainly on business vocabulary. An example of a departmental webpage of another Greek university appears in Appendix 1.1. The English language policy of the department of Special Education of the University of Thessaly follows a content-based approach to English language teaching focusing on educational or pedagogical vocabulary encountered in English texts in journal articles and/or audiovisual material. However, the program of the foreign languages office of the university has announced a general mission only but not a specific policy or syllabus or set of teaching units that could stand as a guide to teachers and students (see Appendix 1.2). This is a limitation to the English program

because it lacks specific teaching and learning orientation so a more targeted syllabus or set of teaching units should be suggested.

The university students who participated in this research are native speakers of Greek, drawn from various parts of the country after having passed the University Entrance Panhellenic Examinations. Beginners, intermediate and advanced users of English were included. They had studied English as a foreign language for some years while attending primary and secondary school. The English course my students attend at university lasts four semesters and focuses on teaching academic skills relevant to their field of study, which is special education and pedagogy. The name of the course I teach is *English 1*, which is taught to the first-semester students of the department of Special Education of the University of Thessaly (see detailed structure and content of my course in Appendix 1.3). This course enables students to practice their reading skills and learn how to use unknown vocabulary in specialized reading passages. Students are typically taught how to understand English passages with pedagogical content by means of the teacher's reading passages aloud to the students while the students read along silently. The teacher then asks them to try to comprehend unknown vocabulary by means of contextualization with or without the teacher's assistance or monolingual dictionary use. However, when my students meet unknown words in passages they are reading, the context in the sentence or paragraph is not necessarily sufficient for them to find out the meaning of the unknown word; even after reading a relevant passage twice or more times they still struggle to discover meaning and do not achieve what I want them to achieve. Therefore, this approach to teaching seems to affect student motivation. In this traditional approach to teaching English, students depend too much on the teacher or on dictionaries when exploring the meaning of unknown words or when trying to understand various grammatical phenomena. I see corpus concordancing as a way to improve my teaching in such a way that students will have an opportunity to investigate and possibly discover meaning through an alternative learning method. The way I teach the English lessons needed some change so an investigation of a new teaching method using corpora was potentially useful for my future teaching and for my students who usually struggle with the traditional approach. Shaw

(2011: 5) considers corpus concordancing as an alternate approach for students who seem to be having difficulties with the traditional approach.

While all ESP/EAP teachers and materials makers are confronted with various real problems and constraints when teaching and when creating teaching units, some particular challenges or constraints are present in this teaching and learning setting.

First, the university has defined learning English as obligatory before receiving a bachelor's degree, but attending my English course, as for all other courses (either English or Greek), is not compulsory for students. Student attendance needed to be improved. Therefore, I had to take new teaching decisions, such as applying corpus concordancing to my teaching, with the intention of making my lessons more appealing to students and thus improving student attendance.

Second, there is no book about teaching English to Special Education students in the ELT market suitable for me to use in my classroom. I had to address this constraint by receiving official permission to select and photocopy English texts found in the university library and by preparing tasks relevant to them, which is usually an onerous and demanding task when performed along with lesson preparation duties, such as task design and lesson planning. This may be regarded as a "policy constraint" (O' Brien 1998, Vol. 1, Unit 0: 11) given that there is no official university policy on that difficulty.

Third, the learners have limited time to study ESP/EAP because they are overburdened with studying other Greek courses, which are considered more crucial (see Greek courses in Appendix 1.4). This constraint becomes sometimes even more serious because, as mentioned above, classroom attendance is not compulsory so learners miss classes and are not in constant touch with English.

Considering the learning and teaching situation as outlined above, this thesis is motivated by a need to find an improved approach to teaching and learning in the specific university situation. If an improved teaching approach is found, then my university students may improve their English language

skills and motivation. To understand what the newly-suggested learning method (Corpus Teaching Method or CTM) entails, I will describe, in the next section, basic concepts related to corpus linguistics.

1.3 The advent of corpus linguistics

This section prepares the ground for important corpus linguistics terminology used in the literature review discussed in Chapter 2. The emergence of corpus linguistics as part of a communicative approach to language teaching and learning was inevitably accompanied by the emergence of new terminology used to describe that particular discipline. Therefore, I will briefly – and non-exhaustively – explain important terms used in the literature on learning and teaching via corpora. I will discuss the following terms: 'communicative approach', 'corpus linguistics', 'Data Driven Learning' (DDL), 'corpus-concordancer', 'corpus-assisted language learning', 'inductive' and 'deductive' teaching.

The 'communicative approach' to language learning and teaching, commonly referred to as communicative language teaching, appeared in the 1970s and 1980s when the learning and teaching focus shifted from the mechanical practice of language forms known as the Audio-lingual Method to tasks that engaged students in more purposeful and genuine language use. If a communicative approach to learning via corpora is employed, then students in groups, pairs or individually become involved in the negotiation of meaning in context and thus knowledge acquisition becomes a procedure in which students themselves observe discourse and draw conclusions about language use (Cresswell 2007: 269). This leads to more positive learning outcomes because the use of corpora enhances "active student-centered learning" or student engagement (Jalilifar, Mehrabi, and Mousavinia 2014: 745) and motivates students "by introducing an element of discovery" Gilquin and Granger (2010: 8).

‘Corpus linguistics’ is the study of language as expressed in samples of "real world" text commonly known as corpora. It is accepted that communicative methodologies contribute to connecting language teaching with corpus linguistics. As Mahlberg puts it, “communicative approaches and corpus linguistics share the view that language is used in context” (in Flowerdew and Mahlberg 2009: 109). It is important that students be exposed to language in context because knowing a word implies far more than knowing a definition. Other components are involved such as the word's syntactic environment, collocational potential, register, prefixes and suffixes, and semantic relationships with other words (Nagy 1995: 11). If students understand that there is more to word than its translation or definition, they become active explorers of more context around target vocabulary, thus learning more effectively and improving long-term retention of information.

‘Data Driven Learning’ (DDL) has been an umbrella term for numerous ‘corpus-assisted’ or ‘corpus-supported’ activities, permitting several interpretations and developments. DDL is also another name for ‘inductive’ teaching in which students look at electronic concordance lines to form rules, in contrast to ‘deductive’ (or traditional) teaching in which students look at rules in order to perform tasks. The basic principles of DDL are extensive exposure to language and active learner involvement (Johns, 1986). According to Reppen (2010: 53), “[a]nytime students are actively involved in learning, student learning is enhanced and learning is more enjoyable.” DDL particularly involves the use of language corpora, where students receive active experience of utilizing an electronic corpus via guided activities or materials that are based on corpus evidence. A brief example exercise using DDL is to assign students to work out the basic difference between the synonyms *injury* and *wound* by comparing two sets of randomly selected electronic ‘corpus concordance’ lines, which are simply different, cut sentences that contain the word we want to investigate in its context or so-called key word in context (KWIC). Figures 1.1 and 1.2 show concordance lines of *injury* and *wound*, respectively, retrieved with Monoconc Pro 2.2 (MP2.2) tool (Barlow, 2003).

Figure 1.1: Eight concordance lines of injury retrieved with MP2.2

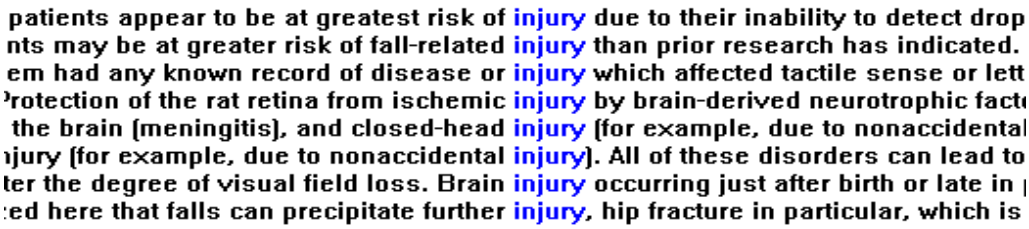
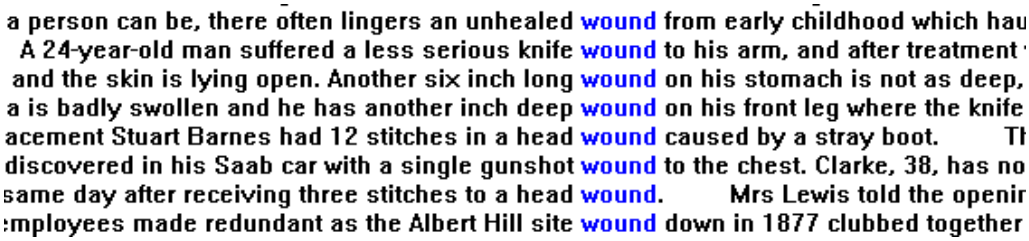


Figure 1.2: Eight concordance lines of *wound* retrieved with MP2.2



This is a simple example of what DDL may offer to the English language learning classroom. This example is used here because Greek students find it hard to understand the difference in meaning between *injury* and *wound* because the two nouns have the same translation in Greek (τραύμα). The two different sets of concordance lines in Figures 1.1 and 1.2 offer students the chance to see what sort of words come usually before or after *injury* and what sort of words come usually before or after *wound*. This helps them work out the difference in meaning between the two synonyms and understand how to use them in written or oral discourse. It may also help them to remember the difference more vividly or easily since their understanding would be a result of their own effort while comparing the two sets of concordance lines.

The incorporation of corpus concordance lines and DDL in teaching language was done in a systematic way through a learning and teaching approach that appeared in the 1990s. This approach, known as the lexical approach (Lewis 1993, 1997), maintained that the building blocks of learning are not grammar or some units of teaching but word combinations. The lexical approach utilized the findings of corpus linguistic approaches to analysis of language in the teaching and learning methodology and development of materials.

The basic assumption of DDL is that the data is primary, and the teacher is beforehand unaware of precisely what rules or patterns students will

detect. This distinctive feature of serendipity gives DDL its special effect and stimulus (see the empirical examples in Figures 1.1 and 1.2). When students meet an unknown word in a passage they read, the context within the text is rarely sufficient for them to guess the meaning of the word. While they can look up the meaning of unknown words in a dictionary, use of an electronic concordancer is an alternative kind of learning material which enables students to deal with real passages to discover the meaning. On the issue of contrasting dictionaries with concordance lines, Sinclair (2003: 73) states that "a word may have several meanings, and dictionaries present the meanings without giving much guidance as to how they may be differentiated from each other." In a study about the application of corpora in distinguishing English synonyms, Xie (2013: 1497) makes a case that, "compared with dictionaries and reference books, using the corpus is the most effective and simplest way in distinguishing synonyms so far." My point is that a corpus may continue offering useful and elucidative information about differences between words often confused – such as *injury* and *wound* above - where a dictionary cannot. This means that a corpus may complement a dictionary but it also means that it may replace it.

I use the term 'corpus-supported learning' for the approach to learning in which students receive support from a corpus to perform linguistic activities. I also use the term 'corpus-supported teaching' for the approach to teaching in which I utilize an electronic corpus as a teaching tool in order to teach English to my students.

Finally, in this thesis, 'corpus teaching method' (CTM) stands for my approach to the particular learning context. I use that term to distinguish it from the 'traditional teaching method' (TTM), which stands for the teaching approach that has been used for many years in my teaching setting. The role of the teacher in each of the two contrasting methods is different. In CTM, the teacher becomes an adviser and facilitator of learning, and is a less dominant stakeholder. However, in TTM the teacher becomes an exclusive provider of knowledge and assumes a more controlling role in the classroom. Practically, TTM appears to render the teacher as the center of attention whereas CTM seems to render the corpus as the center of learning.

In corpus linguistic approaches to English language teaching, researchers tend to make suggestions regarding what might be useful corpus methods for the language classroom. As discussed in Chapter 2, there is little or no conclusive evidence that such methods work. A particular problem, for instance, is whether teaching corpus concordancing affects student motivation. This question is explored in a discussion on the Corpora List (online: 2010), the main mailing list of the corpus linguistic community. The tentative introduction of CTM to my university students necessitated particular investigation of its learning impact on them through a comparison and contrast with the already existing TTM. In the context of that necessity, this study generally aims at finding out if CTM is more effective than TTM with regard to student performance and language ability level. It also aims at investigating student motivation when CTM and TTM are involved and the elements that motivate or demotivate students. As will be duly stated in Chapter 3, those aims can be transformed into the following research questions:

1. To what extent is CTM more effective than TTM with regard to student performance on assigned tasks?

2. To what extent is the effectiveness of CTM with regard to student performance moderated by the ability level of the students?

3. To what extent is the effect of method on student performance mediated by student motivation after controlling for student ability level?

4. Which aspects of the two methods motivate or demotivate students and why?

The findings of this investigation may contribute to the formation of an exemplary teaching unit to be used in my English lessons at university. Further, this exemplary teaching unit might be useful to other similar university settings in my country or abroad.

1.4 Thesis overview

In this thesis I will aim to address the issue of teaching English in university context via corpus concordancing as compared with traditional teaching methodology in terms of student performance, student ability level, and motivation. The thesis is structured as follows. I will first present theoretical background relevant to my study.

Chapter 2 introduces literature on corpus linguistics as part of communicative language teaching. I then discuss research views on the notion of the 'right' corpus and on the issue of what kind of corpus should be used as language mastery model. Through a broad review of relevant and recent literature, this chapter also explores significant aspects of corpus teaching approaches in the classroom, the contrast between corpus teaching and traditional teaching, and the roles of language ability level and student motivation in corpus teaching. Common characteristics of corpus teaching studies with regard to those aspects are then identified to address literature limitations and/or gaps that would be useful to the formation of my research questions. Chapter 3 is a detailed discussion of my research questions, methodological decisions and steps of this study, and the electronic corpus utilized in this research. It also describes the tasks implemented in this research and the quantitative and qualitative data analysis methods employed while offering useful observational results from the pilot study and a description of the ethical issues encountered in this study. In Chapter 4, I present a small-scale pilot study performed before the main research and its targets, aims, design, and methodology. This pilot study offered useful insights into the main research project; I outline these and focus on one case study of a beginner student taking part in the pilot study. Learning implications of the small-scale pilot study are presented together with a discussion of literature limitations the pilot study addresses. The chapter concludes by analyzing caveats and problems encountered in the pilot study. In Chapter 5, I describe the approach to the analysis of quantitative data collected in this research. This chapter presents statistics demonstrating student performance and motivation, and results for the hypotheses presented in 3.2. I then discuss important aspects of student performance and explore significant aspects of student motivation based on the results of the quantitative data analysis. Chapter 6 describes the

approach to the analysis of the qualitative data collected in this research. I explain what processes of data categorization were used, and give more information about the frequencies of student responses. A summary of the qualitative findings is offered and the chapter closes with a discussion of most significant aspects of qualitative results based on a frequency-based analysis and a corpus style analysis. Chapter 7 contains a triangulation of findings. In it, I describe points of convergence between the quantitative and qualitative findings and an exemplary teaching unit based on findings follows. Finally, in the conclusion chapter (Chapter 8), I present major findings of this research and generalizable features of my suggested approach. The chapter concludes with descriptions of unforeseen features of the empirical study, suggested future work and final comments made by the present researcher.

CHAPTER 2 Corpora in the classroom

2.1 Introduction

To provide a basis for exploring my aims as outlined at the end of section 1.3, this chapter lays the theoretical foundations for the present research. Because English for Specific Purposes (ESP) and English for Academic Purposes (EAP) are the core types of English taught in the present teaching situation, section 2.2 presents a brief description of ESP and EAP along with important literature on corpus linguistics within the communicative language teaching context. Section 2.3 reviews literature about what corpora should be the 'right' ones for the purpose of teaching and learning English at university level and about corpora as models for language fluency and accuracy. According to the aims outlined in section 1.1, aspects of corpus teaching approaches through recent and pertinent studies are discussed in section 2.4. In particular, subsection 2.4.1 discusses research that implicitly or explicitly compares corpus-supported teaching methods (CTM) against traditional teaching methods (TTM). I explore both studies of teaching practices integrating CTM techniques into the classroom and studies directly contrasting between CTM and TTM groups. Subsection 2.4.2 discusses literature from the aspect of language ability level of student when CTM and TTM are modes of instruction, and subsection 2.4.3 discusses research from the point of view of motivation in teaching language via corpora. In section 2.5, I present common characteristics found among corpus teaching studies, and in section 2.6, I identify possible limitations and/or gaps in those studies. My specific research questions are presented at the beginning of Chapter 3.

2.2 ESP and corpus linguistics as parts of communicative language teaching

Because ESP, EAP, and EGP (English for General Purposes) affect methodological decisions in my thesis (e.g., corpus content and compilation, learning task content, etc.), I will provide a brief explanation of similarities and

differences between them. ESP differs from EGP in that the learners and their purposes for learning English are different. ESP students are mainly adults who already possess varying degrees of knowledge of the English language; their goal is to learn the language because they need it to communicate academic and/or professional skills and to perform activities related to their field of expertise. ESP is committed to teach students vocabulary and linguistic structures that reflect their field of study as closely as possible. EGP broadly refers to general English language education. It is usually taught in schools and refers to how students learn vocabulary and grammar to pass exams. EAP is used similarly to ESP with the only subtle difference being that EAP is devoted to teaching students how to manage themselves specifically in academia; for example, by helping them to write English academic paper or listen to an English academic lecture. There is no clear distinction between ESP and EAP so many researchers and teachers use them interchangeably or according to what fits their own teaching context.

There is an extensive body of research exploring the relationship between corpus linguistics and communicative language teaching. I will begin by surveying significant corpus linguistics works detailing approaches that have opened new horizons in the field. I will then focus on reviewing corpus approaching to language learning and teaching.

My study has been influenced by practical applications of corpus linguistics that have offered extremely useful methodological approaches to communicative language teaching. Sinclair (1990, 2003) connected corpus linguistics with the communicative teaching approach. His studies on corpora (large collections of writings on a specific subject), collocations (groupings of words in sentences), idioms (expressions whose meanings are not predictable from the usual meanings of their constituent elements) and concordance lines (searchable lists of all the words used in a corpus of texts) have greatly influenced language teachers and researchers because they proved that corpora can elucidate grammatical phenomena and lexical choices effectively, suggest priorities in terms of what should be emphasized in language learning and more importantly develop different and more imaginative ways of learning and teaching.

Stubbs (1995, 1996) presents several methods of using concordance lines for studying patterns of language use. He also offers methods for studying the most frequent and characteristic syntactic constructions and lexical collocations in which words appear. His main theoretical arguments are based on language findings which cannot derive from intuitive data in the shape of made up sentences. His works have influenced teachers and researchers in the field of corpus linguistics because they showed how corpus approaches might delve deeper into the grammatico-syntactic dynamics of a language than traditional approaches do. This is relevant to my study because applications of such methods of using concordance lines are described in Chapter 3.

In his influential paper, Tribble (1997) offers useful and practical ideas and applications of corpus linguistics in language education in academic settings such as the present one. Rather than simply offer 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 me) to seek empirical corpus evidence in support of teachers' and/or researchers' claims in studies 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 decided to use his valuable, hands-on, Monoconc Pro 2.2 (or MP2.2) concordancing tool (Barlow, 2003) in corpus research efforts including mine.

Meyer (2004) influentially describes the suitability of corpora to functional analyses of language which concentrate on identifying the usage of language as a tool for communication rather than on rendering a formal description of language. According to Teubert (2015), one of the principles of corpus linguistics is to have a communicative and empirical value. The communicative potential of corpus linguistics is explored in many corpus studies within the spectrum of English language teaching, the present study included. Teubert (2015) states that "the object of corpus linguistics is real language data" which means language that has already occurred in real life and/or everyday situations. This study follows the principles of the empirical value of corpus concordancing and real language data because it uses a

particular corpus with real language data relevant to the needs of its student-subjects as will be shown in Chapter 3.

In a work of great importance in the field of corpus linguistics, Mahlberg (2005) highlights 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 thesis is, to some extent, inspired by Mahlberg's work, in that it aims to provide empirical corpus data from both a quantitative and qualitative viewpoint by testing students' awareness of the frequencies of KWIC occurrences but also their "semantic prosod[ies]" which are semantically positive or negative occurrences (Mahlberg 2005: 23) or according to Flowerdew (2012: 164) "[types] of pragmatic meaning, communicating a speaker's or writer's positive or negative attitude towards what s/he is saying." Relevant empirical data drawn from the present study will be provided in Chapter 6. Römer's work (2006, 2011) on spoken corpora has also been influential, in that it considers corpora (and especially spoken ones) to be all important in the creation of an effective pedagogical corpus and in the design of language teaching syllabuses that focus on communicative competence. In line with Römer's consideration, my study includes a spoken sub-corpus in the Thessaly Corpus considering it also a useful pedagogical tool.

Further relevant literature has indicated a functional relationship between corpus linguistics (CL) and communicative language teaching (CLT) with computer science progress certainly being a catalyst to this relationship. On 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 find and analyze features of language in so many texts and so fast could be influential to teachers and learners. This is of particular relevance to my study because there has been an effort to find and explore different teaching methods with the aid of computer programs. Such computer use may be more interesting or effective than the traditional teaching approach used for so long.

In the context of using technology in my teaching setting, I examine electronic corpus concordancing as potentially helpful.

Corpus applications for language teaching have been differentiated between those for indirect use and those for direct use (McEnery and Xiao, 2011). Indirect use involves reference publishing, syllabus design and materials development, language testing, and teacher development, whereas direct use of corpus applications involves teaching methodology (McEnery and Xiao 2011: 365-370). Direct use of corpus applications are, for example, online or manual corpora. Online corpora are word collections of samples of written and spoken language from a wide range of sources which are available online for linguistic work. Manual corpora are the same as online corpora but they are not available online. They are compiled by teachers and/or researchers to be used in particular classroom or research settings.

Online or manual corpora have opened new horizons to language teaching practitioners. In terms of grammar teaching, Conrad (2000) predicted that corpora would bring a real revolution because discipline-specific descriptions of grammar would supersede old descriptions, grammar teaching would be replaced by lexico-grammatical teaching approaches, and structural accuracy would give its place to communicative appropriateness in language teaching and learning (Conrad 2000: 549).

Appearing to confirm Conrad's prediction, various studies have since then shown the relative effectiveness of DDL in teaching grammar (e.g., Sun 2003). This applies also to vocabulary teaching, which is sometimes replaced by collocation teaching whose effectiveness through DDL has been more or less confirmed by various corpus studies on collocation or lexical learning, too (e.g., Cobb, 1999; Sun and Wang, 2003).

Thus, corpus concordancing has been establishing its position in CLT, signaling an "extendability" (Gries 2013: 159) or simply a shift from focus on single words to multi-word items and, most importantly, perhaps facilitating learning processes "by providing a rich source of embodiments and contexts from new vocabulary" (Cobb, in O'Keefe *et al.* 2007: 24) and dissolving language ambiguity (Geluso and Yamaguchi 2014: 226). Stubbs (2001: 18)

claims that, by such a shift, multiple ambiguity at word level fades out in context. To support his claim, Stubbs (2001: 18) offers the example of the word *surgery* which communicates a general meaning about something relevant to medicine but when combined with other words in context, for instance *plastic surgery* or *brain surgery*, the ambiguity of the single word *surgery* fades away. A useful point that Stubbs (2001: 18) develops is that single words in a sentence do not channel the real or total meaning of it but it is the combination of all the single words in that sentence that offers the real or total meaning of it.

Because corpus concordancing involves careful corpus construction decisions and the way we design and utilize a corpus as a teaching resource is of particular importance, I took the decision to design my own manual corpus (described in section 3.4) and use it for my teaching and research purposes. One of the issues that emerge from such a decision is what the 'right' corpus is. Some important criteria for designing the 'right' corpus will be discussed next.

2.3 Corpora as language learning models

Given that corpora contain authentic language data as stated in section 2.2, it was inevitable that teachers and students seek corpora that stand as good examples or models of language in order to make use of them when handling various linguistic tasks or simply instead of using a dictionary that might not be enough. The role of a native speaker corpus as foreign language mastery model is a critical issue; there are arguments in favor of successful language learning being based on native speaker use, and arguments in favor of developing models of language focusing on non-native mastery. Those two aspects will be discussed in sections 2.3.1 and 2.3.2, respectively, with regard to appropriate corpus collection for the needs of this research.

2.3.1 The 'right' corpus

The kind of corpus used for language learning in the classroom is a critical issue. Corpus scholars have extensively discussed what makes the 'right' corpus. As mentioned above, key criteria to consider when selecting the 'right' corpus include its size, balance, representativeness, and specificity.

Corpus scholars have discussed what makes the 'right' corpus (Sinclair, 2004c; Leech, 1991; Tribble and Jones, 1997; Anthony, 2013; Sinclair, 2004b; Sinclair, 2004a; Hunston, 2008; Zanettin, 2011; McEnery, Xiao, and Tono, 2006; Nelson, 2010; Liu, 2012; Lee and Swales, 2006; Chang, 2014; Allan, 2009). An important aspect is the size of the corpus, namely how big or small a language corpus should be. Sinclair (2004c) believed that biggest is the best and wrote that "[t]here is no virtue in being small…[s]mall is not beautiful; it is simply a limitation" (Sinclair 2004c: 189). However, concentrating on larger size is not a valid concern, and it might even sometimes be 'naïve' if corpus representativeness and balance is not considered (Leech, 1991). The value of small, flexible and more specialized corpora used in the classroom can be greater and the results even more valuable. Over the last two decades, such has been the trend. Tribble and Jones (1997) advocate the use of small and flexible corpora, though do not reject large corpora, arguing that they are more directly useful to the majority of teachers and learners unless there is focus on lexicography. Koester (in O'Keeffe and McCarthy 2010: 67) also argues that smaller and more specialized corpora "allow a much closer link between the corpus and the contexts in which the texts in the corpus were produced."

Anthony (2013: 146) notes that the size of the corpus depends on the purpose for which a corpus is used. He argues that if a corpus is used to test a language rule it may be small, but if a corpus is used to create a language rule it needs to be large. In any case, the value of a corpus depends not on its size but on the kind of information it offers. To clarify, the kind of information offered in a corpus for teaching and learning purposes plays an important role. The better the texts included in the corpus, the better the teaching and learning results are drawn so the value of the corpus is increased. By 'better text' I mean a text that is closer to the learning needs of the students and broadly representative of the student's field of study.

An important aspect before a language teacher decides to make use of a corpus in the classroom is its balance. For a teaching and learning corpus to be regarded as balanced, the relative extent of various genres or text types (Academic, General, Specialized, etc.) in it should be based on what a teacher thinks is suitable for his/her students. Proportions of various genres or text types in a corpus depend on the number of existing genres, which will finally be the corpus components (Sinclair, 2004b). A teacher should tend to include all types of relevant texts in a corpus in a fair and equal manner although it is not always possible because a text type needed might not be in abundance.

Representativeness is a significant facet because a corpus is supposed to represent as best as possible the users of the language it contains. A corpus should not be constructed "in the image of the builder" (Sinclair 2004a: online) but it should reflect the language content of the discipline or interest area of its users. Representativeness might be interchangeable with balance because they can both be considered constituents to each other. Perhaps a fair solution to corpus compilation difficulties caused by the criterion of representativeness is to enrich the corpus with texts from multiple sources but handle the final corpus as an assemblage of sub-corpora and not so much as an individual entity (Hunston 2008: 162). In any case, it is almost impossible for a language teacher to compile the ideal corpus, either general or specialized, or both together, in order to use it in his/her classroom. Therefore, during the making of a corpus, some kind of rational compromise between commonly accepted standards of excellence and practical obstacles should be achieved (Zanettin 2011: 22; McEnery, Xiao, and Tono 2006: 73) or merely between "the hoped for and the achievable" (Nelson 2010: 60).

The specificity of corpus is another crucial aspect of what is the 'right' corpus for classroom use; again, there are different attitudes prevalent in the relevant literature. For example, Liu (2012: 26) prefers a general-academic corpus to be used by his university students in his corpus-supported study. His preference was due to his conviction that a general-academic corpus would be more beneficial to academic ESL students since understanding and using general academic written English is a prerequisite to understanding and using specialized academic English during their studies. On the contrary, Lee and

Swales (2006) stress the need for specificity of corpus. They observed that the more the students approached specialized written genres, the more they engaged with them, little by little proving the value of the corpus-supported approach while delving into tasks which turned them not only into active learners but also into language researchers (Lee and Swales 2006: 71).

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 usually benefit students who study ESP at university level (Allan, 2009). For example, Chang (2014) compared the online COCA (Corpus of Contemporary American English) with a manually collected specialized corpus (named Michelangelo) by analyzing data from a longitudinal, EAP writing skills experiment in Korea. Chang's sample was 10 intermediate to advanced English language ability level students who were assigned to consult both the general and the specialized corpus 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).

Chang's findings showed that the specialized corpus displayed the variety of English language that students really needed to obtain. However, a need for more concordancer examples was expressed by some students. In contrast, the general corpus turned out to be generally more credible as a source and more helpful with general English collocations, synonyms and exact expressions but it was more difficult to use and did not show the English language of students' field. Chang (2014: 254) concluded that "although the general corpus received positive evaluations, the participants highly valued the specialized corpus for its direct relevance to their academic fields."

Apart from the 'right' corpus issue, there has been discussion in the literature on whether or not native speaker corpora should be used as models for language proficiency by teachers who teach via corpora. This will be explored in section 2.3.2.

2.3.2 A corpus as model of native language mastery

The model of language mastery underlying a corpus teaching method is a critical issue. Native speaker data is often considered by teachers of English as empirical evidence of how English as a second or foreign language should be used. An important benefit of this is its authenticity, but a likely problem that arises is whether a native speaker corpus is a realistic or appropriate model for non-native students (Seidlhofer, 2001). As I will discuss in this section, students and teachers may hold different views on to which model of mastery students should aspire.

O'Keefe, McCarthy, and Carter (2007) point out that teachers might not want to aim for a native speaker model of mastery; however, they also point out, although not very directly, that the selection of texts, both spoken and written, will affect what sort of English emerges; in other words, the corpus content will determine the language captured. They raise the issue of whether the corpus teaching method requires that students' mastery match some sort of 'native speaker' ideal or whether a different level or model could be appropriate. As a result, they prefer the term "Successful User of English," after the work of Prodromou (2003), instead of the term 'Native Speaker'. O'Keefe *et al.* (2007: 29) argue that concordance lines from a native speaker corpus usually contain language usage that does not necessarily agree with normally accepted pedagogical rules. This may be seen when focusing on grammar usage. Recognizing this switch in the nature of English, McKay (2003: 45) admits "it is time to recognize the multilingual context of English use and to put aside a native speaker model of curriculum development." On the potential of corpora to be used in teaching and researching language, Gabrielatos (2005: online) states that corpus based research and teaching can "empower non-native teachers and researchers, since native speaker introspection is no longer considered the one infallible source of insights into language structure and use."

Timmis (2002) argues that students' opinions might be different from the outlooks of academics and educators and that therefore, perhaps students'

views should also be taken into account. To this end, he explored teachers' and students' attitudes toward the question of conforming to native-speaker forms based on two parallel questionnaire surveys and interviews. Timmis (2002: 248) found that "there is still some desire among students to conform to native speaker norms, and this desire is not necessarily restricted to those students who use, or anticipate using English primarily with native speakers." In contrast, Cook (in Timmis, 2002) challenges the use of native speaker language as model for learners of English. Although Timmis (2002: 49) recognizes that the student attitudes he observed might only be reactionary, he responds to Cook's challenge by stating that there is no reason why teachers should use a native speaker model of mastery but students might want such a model, even when teachers do not really believe it is appropriate or realistic.

Presumably, the truth lies between the extremes. Somewhere between Seidlhofer's boldness to suggest desertion of the native speaker model and Timmis' determination to prioritize students' predilection toward that model, Davies (2003: 185) argues that the two views have an equal and indispensable role to play when seeking a language model.

Finally, McCarthy (2016) discussed what should be included in reference and pedagogic grammars for non-native students within the context of the English Profile Project (EPP). The EPP is a collection of empirical evidence of learner performance via corpus linguistics based on both native-speaker corpora and the multi-million word Cambridge Learner Corpus. This corpus comprises Cambridge examination scripts representing 150 different first language backgrounds, with 200,000 examination scripts offering more than 55 million words of data for corpus research (McCarthy 2016: 104). McCarthy provided some examples of grammatical analysis of errors at advanced student level in the context of the EPP, showing how lexis and grammar are intertwined, and demonstrating how such corpus evidence can lead to new kinds of teaching materials and grammars. The researcher suggests that we use both native-speaker and learner corpora in order to provide more unbiased grammatical descriptions. Corpora of expert non-native speakers can be equally as useful as native-speaker corpora because they both actually offer

grammatical patterns typically used by huge numbers of users (McCarthy 2016: 112-113).

The debate outlined in this section is ongoing; the value given to native speaker norms by researchers in the field of corpus teaching and the degree of influence those norms exert on various teaching and learning contexts, especially non-native ones, will provide food for future thought and open up space for more research. From the above discussion it was clear that the kind of corpus a researcher or teacher (or both) should use is a significant issue which triggers different and sometimes conflicting views, and fuels ongoing discussions. The arguments of that discussion contribute to my own decisions about the design of my corpus in Chapter 3. In the next section, I will examine crucial aspects of corpus teaching that touch upon the aims of my thesis. These aspects are (a) the contrast between CTM and TTM in terms of student performance, (b) the contrast between CTM and TTM in terms of student ability level, and (c) the kind of motivation elicited from either method.

2.4 Corpus teaching approaches in the classroom

As mentioned in the first chapter, corpus linguistics is the utilization of authentic, digitalized texts in the analysis of language. One of its techniques, used in this research, is concordancing or generating concordance lines (keyword in context or KWIC) with the use of an electronic corpus concordancer.

Data-driven learning (DDL) approaches using corpus linguistics have been developed in language learning in contrast to the so-called traditional learning approaches. DDL claims that the corpus itself should be the only source of a hypothesis about language. According to Johns (1991), “what is distinctive about the DDL approach to inductive language teaching is the principle that the data is primary, and the teacher does not know in advance exactly what rules or patterns the learners will discover.” The difference between the so-called traditional learning approach and DDL (here termed

TTM vs. CTM) is that in the former approach, teachers present information and students practice with this information and finally produce new content; in contrast, in a DDL approach students observe a language phenomenon, hypothesize with regard to how this phenomenon functions, and finally experiment to test their hypothesis. As Yilmaz and Soruc (2015: 2628) put it "[l]earners can make psycholinguistic guessing games thanks to concordance before and whilst learning vocabularies or various grammatical structures." Similarly to the present study, Yilmaz and Soruc (2015) raise the issue of whether corpus concordancing really works when teaching vocabulary and if positive to what extent that occurs. In the teaching and learning context this thesis explores, the TTM has been the norm and the CTM has recently been introduced on an experimental basis.

It is true that there are criticisms and limitations of DDL as will be seen in section 2.6. For example, some criticism (Gaskell and Cobb, 2004; Philip, 2007; Kayaoglou, 2013; Sah, 2015) addresses the application of DDL to students who are at beginner level, an issue which this research addresses. Some critics (Seidlhofer, 2001; Mishan, 2004) also question the authenticity of the corpus used in a teaching and learning situation because students encounter corpus texts in a different context from the one in which they were produced. Students therefore process such texts in a context which may not meet their communicative goals (O'Keefe *et al.* 2007). Thus, it is the responsibility of teachers to make a careful selection of corpora containing texts that are transparent and interpretable by students bearing in mind what the students want and expect from a language program.

In corpus linguistics literature, ways have been devised of enriching the routine or traditional classroom teaching by suggesting activities that have a more communicative purpose for students' learning English, either general or special. In one such activity, students produce a concordancer analysis of idiomatic expressions (e.g., with the verb *break*) by searching for the idiomatic expressions and analyzing the concordance lines to observe how these idioms are contextualized and utilized by native speakers. Another activity is to give students a worksheet that includes a short text with unknown words (target words). Students will work in pairs or individually trying to understand the

meaning of the target words in the concordance lines until they can translate the whole text correctly.

The rest of this section will focus on three particular aspects of using corpora in the classroom. To be specific, in subsection 2.4.1, I will examine academic work contrasting CTM and TTM in terms of student performance. In 2.4.2, I will analyze the role that student ability level plays in CTM and TTM drawing on relevant literature and, in 2.4.3, I will assess research exploring student motivation and demotivation, paying particular attention to factors that motivate or demotivate students when performing TTM and/or CTM activities. My process of searching and compiling academic articles on these three aspects was to use Google Scholar and find articles about corpus teaching first -from various journals- in any chronological order and after collecting a total number of 36 articles I read each one of them to find discussions about those three aspects and then I allocated the articles into those aspects.

2.4.1 Corpus teaching vs. traditional teaching

The emergence of corpus concordancing in language teaching necessitated a re-examination of some key beliefs about language teaching, such as the traditional functions of learners and teachers, the usefulness of TTM such as formal teaching of grammatical rules, and a reassessment of the value of DDL within communicative teaching approaches. As I will discuss, language teaching theorists (Cermak, 2002; Sun and Wang, 2003, Chambers; 2005; Philip, 2007; Johns, Hsingchin, and Lixun, 2008; Breyer, 2009; Zhang, 2010; Chang and Sun, 2009; Varley, 2009; Römer, 2011; Cresswell, 2007; Phoocharoensil, 2012; Kayaoglou, 2013; Jafarpour, Hashemian, and Alipour, 2013; Yunus and Awab, 2014; Akbari, Haghverdi, and Biria, 2015; Fuentes, 2015) have tacitly or overtly admitted that TTM could not sufficiently prepare students to use language efficiently in more specialized academic settings, and there was therefore a need for teaching approaches based on language used in specific learning situations. Cermak (2002), for instance, asserts that traditional theorists and linguists find it difficult to admit that TTM has gaps and

inaccuracies. His assertion is based on the exhaustive coverage of linguistic phenomena that the advent of electronic corpora established signaling thus a shift from traditional teaching approaches to corpus-supported ones as analyzed in section 2.2.

In this section, I will discuss studies which have focused on implicitly or explicitly comparing CTM with TTM. I will assess the approaches taken in these studies, and will focus on the effect produced by TTM and CTM on students' learning.

A contrastive study between CTM and TTM was performed by Sun and Wang (2003) who investigated the relative effectiveness of CTM and TTM to learning collocations using a concordancer. They assigned 81 second-year university students error correction exercises which included collocation patterns the students were unfamiliar with, such as *distinguish between A and B* or *in excess of*. A TTM group was given grammatical rules and examples which included the collocations that the researchers focused on. The TTM group then had to study those rules and examples in order to correct given sentences (see sample sentences in Figure 2.1[1]). In contrast, the CTM group was given electronic concordance lines of the same collocations to study and then make corrections. Immediately after studying the rules and examples or the concordance lines, an exercise containing the same collocations was assigned to the two groups.

Figure 2.1: Extract from collocation correction exercise

Instruction: Please make correction on the following sentences.

1. It is not easy to distinguish your voice and those sounds.
2. The cow used as a sacrifice is in excess to 150 kilograms.

Sun and Wang (2003) concluded that students taught using CTM improved much more than students taught using TTM, suggesting that electronic corpus

[1] From "Concordancers in the EFL classroom: Cognitive approaches and collocation difficulty," by Y. C. Sun and L. Y. Wang, 2003, Computer Assisted Language Learning, 16(1), p. 93. Copyright 2003 by Taylor & Francis online. Reproduced with written permission.

concordancing creates “effective discovery learning possibilities” (Sun and Wang 2003: 90). However, this was not true for all collocation patterns. Sun and Wang (2003) conducted an Analysis Of Variance for “easy” and “difficult” collocation patterns, as defined by two experienced EFL experts. They found that in the case of easy collocations there are significant differences between CTM and TTM in favor of the former method; however, in the case of difficult collocations there are no significant differences between CTM and TTM. Due to its learning context of specialized vocabulary on Special Education, which is by nature difficult to learn, the present study investigates differences between TTM and CTM in terms of difficult target words so it might contribute to research.

In her empirical study, Chambers (2005: 119) integrated CTM into her university level vocabulary and analytical skills English course alongside TTM materials such as use of a course book, grammar, and dictionary. She concluded that CTM can complement TTM resources; while her 14 students started their searches by making traditional grammatical points, they usually produced lexico-grammatical findings in their submitted essays, demonstrating that CTM improved their knowledge. However, she observed variation in the success of CTM activities which she ascribed to differences in learning style and motivation and, as a result, suggested CTM be used in a complementary manner to TTM rather than replacing it entirely. The extent to which CTM might stand as a complementary teaching method to TTM is also explored in my study because a comparison between the results for tasks assigned to students across the two methods takes place in one of its portions.

Philip (2007) also compared TTM with CTM when exploring the qualitative differences present in students’ written production when assisted by dictionaries or by corpora. Apart from dictionary and corpus users, the study included Google users and mixed-resources users (a total of 41 Italian students). Students were observed in order to identify their preferred resources. Philip (2007: 4) focused on four types of language to assess his students’ written production. First, collocation, which involved combining keyword nouns to make a compound or the addition of known collocates so as to integrate the keywords into running text. Second, the generation of phrases

from a single keyword. Third, the lexical and grammatical choices made by students to link keywords that collocate well. Last, the figurative and literal meaning of words; namely how effectively students were able to distinguish between them in the text.

After studying each phrase produced by each group of students and comparing them across all four groups of users, Philip (2007) observed that corpus users produced phrases of better quality. Philip (2007) concluded that higher-quality texts were not written by corpus users merely because they utilized a corpus, but because the corpus users exhibited various characteristics related to the prototypic "good language learner" (Oxford, in Philip 2007: 12), suggesting that advanced learners benefit more from corpus-supported learning. My study takes Philip's (2007) exploration further by including three distinct student types according to ability (beginners, intermediate, advanced) and a bigger sample (60 students) in order to study the difference in learning and motivation among them.

Johns *et al.* (2008) presented specific pedagogical applications of numerous corpus-assisted curriculums in teaching English via children's literature. Their course was applied to 11 students who utilized four computer-assisted language learning (CALL) programs which included teaching materials such as monolingual concordancing, concordancer-based activities, and parallel concordancing (electronic delivery of parallel texts in two languages for language learning). The pedagogy for their study reflected both the communicative approach and DDL and the corpus-assisted curriculums they used shared the common feature of focusing on self-directed learning. The programs helped students analyze the usage of words or phrases in texts and motivated them to concentrate on written communication by "highlighting relevant linguistic features in a manner commensurate to the progress of each individual" (Johns *et al*. 2008: 484). Eight of the eleven students very much appreciated the concordancing materials because learning was generated in a more effective and communicative way imparting a sense of student independence at the same time (Johns *et al*. 2008: 503).

However, they report limitations, such as a small sample size, the limited duration of their experiment and more importantly their inability to guarantee that the superior performance of their DDL students was a straightforward result of the application of the CALL tasks. Addressing the limitation, the present study explores student performance results from 60 students, who perform corpus concordancing tasks and traditional tasks, in order to explain any superiority that might ensue.

In an interesting corpus-assisted study performed by Breyer (2009), 18 student teachers were introduced to corpus analysis and taught how to teach with corpora. After their initial training, they were assigned to write a reflective essay after a DDL grammatical task on the use of *any* and finally answer a questionnaire. Breyer (2009) argued that the utilization of DDL tools and resources in the classroom is limited and that DDL poses new challenges to traditional teachers from both a pedagogical and linguistic viewpoint. The pedagogical challenge is the difficulty of DDL to be integrated into traditional teaching units and the linguistic challenge is that many certainties start to fall apart with the advent of corpus concordance lines in the classroom. Breyer reported the student teachers' struggle "to come to terms with the challenges to their own beliefs and attitudes generated by the work with corpora" (Breyer, 2009: 168).

An implication of this is that if teachers had such difficulties, one can imagine how challenging introduction to DDL would be to students; however, if teachers receive the best possible initial DDL training, then students will benefit from this learning approach and transfer from traditional to corpus teaching methods will be easier and smoother. This will be developed in the present study since corpus concordancing prior training is to take place before students perform CTM tasks. This is expected to provide an idea of the kind and extent of training necessary to students who participate in corpus concordancing activities.

A similar transition is also considered necessary by Zhang (2010) who points out the "hidden agenda" that exists in his country behind the so-called communicative language teaching approach in English as a foreign language.

In his corpus-driven study focusing on collocation, Zhang candidly admits that the Grammar Translation method is still common in the majority of English classrooms. Zhang does not directly compare CTM with TTM but instead focuses on the semantic prosodic features of the verb c*ommit* in the CLEC (Chinese Learner English Corpus) and Brown Corpus (the Brown University corpus). Zhang's (2010) findings suggest that Chinese students have neither a full notion of the collocational patterning nor a total picture of the semantic prosody of the verb c*ommit*; this is ascribed to long-established traditional teaching approaches. Such a lack implies that there should be more concentration on the teaching of collocation via complete corpus-driven language project tasks instead of teaching single words without immediate context via structural exercises (Zhang 2010: 454-455).

An experiment that compared 13 senior high school students' proofreading performance without DDL and 13 students' proofreading performance with DDL (a total of 26 students) was conducted by Chang and Sun (2009). In particular, a web concordancer and support for concordancer searches were used to advance students' competence with the software. An evaluation questionnaire was also prepared to analyze students' opinions of the concordancer. The web concordancer positively influenced students' collocation use (verb + preposition) in the proofreading tasks and the students' perceptions of DDL were positive. Although Chang and Sun (2009) report limitations in their study, such as a small sample and variation in student proficiency, their findings were positive about the effects of DDL on students' performance. Similarly, Chambers, Farr, and O'Riordan (2011) argue that corpora have a crucial role to play in teaching and learning due to the availability of numerous examples of established language use and access to discipline-specific texts. However, Chambers *et al*. (2011: 100) recognize that despite positive developments, "corpus consultation literacy is not yet seen as an essential skill for language teachers, let alone learners," which will be supported or not in the present study by including several CTM and TTM tasks and texts, types of students and questionnaires.

Varley (2009) integrated corpus consultation into the language learning environment of 19 second-year undergraduate students who were observed in a

course assignment that required them to investigate language features characteristic of a range of genres using a popular concordancing software program, Wordsmith Tools (Scott, 1999). Varley (2009) saw the integration of CTM as an opportunity for his students to concentrate on points of language use that are difficult to them and for which traditional resources might not have been helpful enough. He first gave them a questionnaire to elicit their learning preferences in terms of grammar book and dictionary use and concordancing software use. Then he asked them to choose a genre of spoken or written English and, utilizing a concordancer, to explore two to four grammatical or lexical features that they recognized as being typical of their selected genre. Participating students also completed a reflective log as they worked through the stages of the project focusing on the way they were approaching corpus data for language analysis. Varley's results showed "students generally had a positive response to corpus consultation and were able to identify benefits clearly, particularly in the areas of vocabulary acquisition and increased awareness of syntactic patterns" (Varley 2009: 133).

Most of Varley's students indicated they might use concordancers in the future; the tendency for such action was greater among those students who had clear targets for their language learning, implying that those were advanced level students. Varley (2009: 146) also found evidence that "more advanced level learners may be looking for ways of learning that are different to more traditional methods of grammar and dictionary consultation that they have used for quite some time"; this is in line with Chambers (2005) and Philip (2007) discussed above. Tasks performed by the students exhibited a raised awareness of lexico-grammatical usage especially with regard to vocabulary use, phrases and colligational patterns, despite the initial requirement that students should choose to explore lexical or grammatical features. In addition, students who preferred to investigate spoken genres came upon language characteristics that are rarely found in traditional grammar texts (see also my own similar empirical findings in section 2.6).

Römer (2011) discusses the effectiveness of direct pedagogic corpus tools. She states that many teachers are convinced that DDL raises students' awareness of language and she presents a series of studies which highlight the

effectiveness of DDL. For instance, in his empirical study, Boulton (in Römer 2011: 213) noted that "corpus samples led to more successful results than traditional pedagogical resources such as bilingual dictionaries or usage manuals." Similarly, Cresswell (2007) measured the effect of DDL on proper production of logical connectors (words or phrases that connect two ideas) aiming at improving her students' academic writing skills, who were third year undergraduates of more or less advanced level. To that end, Cresswell used learner corpora from experimental and control groups, DDL and traditional, respectively. She concluded that DDL is reasonably more effective compared to non-DDL and that compatibility of DDL to learner language ability level is a further significant pedagogic issue, which the present study investigates not only in terms of student performance across student ability levels but also of motivation.

The positive effect of corpus-supported grammar learning is also highlighted by Phoocharoensil (2012) who taught conditionals and *who vs. whom* in relative clauses, via DDL to 17 proficient Thai graduate students. Two kinds of data were collected: a questionnaire and an interview seeking attitudes towards CTM and more reflective information. Phoocharoensil (2012: 512) found that most of the students expressed that "learning English grammar through concordance lines is better than other learning methods." This student response is similar to that explored by Kayaoglou (2013) who tested DDL vs. non-DDL on 23 intermediate level students via a fill-in-the-gap vocabulary task. Participating students were asked to differentiate between close synonyms which have similar meanings (Kayaoglou 2013: 139). The researcher received data from student performance in the task and from an interview, and found that his students demonstrated better performance when using DDL and expressed positive opinions about it.

However, Kayaoglou (2013: 142) suggests that DDL tasks should be adapted to students' level; while he examined the performance of intermediate students, he suspected that beginner-level students might have problems with DDL. Kayaoglou (2013) does not state particular aspects of DDL that are problematic but the author generally mentions lexical, grammatical or discourse related problems. Kayaoglou's (2013) suggestion was not

corroborated by his study because his students were only intermediate level ones, whereas my study may clear up if beginner-level students, as distinguished from intermediate and advanced students, have problems with traditional or corpus concordancing tasks.

A very interesting comparison of the effects of CTM with the effects of TTM on learning collocations of near-synonymous pairs was made by Jafarpour, Hashemian, and Alipour (2013). This study examined two groups of similarly proficient students, grouped according to results from a recognized language proficiency test. 84 students were divided into an experimental group of 42 students who studied with CTM and a control group of another 42 students who studied with TTM. The data for the CTM group were provided using the British National Corpus as the concordancing software. The aim was for students to investigate the L2 patterns, and as part of their task, they were given new words with their synonyms to refer to their collocations. The TTM group was taught collocations explicitly by being given a definition of collocations, examples of various types of tasks, and follow up exercises (Jafarpour *et al*. 2013: 54-55).

Jafarpour *et al.* (2013: 57) confirmed "the efficacy of concordancing over the traditional methods in improving the writing skill among L2 learners". Similarly, Yunus and Awab (2014) compared the efficiency of the DDL approach with non-DDL approaches. They used a sample of 40 Malaysian third-semester undergraduate law students; all students had taken the Malaysian University English Test and their language ability level had been categorized as ranging from intermediate to advanced level. To explore the effect of DDL on the students' production of colligations of prepositions, the students were divided into two groups of 20 students each; an experimental group using paper-based concordancing and online DDL, and a control group using a structural or traditional syllabus. The DDL group had received DDL training before the seven-week course. The duration of the course was seven weeks (Yunus and Awab 2014: 87-88). Despite the reported superiority of DDL to non-DDL in the majority of tasks in this study, one of the productive tasks, which was a single-sentence writing task, revealed no significant difference between the two approaches. Taking Jafarpour's *et al.'s* (2013) and

Yunus and Awab's (2014) studies a step further, the present study combines receptive with productive tasks purporting to reveal possible weaknesses of the two contrasted methods (CTM and TTM) and possible problems that might be faced by each one of three different types of students (beginner, intermediate, advanced).

Akbari *et al.* (2015) investigated the effectiveness of corpus-based tools in teaching collocations to 150 Iranian university students of intermediate language ability level and with different specialized domains (law, dentistry, and physical education). They halved the sample in two groups of 75; one group was taught the collocations through using corpus-based tools and the other group was taught through traditional method in which they did not receive any instructional tools. Akbari *et al*. (2015) found that teaching collocations through corpus-based tools significantly improved students' retention and learning of collocations. Despite the fact that they chose to include only intermediate-level students without estimating the amount of motivation, their study was indicative of the effectiveness and better student performance when using corpus concordancing tools in comparison with conventional ways of teaching collocations.

Fuentes (2015) investigated how the analysis of KWICs appeals to students by dividing 50 students of Business English into two groups and teaching them how to analyze the essential phraseology and semantics of several simple and complicated KWICs. The first group was taught in a computer laboratory about how to read concordance lines and corpus data and the second group received traditional teaching involving text-based reading comprehension skills with both groups given the same pre-, mid-, and post-tests. The findings suggested that the students who received DDL treatment performed much better in post-tests than the students who received traditional learning treatment. The feedback received by the students of the DDL group also revealed that initially DDL seemed too sophisticated and complicated but gradually the same students seemed to like corpus concordancing. Fuentes (2015: 194) argues that such gradual affinity towards DDL occurred because students appreciated not only the authentic texts but also the seemingly authentic tasks and although some students were greatly challenged by that, the

complication of the activity also helped to promote "increased engagement and participation, and therefore led to good results." Akbari *et al.*'s (2015) and Fuentes' (2015) findings about better efficacy and increased engagement will be examined to a greater extent in the present study in order to draw solid conclusions about student performance and motivation when engaging in CTM and TTM

A common element shared by all the above mentioned studies is that the implicit or explicit comparison between DDL and non-DDL approaches tends to reveal the superiority of the former over the latter with regard to student performance, thus opening up promising space for relevant future research and new ideas and/or decisions in the field of corpus teaching. However, most of the above teaching and learning experiments used student-subjects who were of advanced to mainly intermediate ability level hence allowing room for further exploration of another crucial aspect: the role of student language ability level in corpus teaching approaches.

2.4.2 The role of language ability level

The studies described in section 2.4.1 generally indicate that corpus teaching approaches are superior to traditional teaching approaches. However, these studies mainly focus on middle and upper level students. Despite CTM's superior characteristics, there are a number of other studies which explicitly or implicitly refer to difficulties faced by specific ability levels of students, particularly students working below advanced levels. In this section I will discuss research exploring the aspect of language ability level or student level in DDL or CTM.

Meunier (in Granger, Hung, and Petch-Tyson 2002) expresses concern about non-positive effects on confidence when students follow DDL, as shown by Bernardini (in Granger *et al*. 2002) and Hahn (in Granger *et al*. 2002), implying that corpus teaching tasks are usually less successful with non-advanced students (in Granger *et al.* 2002: 135). This is in substantial accord

with Sun (2003), who assigned three Taiwanese college students an exercise in which they had to correct an eight question proofreading list with various kinds of grammatical errors through the use of a concordancer. Sun found that low language ability students "tend to get confused easily about the concordancer outputs; thus, they need either a stronger degree of teacher involvement, or to learn in a more structured environment" (Sun 2003: 609) further implying that students who are involved with DDL should receive various degrees of teacher intervention depending on their language ability level with intervention gradually increasing towards less proficient students.

Similar to Sun (2003) but without a non-DDL group is Gaskell and Cobb's (2004) study. They also assigned error correction tasks through the use of online concordancer links for five typical errors (see Figure 2.2[2]) to 20 lower intermediate adult Chinese students to find that, despite students' eagerness and demonstrated ability to use corpus concordance lines to treat grammar errors, only 8 out of the 20 learners particularly ascribed the improvements in their writing to the use of concordancer work (Gaskell and Cobb 2004: 311), and that there was no striking reduction in the students' errors. Gaskell and Cobb (2004) imply that graded teacher intervention might be necessary. The present study examines students' attitude towards DDL but using a greater number of adult students (60) and a greater variance of student ability level (beginner, intermediate, advanced)

[2] From "Can learners use concordancer feedback for writing errors?" by D. Gaskell and T. Cobb, 2004, System, 32(3), p. 310. Copyright 2004 by Elsevier Ltd. Reproduced with written permission.

Figure 2.2: Example of links from student's draft to online concordance lines

Chinese New Year is a traditional holiday in my country. It is very important for Chinese. In Chinese New Year's Eve **[Link 1]**, all the member of family **[Link 2]** will go to their parent's home and sit around to eat Chinese dumpling. That night called **[Link 3]** "reunion night." People set off the firework and firecracker and put the antithetical couplet on their door that evoke a heavy holiday's atmosphere. In the reunion night there is a big evening party which was produced by CCTV show all night. Almost Chinese watch it during the night. Some Chinese play the Mah-Jong or play card **[Link 4]**.All Chinese in the world do different thing **[Link 5]** to celebrate their holiday. In the first day of Chinese calendar of the year, every people say to another "Happy New Year!"

Link_1

1 e I did. Christmas Eve and New Year's Eve are two double time cos he
2 think Wynn had one too many New Year's Eve, because Never! Honest
3 that's it fifty quid last New Year's Eve didn't we? Yeah but you
4 ut not only that I mean it's New Year's Eve, everybody else is bloody get
5 tion. Griggs, who'll be 75 oo New Year's Eve, has been helping Ruby Sello
6 New Year's Eve. Yeah for New Year's Eve. I started at half past six and
7 time is five years I've had New Year's Eve off. And I was determined an
8 es Yeah and had one New Year's Eve or Christmas Eve or something
9 out of all the girls who work New Year's Eve night. I told them on the ni
10 os it's a con right. Oh er New Year's Eve. She buys then presents.

Link 2

3 central bank would mean all the members of the EC having a way
5 particular case is that all the members of the House of Lords ad
6 makes all the difference to the members of the public and the g

Link 3

1 al shaped like a lower lip is called a labellum <48,1104> DODC
2 Erm it is an existing It's called a Qualitative Data Review form

However, in Chan and Liou's study (2005), the low-level group was found to have made much more improvement than the high-level group after online concordancing instruction. Previous studies by Lin (2002) and Lee and Liou (2003) show a similar effect, attributing improvement to the fact that "low-achievers had more room to push up their performance" (in Chan and Liou 2005: 246). In particular, Chan and Liou (2005) performed a one-group pre-test post-test experiment to see whether and how a concordancer can help 32 Taiwanese college students to learn verb-noun collocations using three tests and two questionnaires. The fill-in-the-gap items in the three collocation tests were the same except that the order of appearance was rearranged. The first letter of the verb under exploration was given (see Figure 2.3[3]). In terms of 26 items prepared in the tests, 16 items were selected from collocations presented

[3] From "Effects of web-based concordancing instruction on EFL students' learning of verb–noun collocations," by T. P. Chan and H. C. Liou, 2005, Computer Assisted Language Learning, 18(3), p. 237. Copyright 2005 by Taylor & Francis Group Ltd. Reproduced with written permission.

in 3 concordancing sessions and 10 items sampled from 2 non-concordancing sessions.

Figure 2.3: Sample of fill-in-the-gap item in collocation test

He a_____ great *success* and became the leading landscape architect of the day. [Answer: achieved]

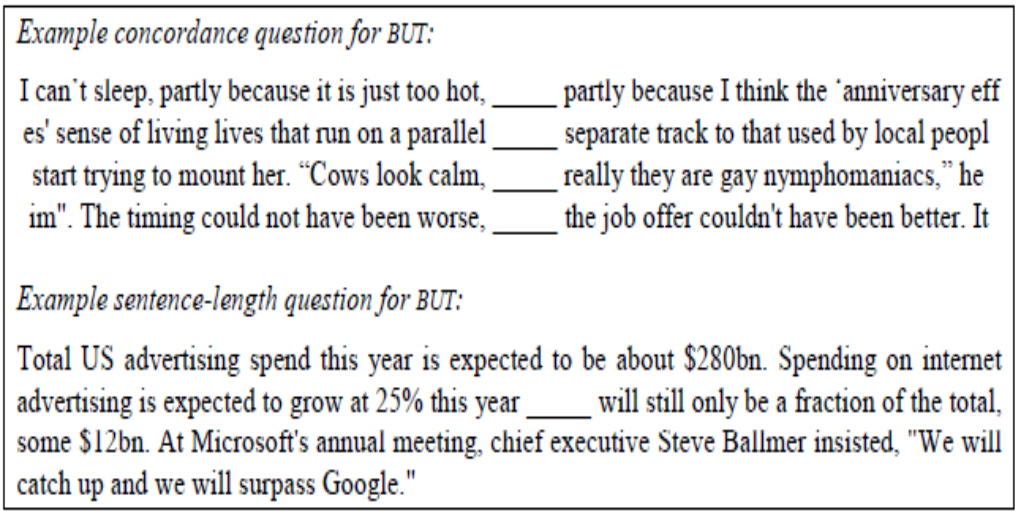
The concordancing method was found to provide an effective scaffold for students learning collocations, providing more benefit to low-level students and promoting a positive attitude towards online collocation learning sessions (in Chan and Liou 2005: 247). This is in contrast to Oxford (in Philip, 2007) referred to in section 2.4, who claimed only higher level students make the most of DDL, and Gardner (2007: 257-258) who noted the likelihood that "only the most advanced language learners can take advantage of the intricate semantic relationships between words that are revealed through concordancing." Oxford's and Gardner's studies stress the fact that DDL takes for granted that students will know the majority of words around the KWIC, which is a supposition that sounds illogical for some learners (low level ones, children, etc.). Having noted the likelihood of students' lack of familiarity of words surrounding the KWIC, Gardner seems to concur with Sun (2003), referred to earlier in this subsection, and Chan and Liou (2005) on matching DDL to students' language ability levels. Chan and Liou (2005: 247) conclude that "it might be necessary for instructors to teach collocations with different degrees of intervention."

In accord with Sun (2003), Chan and Liou (2005), and Gardner (2007), Flowerdew (2009: 395) also suggests that corpus-supported learning "might not be the most appropriate choice for some students." She does not identify students for whom that may be the case, but other authors cited in her work (Meunier, 2002; Gavioli, 2005; Gardner, 2007) directly state that perhaps only the most advanced students can exploit corpus concordancing effectively. This statement seems to acknowledge that (a) beginner level students stand few chances with corpus-supported learning, (b) teachers are unable to resort to

pedagogic mediation in such a case, and (c) the corpus used in each case is not representative and useful enough to all levels of students. The present study examines that statement by including three different levels of students (beginners, intermediate, advanced), checking to see if any pedagogical mediation is needed when CTM is used, and designing a corpus which is taken to be representative of the student-subjects' field of study and interest.

While some researchers have urged at least caution in DDL application with respect to low level students, Boulton's (2009a) findings starkly contradict the perception that DDL should be used only with advanced students. His study tested whether lower level, first-year college students might be able to make the most of DDL by using a concordancer print-out. 68 students (divided into two groups of 34) were given KWIC concordance lines or short contexts and 64 students (divided into two groups of 32) were given bilingual dictionary entries or grammar/usage notes, respectively. The tests were a simple multiple-choice gap-fill of concordancer and sentence-length questions and the language point was linking adverbials (see example in Figure 2.4[4]).

Figure 2.4: Example questions



Example concordance question for BUT:

I can't sleep, partly because it is just too hot, _____ partly because I think the 'anniversary eff
es' sense of living lives that run on a parallel _____ separate track to that used by local peopl
start trying to mount her. "Cows look calm, _____ really they are gay nymphomaniacs," he
im". The timing could not have been worse, _____ the job offer couldn't have been better. It

Example sentence-length question for BUT:

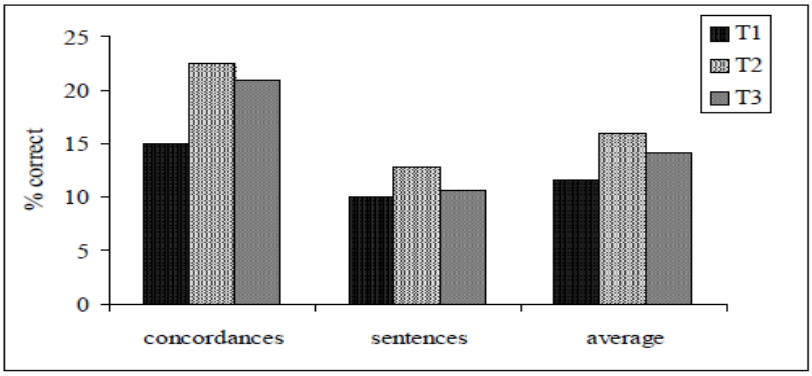
Total US advertising spend this year is expected to be about $280bn. Spending on internet advertising is expected to grow at 25% this year _____ will still only be a fraction of the total, some $12bn. At Microsoft's annual meeting, chief executive Steve Ballmer insisted, "We will catch up and we will surpass Google."

[4] From "Testing the limits of data-driven learning: Language proficiency and training," by A. Boulton, 2009, ReCALL, 21(01), p. 9. Copyright 2009 by Cambridge University Press (CUP). Reproduced with written permission.

A pre-while-post task procedure was followed to test prior knowledge, performance, and recall, respectively. The 'pre-task' of such a procedure usually concerns the various activities students can perform before they begin the task, such as exploring their background knowledge about the task. The 'while task' focuses on the task itself and usually provides students with several instructional options under time-pressure or not. The 'post-task' usually includes procedures for following-up on the task performance, such as learner report or consciousness awareness (Skehan, 1996).

The experiment design allowed comparison of findings among the three test sessions for the four different types of information (Boulton 2009a: 5). The results by test and question type showed students scored higher on the concordancer questions than on the full sentence questions (Figure 2.5[5]).

Figure 2.5: Correct responses by test (T1/T2/T3) and question type



The findings in Boulton's (2009a) study also showed that the shortened concordance lines presented to participants in fact helped lower level students by lessening the load of information, a crucial element for that type of student level. Boulton (2009a) also found that, in the groups given access to dictionaries and grammar/usage notes, the low-level students made very limited use of grammar/usage notes. Boulton (2009a) concluded that, apart from being most appropriate for advanced learners, DDL substantially benefits low level students, too. Finally, Boulton (2009a) observed difficulties of that type of students in using authentic language and therefore suggested possible

[5] From "Testing the limits of data-driven learning: Language proficiency and training," by A. Boulton, 2009, ReCALL, 21(01), p. 10. Copyright 2009 by Cambridge University Press (CUP). Reproduced with written permission.

solutions, such as (a) simplification of the corpus itself, (b) grading the texts within the corpus (see also the discussion of Sun (2003) and Gardner (2007) above), and (c) teacher intervention through particular selection of concordance lines for use with specific levels of students. Boulton's (2009a) findings are in agreement with both Sun (2003), and Granath (in Aijmer 2009: 63), who takes it for granted that advanced students "definitely benefit from working with corpora" but maintains that for less advanced students, "more teacher guidance is needed, but if the exercises are on the right level, corpus work can help raise their awareness of structures."

Similar to Gaskell and Cobb's (2004) study and fairly similar to Sun's (2003) is Gilmore's (2009) study which investigated the effect of online corpora on the naturalness of redrafted essays of 45 2nd-year, intermediate-level university students in Japan. Unlike Sun (2003), who used both a control group (TTM) and an experimental group (CTM), Gilmore (2009) used only an experimental group (DDL) which was assigned to write a factual report based on a theme. In the first draft that he received, he only highlighted lexico-grammatical problems and then students were asked to produce second drafts correcting problem areas by referring to online corpora previously introduced. Gilmore (2009: 4) found that of the corrections made by his students in their second drafts, nearly 61% were estimated as more natural, nearly 33% as equivalent, and nearly 6% as less natural by native-speaker raters (see Figure 2.6[6] for samples of modifications).

Figure 2.6: Samples of modifications

More natural:
First draft: He became popular in the USA not only Japan.
Second draft: He became popular not only Japan but also in the USA.
Equivalent:
First draft; Human body burns energy to keep life-maintenance.
Second draft: Human body burns energy for keeping life-maintenance.
Less natural:
First draft: Underage smoking was prohibited in Japan, so she couldn't avoid fired.
Second draft: Underage smoking was prohibited in Japan, so she couldn't evade displacement.

[6] From "Using online corpora to develop students' writing skills," by A. Gilmore, 2009, ELT Journal 63(4), pp 4-5. Copyright 2008 by Oxford University Press. Reproduced with written permission.

Gilmore (2009) observed high approval of DDL from his students. He suggests that online corpora have a valuable role to play in analogous teaching and learning situations; however, Gilmore (2009: 6) observed that "some students, particularly those of lower proficiency, found both the selection of keywords for their searches and the interpretation of the resulting decontextualized concordance lines difficult." Gilmore (2009: 7) concludes that the error correction methodology he recommends appeals to some types of students more than others; for instance students who are "more visually oriented, more analytic and logical, or less tolerant of ambiguity." Although his findings concur with some of the abovementioned studies in terms of superiority of DDL over non-DDL and difficulties faced by lower level students, Gilmore seems to ascribe lower performance or interest to learning styles or types of students and not exclusively to language ability levels.

Kennedy and Miceli (2010) reported on an effectiveness evaluation of a semester-long apprenticeship in Italian corpus use with intermediate-level Australian students. The apprenticeship focused on pattern-hunting (utilizing the corpus to make the language and content of the text richer) and pattern defining (finding a target pattern of use) because Kennedy and Miceli (2010: 34) considered them "productive and rewarding for learners even at an intermediate level of proficiency." The evaluation was performed via case studies of three students' utilization of the Italian corpus and a bilingual dictionary as reference materials when writing, similarly to Gilmore (2009) in terms of redrafting by using DDL and non-DDL resources. Two methods were used for data collection by Kennedy and Miceli (2010): a writing activity and an audio-recorded and transcribed interview. Although their students were only of intermediate language ability level and their sample is very small, Kennedy and Miceli (2010) found that the students who were keener on using more correct phrases performed more pattern-defining via corpus, whereas those keener on personal investigation concentrated more on pattern-hunting.

Varley's (2009), Chambers *et al.*'s (2011), and Römer's (2011) studies concur that there can be substantial benefits from utilizing electronic corpus

data in classroom, especially if that data is entirely authentic and remains intact for more advanced learners and to some degree becomes graded or is moderated for lower level learners. As Gardner (2007) and Sun (2003) recognize, lower level students might be intimidated by using corpus data due to their less extensive vocabularies. As such, a graded approach to corpus use is “certainly appealing” (Boulton and Tyne 2013: 104). In a critical approach, Boulton and Tyne raise the issue that all quantitative studies have a tendency towards treating students as equals, thus obscuring individual heterogeneity. As Boulton and Tyne (2013: 101) note, DDL might be particularly suited to learners who had problems with traditional learning resources in the past. There is currently a dearth of research on testing DDL with beginner level students and consequently, a necessity for more research on what student level suits DDL more.

In the same year, Barrera (2013) described the impact of corpus-informed conversation strategies on 28 elementary English learners' oral interaction in Ecuador. He aimed at motivating his elementary students to speak because “these strategies claim to be authentic, modern and are based on [a] spoken Corpus” (Barrera 2013: 7). As is the case with elementary students, Barrera’s students were defensive when oral communication in class or in real life took place. To keep them “off the defensive” (Barrera 2013: 34), he intervened by introducing *Touchstone* (McCarthy, McCarten, and Sandiford 2005) in his study, which is a corpus-informed EFL course book for adults and young adults. His data collection methods were observation and assessment on student-student interaction. His results indicated that the corpus-informed conversation strategies produced a 57.1 percent increase in the overal1 scale, and a 112 percent increase in the turn-taking or giving indicator making it clear in his study that elementary EFL students’ oral interaction performance can be affected positively by using those strategies. However, he did not use a control group and his non-placement-tested sample was low. Barrera (2013) concluded that corpus-informed conversation strategies promote realistic communication and overall increase students’ motivation.

More recently, Momeni (2015) performed a corpus-supported vocabulary study with 60 high-school Iranian students who were placement

tested and then divided equally into 2 experimental and 2 control groups consisting of 15 higher intermediate and 15 lower intermediate students. After the placement test (Cambridge Preliminary English Test), a pretest-posttest design method was applied with two vocabulary tests, the former consisting of 30 multiple choice items and the latter consisting of 30 multiple choice, fill in the blank, and matching items (Momeni 2015: 414). The experimental groups were taught via corpus concordancing and the COBUILD dictionary on CD-ROM and the control groups were taught via traditional techniques, such as explanation, definition, and translation of words out of context. The principal focus of Momeni's study was to elicit the effect of corpus concordancing on students with different language ability. Apart from Momeni's (2015) positive findings with regard to superiority of DDL approaches over non-DDL approaches, the results showed that corpus concordancing enhanced lower language ability students' vocabulary learning "more than that of the higher level proficiency learners in the test immediately taken at the end of the experiment" (Momeni 2015: 419) in agreement with Chan and Liou's (2005) study earlier in this subsection and in contrast to other studies, such as Gardner (2007) and Flowerdew (2009).

Sah (2015) tested two different approaches of DDL grammar instruction on discourse markers with 20 non-native English speakers in UK. The first approach was DDL with integration into Present-Practice-Production (PPP) and the second approach was DDL with integration into Illustration-Interaction-Induction (III). The students were B1 level according to the Common European Framework of Reference for Languages (CEFR). Data collection was made through written pre-, post-, and delayed post testing and group interviewing. Scores in tests between the two interventions were compared and qualitative data from 4 participants in the interview were triangulated with the results of the tests. Sah (2015) found that the framework DDL with III was more effective than DDL with PPP. Regarding the problems students faced, the study "appeared to find DDL to have some degree of suitability for lower level students" (Sah 2015: 359). As a result of this research, Sah recommends that pre-editing of the concordancer data should be performed to further help low level students with comprehension. This

suggestion concurs with other researchers; for example, Wu (2015: 218) states that “adequate teaching material for lower level students and teaching method should be taken into consideration.” Wu (2015) performed a study with 20 Taiwanese students, whose level was found to be below intermediate prior to study, to investigate the participants’ perceptions toward the teaching and learning of collocation and the effect of using online language database on teaching collocation and on the participants’ language performance. The data collection method was a five-point Likert scale questionnaire survey, interviews and observation. Wu’s (2015) study is limited by the small sample of students used, but concludes that the overall attitude towards collocation via corpus concordancing was positive despite the fact that 17 of 20 students were only elementary level and the rest were upper elementary.

All the researchers presented in this subsection seem to more or less concur with one another with regard to problematic situations low level students might face when using DDL. While some of them implicitly or explicitly suggest graded teacher intervention, some others do not because they found that the students they experimented on had no problem with the tasks they were assigned no matter what their level of ability in English language. However, they seem to ascribe problems not only to students’ limited language proficiency but also recognize that motivational issues are a factor. Therefore, another aspect that seems to play a role in corpus teaching in the classroom is student motivation. This aspect will be discussed next through recent corpus teaching studies.

2.4.3 Student motivation

Exploring student motivation in corpus teaching in the classroom is relatively new to the field and a little-explored territory. It involves examining both linguistic and psycholinguistic variables, and as a result, this area of research combines approaches drawn from teaching and psychology. In the past, researching student motivation in learning a foreign or second language was rarely perceived as combining approaches used both in psychology and in

learning or teaching; instead, each one of these two strands was seen as an end in itself. However, over the last years, a number of corpus studies (Balunda, 2009; Chang and Kuo, 2011; Shaw, 2011; Boulton and Perez-Paredes, 2014; Mansoory and Jafarpour, 2014; Ozdemir, 2014, Marza, 2014, Benavides, 2015; Chen, Huang, Chang, and Liou, 2015; Daskalovska, 2015; Li, 2015; Tekin, 2015; Zohairy, 2015) have implicitly or explicitly touched upon student motivation playing a primary or secondary role in their learning process. The surge of work focusing on student motivation over the last years might be explained by the realization on the part of researchers that DDL (here CTM) has the potential to offer something more than non-DDL (here TTM) to students in terms of performance. The inevitable need emerged to explore aspects of student motivation when following CTM and/or TTM.

Balunda (2009) examined student perceptions of DDL's benefits by assigning 15 university students a DDL vocabulary activity and a subsequent recorded interview. Her comparison of DDL with her students' own learning methods (print and electronic monolingual dictionary with word definitions and their formulae) showed that her students felt they were learning something from DDL which they would not have learned had they utilized conventional techniques for learning unfamiliar vocabulary (Balunda 2009: 45). Put differently, it is not that the students feel a dictionary cannot give them the kind of help that corpus concordancing does, but that corpus concordancing impels them to acquire more information about unknown vocabulary than they would be motivated to when looking up at words by themselves. Balunda (2009) considered these students' perception as contributing toward increasing student motivation and confidence when using DDL but the only caveat revealed by her students' comments on DDL drawbacks is that "students who do not like to guess the meaning of words from context before engaging in DDL may be further frustrated by and unmotivated to engage in the activity" (Balunda 2009: 51). Therefore, Balunda proposes that a combination between inductive methods (DDL) and deductive methods (traditional) should be employed, in accord with Chambers (2005) presented in section 2.4.2.

Chang and Kuo (2011) created genre-based, online, instructional materials to be used by their intermediate-level computer science students

when writing research articles. The researchers built their own small corpus for specific academic purposes, which consisted of 60 research articles from three major computer science journals. They taught English for Academic Purposes via Moodle, a specially-made application for presenting teaching materials on the Internet. Chang and Kuo's (2011) online program comprised of language use divisions and information structure divisions devised around the principal segments of a prototypic research article. The former were supported by online dictionaries and a concordancer, AntConc 3.0.1 (Anthony, 2008), for analysis and retrieval of rhetorical moves and the latter were supported by traditional presentations of rhetorical moves performed by Chang and Kuo (2011) within a genre-analysis context. Chang and Kuo's aim was to explicitly teach rhetorical moves and specific steps to promote students' genre awareness and raise their consciousness of rhetorical organization. The use of corpus concordancing enabled their students to explore further beyond the limits of conventional learning methods and to discover that the research article pattern (Introduction-Methods-Results-Discussion) could not be applied in a systematic way to research articles in computer science; in such articles, the Methods, the Results, and the Discussion are usually mixed in a number of sections between the Introduction and Conclusion. The researchers gave an end-of-semester survey of 16 questions with a five-point Likert scale to the students in order to receive feedback. They found that, despite being at the intermediate level, their students "had high motivation and welcomed the cognitively demanding tasks" (Chang and Kuo 2011: 230).

Chang and Kuo (2011) also assessed the effectiveness of student learning in using the online materials by assigning two writing tasks. The first task focused on the move structure in the Introduction section of a research article and aimed to evaluate whether the students could organize related information to make a proper link between past research and the writer's own study. The second task concentrated on data commentary, a useful skill for reporting research results depicted in graphics. After observing their students' pieces of writing Chang and Kuo (2011) were able to conclude that a small and specialized corpus can offer plentiful and extremely useful resources for the

classroom, providing opportunities for producing instructional materials and enhancing students' motivation to work on specific genres.

Shaw (2011) demonstrated how both teachers and students can utilize DDL to teach and learn unknown vocabulary, respectively. She chose to present a well-known corpus (the Corpus of Contemporary American English or COCA) and DDL methods in the classroom and evaluated her project via a questionnaire, which was addressed mostly to teachers and less to students. Shaw (2011) highlighted the importance of realizing first, the utility and validity of DDL in the classroom to prevent student demotivation and disappointment, and second, that teachers should not present DDL in order to create corpus experts but to support students in learning language in an inductive way. Shaw argues that that teachers guide students towards autonomous learning by first giving them basic guidelines and then tangible examples so that students make their own learning way. A project of training teachers how to use DDL was created by Leńko-Szymańska (in Boulton and Perez-Paredes 2014: 126). The researcher administered a pre-course questionnaire and observed limited motivation prior to the course. After the end of a longitudinal DDL training course, she administered a post-course questionnaire. Like Shaw (2011), she received only positive reactions. These two projects reveal a need for proper DDL training of teachers and students before delving into specific teaching and learning procedures.

In a recent study, Mansoory and Jafarpour (2014) investigated teaching semantic prosody of English verbs to 41 Iranian students aged 16-18 by dividing them into two groups of 20 and 21 each. The experimental group received semantic prosody instruction via DDL while the control group was taught via a traditional, non-DDL approach. For instance, one of the tasks assigned was to find prosodic differences between near-synonyms. The experimental group was to check the difference via corpus concordancing and the control group via dictionaries and definitions provided in them (see sample exercise in Figure 2.7[7]). In order to motivate the students and keep them from

[7] From "Teaching semantic prosody of English verbs through the DDL approach and its effect on learners' vocabulary choice appropriateness in a Persian EFL context," by N. Mansoory and

over loading on too many concordance lines, the researchers provided few concordance lines accompanied by fuller text for a start (Mansoory and Jafarpour 2014: 154).

Figure 2.7: Example of vocabulary choice appropriateness test

Sentence: The constantly threatening nuclear war will _ _ _ _ _ _
Original word: break out
Near-synonym set: {start, develop, break out}

Mansoory and Jafarpour found that nearly all student-subjects who used DDL felt that it was more interesting and more helpful in improving their English. They noticed that at first that students preferred to work in pairs and/or groups to complete DDL tasks; however, students' perception was mostly that DDL encouraged them towards more self-directed learning (Mansoory and Jafarpour 2014: 157).

In an effort to create a more motivational ESP course, Ozdemir (2014) investigated the relevance of corpus data in medical English instruction via DDL. In his longitudinal study, Ozdemir (2014) used 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 exploring medical collocations via DDL because they had found uses that they were unable to find in dictionaries (Ozdemir 2014: 41). Like Leńko-Szymańska (2014) and Shaw (2011), Ozdemir observes that concordance lines offer richer data than dictionaries and ESP books, hence motivating and supporting not only students

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M. Jafarpour, 2014, Advances in Language and Literary Studies, 5(2), p. 153. Copyright 2014 by Australian International Academic Centre, Australia. Reproduced with written permission.

but also ESP teachers who become more knowledgeable in specific content and better equipped with teaching materials that work more effectively. Wu (2015) also notes students' increased confidence with collocations via DDL, along with students' increased motivation "to acquire accurate and native-like competence" (Wu 2015: 235).

A combination of traditional and DDL methods was also recommended by Marza (2014: 135), who investigated benefits derived from DDL in an ESP course titled "Introduction to English for Tourism." Marza used an experimental group of 25 Spanish university students who were initially trained how to handle a Spanish corpus (COMETVAL: Corpus Multilingüe en Turismo de Valencia) using Wordsmith Tools (Scott 1999) and assigned DDL activities. In a later session students were asked to answer a questionnaire on their perceptions (see extract in Figure 2.8[8]).

Figure 2.8: Questionnaire on students' perception

Table 2. Questionnaire administered to students and number of responses provided for each item.

PART 1 – Perceptions and opinions about COMETVAL and corpus familiarisation activities.	**1 No**	**2 Dubious**	**3 Yes**
1. Do you find COMETVAL useful for you as a student?	0	4	21
2. Could COMETVAL be useful for you as a future tourism professional?	2	4	19
3. Do you find it useful the way COMETVAL's data base has been designed (its layout)?	2	5	18
4. Do you find having access to corpora in different languages useful?	0	0	25

Marza found that students generally had a positive attitude towards DDL and were particularly enthused about having immediate access to authentic language from various genres and motivated by the different searches. However, only 24 percent of the students would like to receive instruction exclusively with a corpus. In contrast, 100 percent of them declared they would like to receive instruction "combining textbooks exercises, corpus tasks and other resources" (Marza 2014: 135). This reveals how influenced by traditional

[8] From "A Practical Corpus-based Approach to Teaching English for Tourism," by N. E. Marzá, 2014, International Journal of Applied Linguistics and English Literature, 3(1), p. 134. Copyright 2014 by Australian International Academic Centre, Australia. Reproduced with written permission.

instructional approaches students can be, which prevents them from being highly motivated. As Sah (2015), described in section 2.4.2, also observes in his study which showed that "the students' lack of motivation for self-learning was more crucial, as the students were probably more used to teacher-initiated learning" (Sah 2015: 359). Sah further argues that DDL can have positive effects on all levels of students provided that they are highly motivated and that DDL activities have a good effect on students' accuracy in productive skills.

Benavides (2015) addressed the extent to which DDL assisted nine university students in Spain in comprehending and using Spanish grammatical concepts and structures, such as collocations and tokens (sequence of words). Benavides used both inductive teaching materials (corpora) and deductive ones (textbooks). For example, one of the tasks used asked students to compare corpus evidence with the explanations, descriptions, and examples offered in their textbook (Benavides 2015: 223). Benavides collected data via a survey which contained 8 quantitative questions measured on a 1-5 scale and 8 qualitative open-ended questions, and found that the students had positive opinions of some facets of DDL, but not all facets. For instance, with regard to the aspect of impact on learning, DDL helped students learn "by engaging in both deductive and inductive activities" (Benavides 2015: 230), in that it assisted them in making sense of explanations offered in their textbook. Overall, Benavides' findings suggest that DDL enhanced student motivation in the central areas of corpus use and grammar; however, Benavides (2015: 231-232) advised that students "should conduct deductive search activities, which are easier, before engaging in the more demanding inductive searches", hence agreeing with Chambers (2005), Balunda (2009), and Marza (2014) on the necessity of using a combination of deductive and inductive materials and approaches.

In a recent and innovative study, Chen, Huang, Chang, and Liou (2015) developed a corpus-based paraphrasing tool in English and Chinese and tested it on 55 Chinese-speaking EFL college students, presumably at intermediate level, to improve their writing skills. One of the aims of Chen *et al.* (2015) was to compare their corpus-based paraphrasing tool with a well-known online dictionary and an online thesaurus. Seven short paragraphs were selected for

the paraphrase test and a questionnaire was designed to elicit the effectiveness of the tool. The students were divided into 3 groups with one group using the tool, one group using the dictionary, and one group using the thesaurus. To compare students' motivation, a program was created to record the frequency with which students used the tool and their online behavior during being tested (Chen *et al*. 2015: 28-29). Chen *et al*. found that, compared to the traditional online dictionary and the thesaurus, the tool provided more substantial support to students in their effort to integrate some varieties into their own use of language. More importantly, the findings indicated that, with the aid of the tool, there was "a clear trend that the less proficient and more motivated students were able to produce paraphrases of good quality and great quantity" (Chen *et al*. 2015: 32).

Daskalovska (2015) explored the effectiveness of corpus concordancing in learning English verb-adverb collocations in contrast to traditional learning tasks from course books. Her sample was 46 first-year university students, who were divided into an experimental group of 21 students and a control group of 25 students. The experimental group was assigned four DDL tasks after finding out what adverbs usually go with 10 verbs. Given the same verbs, the control group was assigned four traditional tasks, such as multiple choice and matching verbs with adverbs exercises. The researcher found that the students who used DDL had better performance in the assigned tasks than those who used traditional resources (Daskalovska 2015: 137). However, she pointed out that it was the novelty of the learning approach that motivated her students to perform better in DDL, as well as the fact that they were assigned to present their findings to their classmates (Daskalovska 2015: 138). Overall, she reached the conclusion that DDL for collocations is more effective than non-DDL due to the variety of information, the motivational tasks, and the depth of processing which helped her students retain information better.

In accord with Daskalovska's conclusion that students retain information better with DDL, a pedagogical implication of Li's (2015) discussion was also that "when the students themselves participate in the process of discovery, their memories of the findings can last for a longer time when the result is presented to them directly by the teacher" (Li 2015: 64). Li

discussed the use of corpus concordancing in Chinese high school and to what extent DDL can be applied in Chinese EFL classrooms. Li highlights the motivational value of authentic data in DDL, arguing that many traditional teaching and learning materials often use too much invented data and that students are always controlled by their teacher, and hence their motivation to learn is limited.

In his DDL vs. non-DDL study, Tekin (2015) categorizes DDL motivation for students into three stages: motivational, diagnostic, and empirical. The motivational stages involve technology use, real life experiences, self-learning, and cooperation. Technology use raises students' motivation when applying DDL and online corpora usually offer exciting real life data. Technology is everywhere today so self-learning via DDL is facilitated wherever students find themselves in. Finally, autonomous discoveries via DDL by students can easily be shared with other students towards collaborative projects (Tekin 2015: 80). Tekin used 72 high school students for his longitudinal experiment in Uganda with 36 students in the DDL group and 36 high school students in the non-DDL group. The DDL group worked on DDL vocabulary activities and the non-DDL group worked on traditional vocabulary activities. The researcher found that DDL was more effective and increased students' motivation more than non-DDL mainly due to the elements of researching skills, autonomy, and the feeling that students had a "portable teacher out of the classroom" (Tekin 2015: 84).

Feelings of student confidence in formulating own hypotheses and of increased motivation when using DDL were also reported by Zohairy (2015), who investigated possible improvement and increased motivation of his pre-intermediate, Saudi college students in learning grammar via DDL. For instance, a comparison between concordance lines and examples from a course book was assigned in order for his students to investigate what kinds of food can be *roasted* and what other kinds can be *baked*, (Zohairy 2015: 33), which may lead to a discussion about the use of those two adjectives and their possible collocations. The results showed that the concordance lines were far

more fruitful compared to the limited number of examples offered in the students' course book (see Figure 2.9[9]).

Figure 2.9: Results of searching corpus for baked and roasted

Baked: beans, clay, cookies, chicken, potato, goods, bread, pancakes, turkey, chest, apple, eggs, fish Roasted: beef, lamb, chicken, pork, pepper, coffee, meat, corn, eggplant, garlic, tomato, pepper

In addition to increased confidence and motivation through DDL, Zohairy found that DDL materials facilitated meeting the needs of students of various learning styles, such as kinesthetic or visual. However, Zohairy observed student demotivation due to great quantity of information. He was thus faced with a dilemma between making the concordance lines simpler, hence decreasing authenticity, and taking the risk of keeping them intact, hence demotivating some students (Zohairy 2015: 39). Zohairy decided to leave that intact, which caused some students to become demotivated; therefore, he was led "to exert more effort supporting and motivating these slow learners by grading tasks or pairing them with better students who rose to the challenge, and appeared to recognize the value of working with real English as opposed to 'textbook' English" (Zohairy 2015: 39), in line with Chambers (2005), Balunda (2009), and Marza (2014) discussed above.

Overall, recent research appears to present corpus teaching methodologies as ones that create different motivational contexts compared to traditional teaching methodologies. In almost all presented cases, students' motivation is positively affected if they are involved in DDL compared to those involved in non-DDL. However, as it usually happens with every research effort, there are limitations and/or gaps in those studies. The next section presents a holistic picture of common characteristics and factors in the

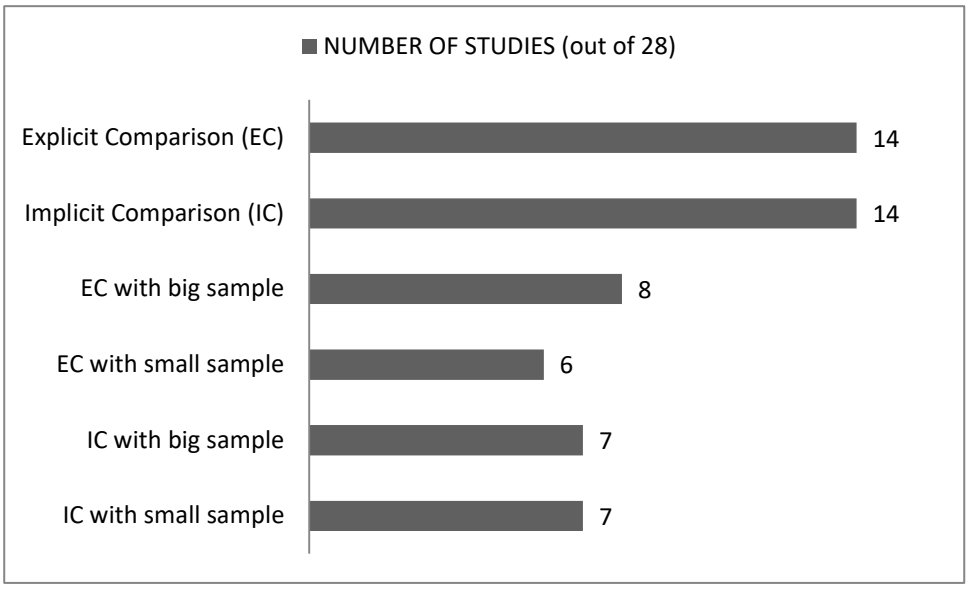
[9] From "Applying DDL approach in teaching grammar interactively," by S. Zohairy, 2015, ResearchGate, p. 34. Copyright 2012 by ResearchGate. Reproduced with written permission.

literature described in sections 2.4.1, 2.4.2, and 2.4.3, which will help later on locate their limitations and/or gaps within the scope of the aims of my research as stated in the introductory chapter.

2.5 Common characteristics of corpus teaching studies

According to my research aims outlined at the end of section 1.3, this section presents common characteristics and factors among the studies described in sections 2.4.1, 2.4.2, and 2.4.3, to help elicit possible limitations and/or gaps among them. To have an overall picture of common focal characteristics of them and elicit tendencies with regard to the first two aspects explored in sections 2.4.1 and 2.4.2 (DDL vs. non-DDL and student level in corpus teaching), I recorded each study's characteristics in chronological order since 2003 (see Appendix 2.1 for detailed data). The studies were selected with a focus on the characteristics analyzed in section 2.4, namely DDL vs. non-DDL comparison, multiplicity of student ability levels, and student motivation when utilizing DDL or non-DDL methods. Then, I compared useful frequencies of characteristics among the studies (Table 2.1). Despite the inevitably non-exhaustive coverage of studies here, my purpose was to see where this study stands in comparison with a number of other similar studies in terms of the strands I described in sections 2.4.1 and 2.4.2. This enables me to draw useful conclusions about what happens when multiple levels of student ability and big sample are involved. I found that 14 out of 28 studies performed an explicit comparison between DDL and non-DDL and 14 studies performed an implicit comparison. An explicit comparison involves direct contrast between DDL and non-DDL groups, whereas an implicit comparison involves only DDL experimental groups (one or more) and suggests a comparison and/or contrast with non-DDL approaches followed in the past in a traditional or structural manner.

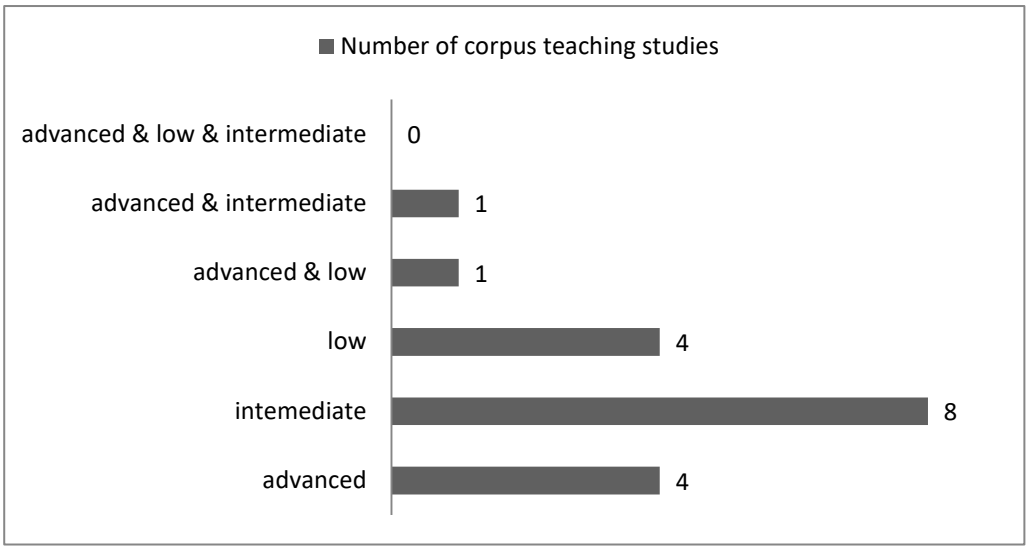
Table 2.1: Frequencies of characteristics across studies



The researchers who made an explicit comparison between approaches considered contrasting DDL with non-DDL necessary, whereas the researchers who made implicit comparisons between teaching approaches may have taken DDL's superiority for granted and wanted to investigate DDL within the context of DDL not contrasting it with non-DDL but observing its own potential; for example, by exploring what kind of DDL tasks are more attractive or effective than other DDL tasks. 13 out of 28 studies discussed in this chapter used a small sample of student-subjects (less than 20 or 30) and 15 studies used a big enough sample. However, to avoid overgeneralization, these are frequencies and tendencies that characterize only the selected 28 studies presented in this chapter, i.e. there might some other study that used a big enough sample but escaped notice. However, I did not find a study which combined a big sample and three student ability levels.

One of the key issues I explore in this thesis is that of the effect of DDL on students of different abilities. The student ability level focused on in research since 2003 is that of students of intermediate level in the language they study; this can be seen in Table 2.2. It is also noteworthy that none of those studies included an examination of students of beginner, intermediate and advanced level together.

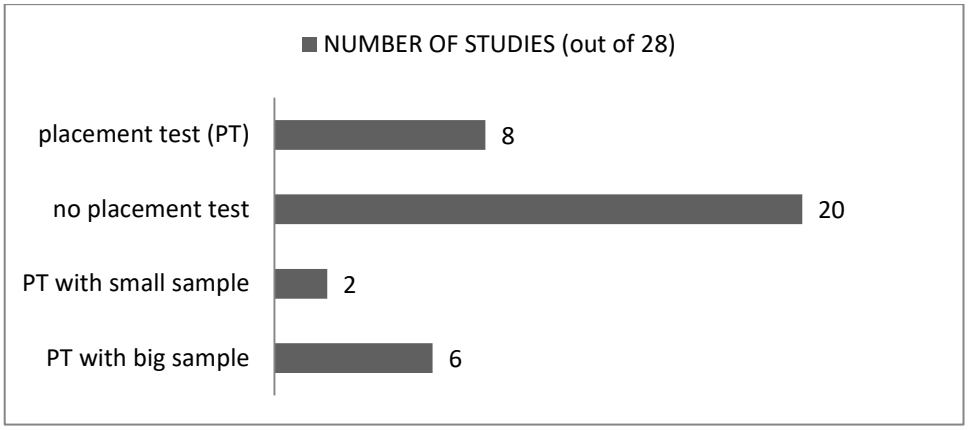
Table 2.2: Frequencies of student levels focused on in studies



Again, to avoid overgeneralization, this reflects the picture given by research carried out since 2003; studies performed before 2003 may have used all three levels but are beyond the scope of this literature review. However, from the research discussed in this chapter it appears that there is a very real lack of studies examining more than two levels of student ability.

I also compared studies according to whether or not they used a formal placement test (PT) and whether they used it with small sample or big sample (see Table 2.3). I found, for instance, that only 8 out of 28 studies made use of a formal and/or acknowledged placement test (PT) prior to their experiments and only 6 (of 8) used a PT with big sample of student-subjects.

Table 2.3: Frequencies of placement testing across 28 studies



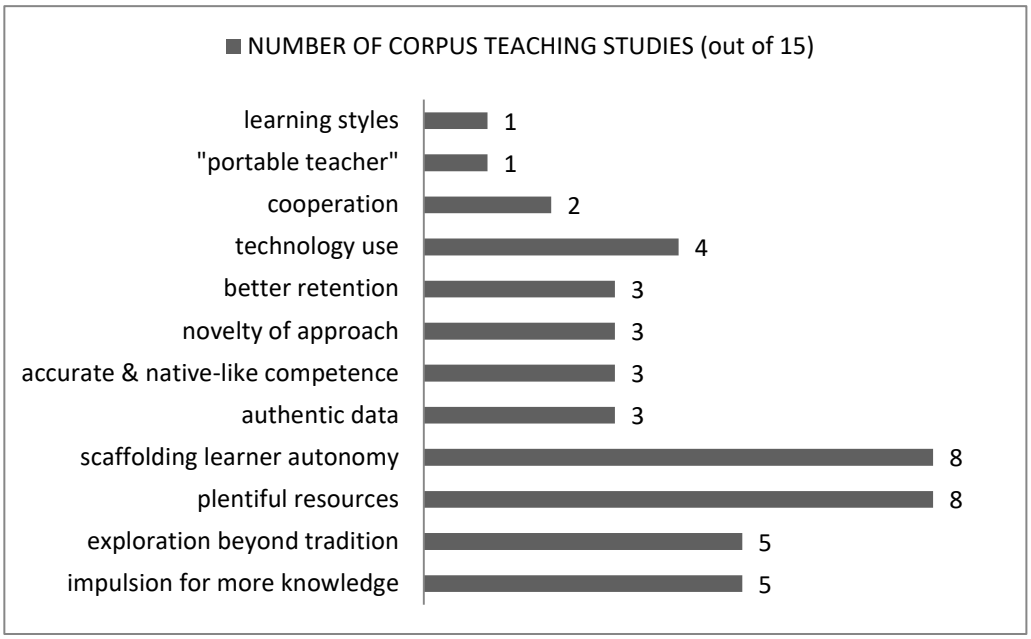
This is not to criticize the researchers who did not use a PT (with or without BS) since they definitely had their reasons, e.g., Barrera's (2013: 9) students were CEFR A1 level so he needed no PT, but with regard to the aims of my thesis it can be considered a limitation of the majority of studies.

Additionally, I compared studies according to whether the researchers suggested teacher intervention (TIS) after their findings (see Appendix 2.1 for detailed data). TIS is understood as teacher intervention before, during or after the teaching experiments in the form of adapting tasks to students' levels, preparing graded corpora, intervening in the content of corpus data, combining with traditional tasks, using DDL in a complementary or supplementary manner and suchlike. I found that in 16 out of 28 studies teacher intervention is suggested as a solution to the difficulties encountered by the students taking part in the project.

To gain a better understanding of motivation in corpus teaching and to have a holistic picture of the motivational factors reported in 15 recent studies presented in section 2.4.3, I recorded each study's reported motivational factor(s) (see Appendix 2.2 for detailed data). DDL motivational factors are factors that provide good incentive to students to be occupied with DDL. Motivational factors were reported explicitly or implicitly by the 15 researchers who carried out each study. An explicit report is one which derives directly from data findings and an implicit report is one which derives from inferences drawn by the author(s) based on overall impression from his/her study or based on experience. I will present both kinds of report in one. I compared the 15 studies with one another to find frequencies of motivational factors. Table 2.4 shows that the most widely reported DDL motivational factors are *plentiful resources* and *scaffolding learner autonomy* meaning the abundance of learning resources and buildup of student autonomy, respectively. The next most widely reported DDL motivational factors are *impulsion for more knowledge* and *exploration beyond tradition*. The former refers to 'pushing' students to learn more about something which initially involved less demand for knowledge, i.e. by assigning students to search numerous concordance lines and different discourse that surrounds a KWIC or a target word, students realize that they can enhance their knowledge about that target word not only

learning what it means but also how it is used in a number of real sentences and what words it usually comes with. The latter refers to language exploration not in a traditional manner but in a brand new way. The next most widely reported motivational factors are *accurate & native-like competence* and *technology use*. The former indicates positive student motivation due to the DDL's use of vocabulary and syntax in examples of authentic texts drawn from specific disciplines (therefore giving them an accurate understanding of the language used in such texts) and the latter refers to the good incentive to learn due to the enthusiasm and creative curiosity encouraged in students by new technology accompanying DDL.

Table 2.4: Frequencies of DDL motivational factors across 15 studies

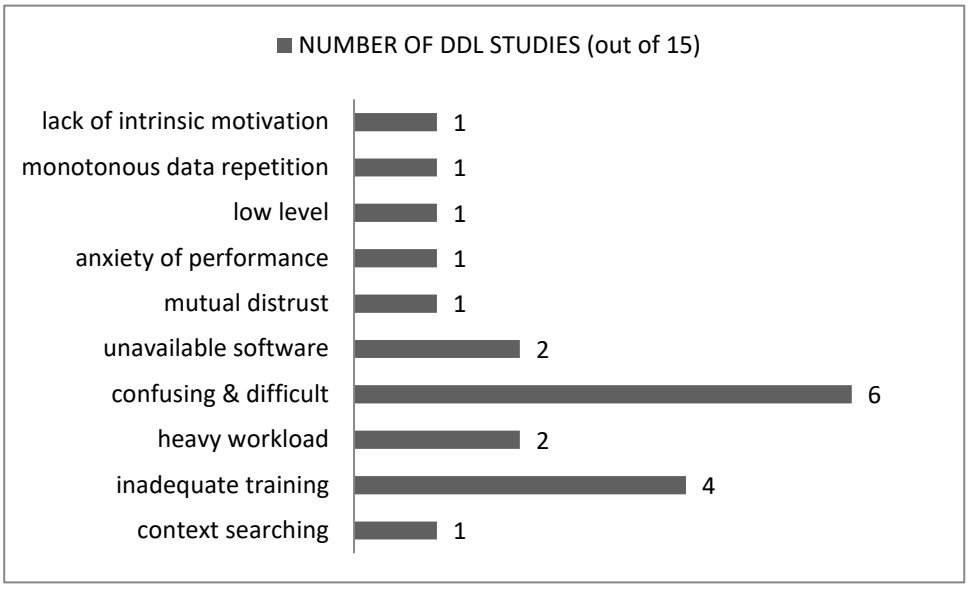


Researchers also reported *authentic data*, *novelty of approach*, and *better retention* as DDL motivational factors. *Authentic data* was regarded as a real motive for students to delve into DDL and *novelty of approach* as a factor that especially appeals to young people. Although in the studies reviewed here *better retention* is implicitly or intuitively reported due to its difficult and longitudinal nature when investigating it, the authors who reported it (Shaw, 2011; Daskalovska, 2015; Li, 2015) take it as a promising factor which might make a great difference in future studies. Finally, the least widely reported motivational factors are *cooperation*, meaning that DDL enhanced the

students' desire for cooperation with one another, *portable teacher* meaning that DDL can be operated almost anywhere (home, work, etc.), and *learning style*, indicating that DDL appealed to some of their students' learning styles.

However, the 15 studies report demotivational factors implicitly or explicitly observed in DDL. DDL demotivational factors are factors that provide negative motive to students to be occupied with DDL. I recorded each study's reported demotivational factor(s) (see Appendix 2.3 for detailed data). I then compared the 15 studies with one another to find frequencies of demotivational factors, summarized in Table 2.5. The most widely reported DDL demotivational factor is *confusing & difficult*, meaning that students lost interest in DDL due to concordance lines or tasks that were confusing and/or difficult. The next most widely reported demotivational factor is *inadequate training* which means that students were not sufficiently trained before the experiments in how to handle software, corpora, and/or DDL tasks. Another two demotivational factors are *heavy workload* which means that the students involved in DDL felt that what they were assigned to do by their teacher was simply too much, and *unavailable software* which indicates that students were facing practical problems, such as the shortage of DDL software, lack of access of PCs and similar issues.

Table 2.5: Frequencies of DDL demotivational factors across 15 studies



Six more DDL demotivational factors were less widely reported. These are: *context searching*, meaning a dislike for making KWIC searches; *mutual distrust* implying a distrustful relationship between teacher and students and vice versa; *anxiety of performance* indicating student nervousness prior to written or spoken presentation of DDL findings to teacher or peers; *low level*, referring to difficulties due to the low language ability level of students; *monotonous data repetition* indicating student boredom due to repeated concordance lines, and *lack of intrinsic motivation* meaning that DDL did not appeal to some students because they felt a lack of inherent reward when using it.

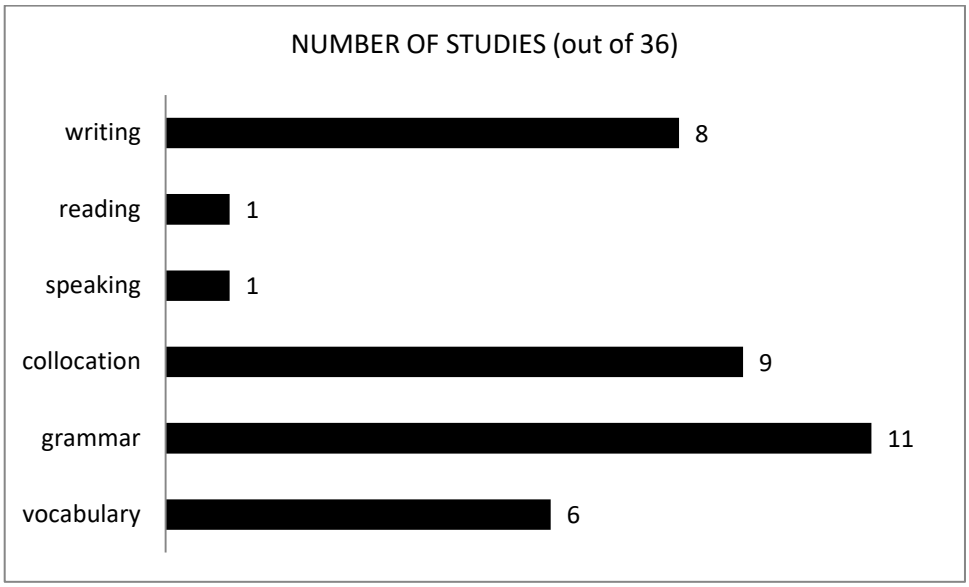
The above description of DDL vs. non-DDL characteristics, student level roles in DDL, and motivational or demotivational factors is indicative but certainly non-exhaustive simply because not all relevant studies were included here for practical reasons. The prevailing tendencies of some specific characteristics and factors were traced, which will help track down limitations, form relevant hypotheses and make methodological decisions in my thesis. Section 2.6 will address possible limitations.

2.6 Limitations in corpus teaching studies

This section addresses limitations observed in the studies analyzed above, as well as limitations observed in some of my own corpus concordancing searches prior to my research. With regard to the DDL vs. non-DDL aspect, given that recent trend in literature (c.f. Chang and Sun, 2009; Varley, 2009; Römer, 2011; Cresswell, 2007; Phoocharoensil, 2012; Kayaoglou, 2013; Jafarpour, Hashemian, and Alipour, 2013; Yunus and Awab, 2014; Akbari, Haghverdi, and Biria, 2015; Fuentes, 2015) is to present contrastive studies on that aspect and that English language teaching in Greece is still influenced by traditional and/or non-DDL teaching methodologies, I consider a comparison between CTM and TTM the basic necessity in my thesis. My consideration is also enhanced by personal experience from informal, small-scaled, DDL vs. non-DDL trials I have performed over the years, as will be described later.

I performed a brief count of the learning foci of 36 selected studies described in the previous three subsections (see Appendix 2.4 for detailed results) to identify any limitations to these investigations. As shown in Table 2.6, out of 36 corpus teaching studies, 11 studies focused on grammar, nine on collocation, eight on writing skills, six on vocabulary (four on general lexis and two on specific lexis), one on reading skills, and one on speaking skills. This simple count indicated some preference of DDL studies towards grammar, collocation, and writing skills and revealing a lack of focus on discipline-specific vocabulary, reading skills, and speaking skills.

Table 2.6: Skills mostly focused on in corpus studies



Again, this reflects only those 36 studies. There are almost certainly studies that focused on, for example, discipline-specific vocabulary but which were not located due to the practical limitations of my study. However, the trend indicated in the studies I did examine enable me to regard teaching discipline-specific vocabulary via DDL as a little-explored area, thus supporting my general aim to explore DDL vs. non-DDL within my own teaching context.

With regard to the aspect of student language ability level in corpus teaching in the classroom, a limitation revealed in literature is that there is lack of corpus teaching studies with three levels of students, namely beginners, intermediate and advanced students as indicated by formal placement testing beforehand. Those limitations are identified from the fact that most studies

described here used up to two levels of students identified with or without formal placement testing.

Small student sample also seems to be another limitation since 13 of 28 studies (Appendix 2.1) used a very small sample for various reasons. It appears that empirical contrasts between corpus teaching and traditional teaching with a large student sample are rarely found in recent corpus teaching literature. Such a limitation allows for the enhancement and refinement of two of my initial aims, which were to investigate DDL vs. non-DDL in terms of student performance and language ability level.

It also appears that studies rarely perform exhaustive quantitative and qualitative analyses of the motivational characteristics of a broad spectrum of student language ability (beginners, intermediate, advanced). It also seems that motivational or demotivational factors presented in relevant research do not largely derive from systematic, data-driven results but instead are drawn from teacher intuition or inference. This limitation indicates a research gap; I intend to help fill this gap by exploring the role of motivation in corpus teaching by pursuing both quantitative and qualitative investigation of student motivation when using corpus concordancing or traditional teaching methods.

It also appeared in literature that motivational and demotivational features of DDL were not drawn from in-depth analyses. Some studies did not even report demotivational features, at all, either because it was not within their scope, because they needed different methodological approaches or because they faced practical problems such as a small sample and/or student nonrepresentativeness in their participating groups. For example, as shown in section 2.5, no study has presented an exhaustive number of reasons why students like or dislike DDL or non-DDL. Some motivational and/or demotivational features were reported in a sporadic manner imparting only anecdotal interest. That limitation led me to develop my last research question, presented in section 3.2, about what motivates and demotivates students when using CTM.

I have also performed my own non-DDL and DDL searches prior to my research to investigate possible advantages, gaps, disadvantages, and

limitations that will help me formulate hypotheses prior to taking methodological decisions in my thesis. This also enabled me to locate relevant research limitations and highlight differences between learning approaches. My students and I worked together on a task to understand the meaning and syntax of the word *likely*. Most traditional English grammar and usage books (written in Greek or English) adopt the deductive method, namely they more or less present rules which explain (a) the word's meaning, (b) the *it is likely+that-clause* syntactic pattern, and (c) the infinitive after *be likely* syntactic pattern without great differences between one another. For example, Leech and Svartvik's (2002) *A Communicative Grammar of English* presents the word *likely* in a rule-governed fashion as an alternative way of expressing probability; while this is true, even advanced level students would consider such an approach dry or difficult to remember. As a result, they meet their speaking or writing needs by replacing *likely* with the most frequently used modals *may* or *might* instead.

On the same topic, but with more colloquial and reader-friendly examples, taken from the British National Corpus, Swan's (1995) *Practical English Usage* adopts a similar deductive (or traditional) approach by stating first what *likely* means as a rule and then offering examples that belong to each kind of the above mentioned syntactic patterns. In both the above examples of books, selected for their past and present popularity, respectively, there is no contrastive analysis of each kind of syntactic pattern. However, more significantly, one does not have to be an advanced or beginner level student to consider such approaches as tiring and rote-learning bound because they have a traditional style or format providing first a theoretical rule and then at least one typical example sentence. Swan (1995) 'baptizes' the word *likely* as a "preparatory subject," a term even experienced teachers do not easily understand, let alone if they are non-native teachers of English. Student (and teacher) demotivation might emerge in such cases of vocabulary or grammar presentations. Finally, any approach that does not need rule memorization for learning unknown words and lexical and grammatico-syntactic patterns can be at least interesting to beginner-level students. Many students, no matter what level, dislike memorizing grammar rules by heart and/or learning vocabulary

lists by heart. As such, finding ways of teaching or learning something that has always been hard to teach or learn due to its complexity or intricacy has been a challenge for teachers and students. Yorio (in Green 1993: 2) noted in a study of French students who studied English, "the two activities which did *not* get strong approval ratings were translation exercises and (with native speakers of French) memorizing vocabulary lists." Similarly, Qashoa (2006: 38) argues that "secondary school students are weary of taking grammar classes with rote memorization and drills which they find both boring and difficult to understand or appreciate." A learning approach which is not rule-governed has potential to appeal to many beginner students given that they usually consider rules their nightmare. Motivation could also be enhanced if students were able to learn language without first having to memorize long strings of grammatical rules.

Within tentative teaching portions of the syllabus of my current English course at university, my students and I observed the above syntactic structures of *likely* in a DDL fashion. We first performed a KWIC search of the word *likely* to see its surrounding context and then we looked at structures such as *likely that* and *likely to* in the Thessaly Corpus via the electronic corpus concordancer MP2.2 (Barlow, 2003). This was not part of an official study but it could trigger more systematic investigation. Some excerpts from concordance lines of the word *likely* and samples of ensuing structures appear in Figures 2.10, 2.11, and 2.12, respectively.

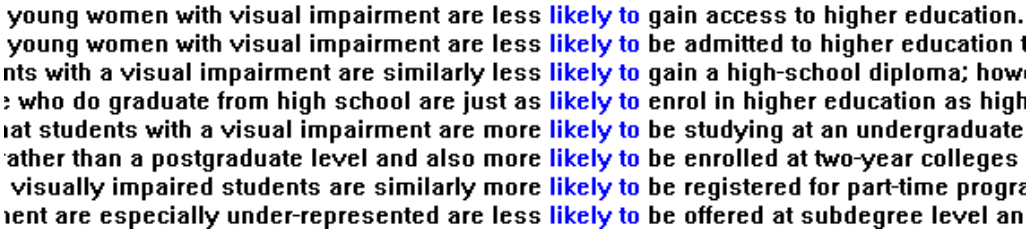
Figure 2.10: Eight concordance lines of likely retrieved with MP2.2

programs a decade earlier, it is likely that an increasing number of faculty are and will be wo
coenrolled classroom, the less likely that student was to report feeling sorry for the students
he hearing students were more likely to feel sorry for the deaf or hard of hearing students an
and ecological conditions more likely to be observed in general education settings. Students
ditions that make reading more likely to occur for this population. Limitations The descriptive
eaf identity. This child is all too likely, in the minds of some, to accept the hearing world's jud
ventative medicine do not seem likely to alter the fractionally small proportion of deaf chil- AM
3; Tolland, 1995). It also seems likely that many parents of deaf children do not have strong t

Figure 2.11: Eight concordance lines of *likely that* retrieved with MP2.2

It is most likely that Child 1´s and Child 3´s visual impairments are the main reason for t
ation. It is likely that these figures under-represent the proportion of children with these d
While it is likely that lack of accessibility is responsible for some of the lag in reading id
actice it is likely that different professionals will require different types of training which r
uture, it is likely that there will be a tendency among younger adults to use technology to
m but it is likely that there would be a far higher level of compliance with the advice give
l then it is likely that other sensory modalities guide memory storage and retrieval proce
ld appear likely that there remains a substantial proportion of visually impaired children

Figure 2.12: Eight concordance lines of *likely to* retrieved with MP2.2



My students studied the above concordance lines to understand meaning and syntactic patterns. Some lines were easy and some others were difficult; however, this totally new approach had something different to offer to my students from that presented by traditional grammar and usage books, and inevitably implied some degree of limitation in those traditional materials (Chambers, 2005; Varley, 2009; Gilmore, 2009; Mansoory and Jafarpour, 2014; Tekin, 2015).

2.7 The Corpus Teaching Method as a proposed theoretical basis for learning

This thesis proposes Corpus Teaching Method (CTM) as a theoretical basis for learning and teaching English. CTM involves preparation of a proper corpus on the part of a teacher. This corpus should be designed according to needs analysis of students at hand and major corpus design criteria as will be described in the next chapter.

Based on the fact that one word might have multiple meanings and that the correct meaning in a given text is usually found by the words before or after it, CTM can be used by students to explore and decide on the meaning of unknown words from a variety of authentic concordance lines. The theoretical basis to this thesis is that students could take over the learning process not only in a receptive but also in a productive manner; by doing so, it might be easier for them to remember the meaning of the word(s) explored. In this approach, the teacher is supposed to prepare a series of receptive and productive language activities or tasks to facilitate the learning process. This is a more holistic approach to learning than what relevant literature has offered by, for instance,

simply creating DDL tasks or making comparisons between DDL and non-DDL tasks, as shown previously in this chapter.

The proposed CTM presupposes teacher familiarization with corpus concordancing programs and, crucially, extensive student training on such programs ensuring that students know how to operate them effectively. The extent to which relevant training should be performed depends on the teacher but this thesis describes, in the next chapter, minimum training that must be done. Overall, the proposed CTM involves a combination of corpus compilation, receptive and productive learning tasks, and extensive training on corpus concordancing software. In all its proposed strands, the way the proposed CTM can be operationalized will be described in the next chapter.

2.8 Summary

This chapter offers a theoretical background to my study. It introduces significant literature on corpus linguistics as part of communicative language teaching. I then present similar and conflicting research views on the issue of 'right' corpus through discussing major criteria of corpus design. I also discuss what kind of corpus should be used as a model of language mastery by presenting proponents of corpora as native-speaker models, as non-native speaker models, and as both native-speaker and non-native speaker models.

Through an extensive review of relevant and recent literature, this chapter presents significant aspects of corpus teaching approaches in the classroom: the contrast between corpus teaching and traditional teaching, the roles of language ability level and issues of student motivation in corpus teaching. I explore common characteristics of corpus teaching studies with regard to those aspects, and locate limitations and/or gaps in research in order to contribute to the formation of my research questions. Finally, I describe a proposed theoretical basis for learning and teaching English. Based on the theoretical considerations described in this chapter, the next chapter presents the methodological decisions of my study.

CHAPTER 3 Methodology

3.1 Introduction

In this chapter I will present the methodology behind my research. As already stated in Chapter 1, I decided to compare and contrast the already existing traditional teaching method (TTM) with a newly suggested corpus-supported teaching method (CTM) and investigate the L2 vocabulary that mixed-ability university students gain when using those two different learning approaches along with the factors that motivate or demotivate students when using the one or the other approach.

In section 3.2 I will present the research questions and methodological steps of my research. In section 3.3, I will describe my research design by defining the model I adopted and the components of this study (quantitative or qualitative, types of variables, etc.). In section 3.4, I will describe my main methodological tool, the Thessaly Corpus (TC) by analyzing major factors, criteria and characteristics of its creation for the needs of this study. In section 3.5, I will define and describe supplementary tools I used and decisions I made to place the students according to their language ability level, pretest their background knowledge of vocabulary, and define the sample size of the student-subjects. In section 3.6, I will describe the fundamental functions of the MP2.2 program and the corpus concordancing training sessions I created for this study; in particular, I will discuss the tasks instructing students how to operate basic functions of the MP2.2 software. In section 3.7, I will describe the Traditional Teaching Method (TTM) tasks I assigned the students and offer samples of TTM material. In section 3.8, I will describe the Corpus Teaching Method (CTM) tasks I assigned the students and include samples of CTM material. In section 3.9, I will describe the type of questionnaire and the open-ended survey I created for the quantitative and qualitative portions of this study, respectively; in particular, I will discuss the questionnaire items and criteria of their design and their aims.

Finally, in section 3.10, I will describe the quantitative and qualitative data analysis methods used in this study based on limitations located in the previous chapter and on literature support. A conclusion of this chapter will appear in section 3.11.

3.2 Research questions and methodological steps

This study addresses the following research questions (RQ1, RQ2, RQ3, and RQ4):

1. To what extent is CTM more effective than TTM with regard to student performance on assigned tasks?

2. To what extent is the effectiveness of CTM with regard to student performance moderated by the ability level of the students?

3. To what extent is the effect of method on student performance mediated by student motivation after controlling for student ability level?

4. Which aspects of the two methods motivate or demotivate students and why?

The respective hypotheses tested in my study are 1) the CTM is more efficient than the TTM on student performance (related to RQ1), 2) student ability moderates the efficacy of the CTM on student performance (related to RQ2), 3) student motivation mediates the effect of method on student performance (related to RQ3), and 4) there are aspects of the two teaching methods that motivate and/or demotivate students and there are reasons for it.

RQ1 examines whether CTM improves students' performance in understanding unknown English vocabulary (referred to as target vocabulary or target word(s), hereafter) in comparison with TTM and emerges from my reflecting on the results of similar comparisons in literature presented in section 2.4. RQ 2 issues from the fact there was no study comparing three

levels of students (beginners, intermediate, advanced) and with an acknowledged placement test as shown in sections 2.4 and 2.6. RQ 3 investigates whether motivation plays a role when students take up the above mentioned learning methods and emerges from the fact that there is a dearth of studies investigating to what extent motivation mediates between the two methods and between method and performance as shown in sections 2.4 and 2.6. Finally, RQ 4 explores what motivates and demotivates students when using the two learning methods and is prompted by numerous recent relevant studies that compare TTM with CTM but have not performed in-depth analyses of motivational and demotivational features of CTM and/or TTM as discussed in sections 2.4, 2.5, and 2.6. Next, I will describe the basic methodological steps I took to address the above four RQs.

3.2.1 TTM vs. CTM in terms of student performance in tasks

To address the above mentioned research questions, I used six methodological steps: constructing a suitable corpus, training students to use a concordancing tool, assigning a placement test, assigning a word knowledge pretest, designing the TTM and CTM tasks and, finally, analyzing the students' test scores.

The first step to address RQ1 was to construct the corpus used in this research by my students, namely the Thessaly Corpus (details about its construction appear in section 3.4). The corpus was necessary when the students utilized CTM and it was useful not only for the RQ1 but for the other RQs as well.

The second step, training the students to handle a corpus concordancing tool (MP2.2), was to familiarize them with CTM, the new learning method (see section 3.6 for details of corpus concordancing training tasks via using MP2.2). This new learning method would be compared and contrasted with TTM through language tasks. At the end of the training sessions, the students should be able to work independently.

The third step was to assign my students an official and recognized placement test (see details about it in section 3.5.). The reason for this step was

to establish appropriate student ability levels so as to later on randomize my sample properly.

The fourth step was to assign the students a word knowledge pretest (details about its design and content appear in section 3.5). The pretest would establish that the target vocabulary to be dealt with in the tasks given later to the students was unknown to them.

The fifth step was to design the TTM and CTM tasks assigned to the students. A detailed description of the TTM and CTM tasks appears in sections 3.7 and 3.8, respectively. Because I wanted to compare TTM with CTM in terms of student performance, I designed the same linguistic tasks for both methods but used different student groups of analogous ability levels. In particular, I prepared four language tasks. Task 1 is a reading activity in which students have to explore meanings of target vocabulary by using TTM and CTM through the same specialized text relevant to their field of study. In Task 2, I assigned the TTM and CTM groups the same fill-in-the-gap activity in which they have to complete single sentences using target words. Task 3 requires that students should write their own sentences using target vocabulary via the two methods. In the last linguistic activity, students have to investigate the meaning of a target word using the two different learning methods (TTM and CTM); in TTM they used an online dictionary to explore meaning, whereas in CTM they used an electronic corpus. In both methods, the learning objective is for the students to find meanings of target vocabulary. My aim was to measure the effectiveness of CTM and TTM in relation to how well the same learning outcome is achieved by the different teaching methods through identical language tasks. Such measurement would help me answer practical questions such as: whether students are able to produce better written discourse when consulting a corpus or when using context from a given text; whether they better understand a target word when they use a corpus or when they use an online dictionary; whether they better understand target vocabulary in a text when using context from the same text or when using a corpus.

Finally, I collected and analyzed the percentage of correct scores in the above linguistic activities to observe differences in student performance between TTM and CTM. If, for instance, the percentage of correct answers in CTM tasks are significantly higher than the percentage of correct answers in

TTM, this would help me see if the one method is better than the other. Potential significant differences in student performance across the two methods would enable to address my first research hypothesis that CTM might be more effective than TTM with regard to student performance. I define 'correct sentences' as (a) correct in terms of grammar and syntax and (b) semantically plausible. I discuss my criteria of 'correctness' and what makes a correct sentence in sections 4.6 and 7.4.

3.2.2 Student level as a moderator of the CTM effectiveness

To investigate how the ability level of students affected the effectiveness of learning using CTM, I first had to identify participating students' ability in English. I did this by administering an IELTS reading placement test to mixed-ability level students (see details of its preparation in section 3.5) to identify students working at beginners, intermediate and advanced levels. This enabled me to create groups of similar numbers of students and level of ability by applying the technique of stratified selection; I will discuss this further in section 3.5. My aim was to find possibly significant differences in student performance in terms of ability level (beginner, intermediate, advanced) when using CTM.

Next, I analyzed the percentage of correct answers given by the students in response to the tasks created to address RQ2 in order to elicit potentially significant differences in student performance between CTM and TTM in terms of language ability. If they were present, significant differences in performance across student levels would enable to address my second research hypothesis that student ability might moderate the effect of CTM on student performance. That would enable me to answer practical questions such as whether beginner students are able to benefit from teaching methods using corpora, whether students with a particular ability level benefit more or not from the one method or the other, or whether all levels benefit from one method or the other.

3.2.3 Motivation as a mediator of the effect of method on performance

To address RQ3 I first developed a motivational questionnaire, the construction of which will be discussed further in section 3.9. My aim was to elicit level of motivation for all the students taught using CTM or TTM irrespective of ability level. A 6-point Likert type scale was given to all the students taught using both TTM and CTM. The questions were analogous in number and content in both CTM and TTM groups.

After collecting responses from both CTM and TTM groups, I compared them to explore motivation in the two teaching methods. This comparison would help to address my third hypothesis that students' motivation level would mediate the effect between method and performance, after controlling for student ability level. That would help me answer practical questions such as: whether students are motivated more when using TTM or CTM; whether students of a particular ability level are motivated more; and whether beginners are not motivated when using CTM, and the like. I will discuss specific goals in section 3.3.

3.2.4 Aspects that motivate students when using TTM and/or CTM

My first step in addressing RQ4 or QRQ (qualitative research question) was to design an open-ended survey with five questions and assign it to all the students (both TTM and CTM groups) no matter what their language ability level was. The students provided me with their written responses to that survey and the responses were analyzed thematically and categorized.

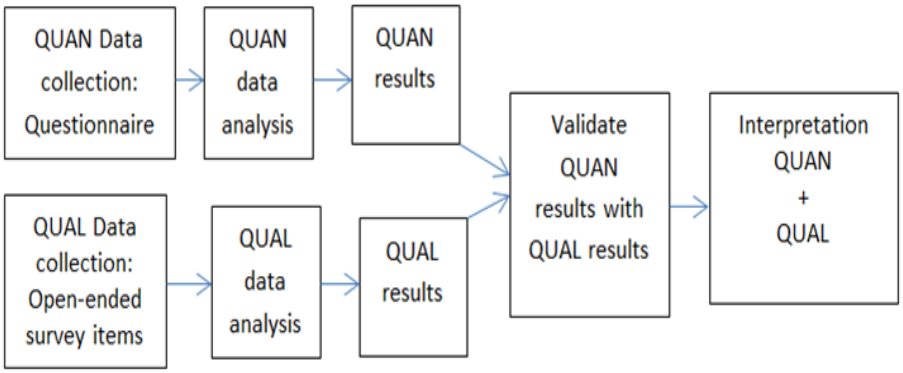
My next step was to make a comparison between categories of responses in order to draw conclusions about features that most frequently motivate or demotivate the students when being taught via CTM or TTM. That comparison is addressed in my fourth hypothesis. I hypothesize that there are aspects of the two methods (CTM and TTM) that motivate and/or demotivate students and that there are reasons for the kinds of motivation and demotivation

exhibited by students. The questionnaire will help me answer practical questions such as what specific elements motivate or demotivate students when using TTM or CTM, or whether some elements motivate or demotivate students more than others. The above research questions and methodological steps were defined in the context of relevant research paradigms, which will be described in section 3.3.

3.3 Research design

Because this research took place in the university classroom where I teach and the students who participated in it were students of my own, I use Action Research as the overall research paradigm for this study (Creswell, 2009; Craig, 2009; Gay, Mills, and Airasian, 2009; Plano Clark and Creswell, 2010). According to Gay *et al*. (2009: 18), Action Research in education is a kind of systematic research performed in the teaching environment of the teacher who performs his/her research to collect data about how students learn and how teachers teach. This research employs a mixed methodology, collecting both quantitative and qualitative data from the research participants (Creswell, 2009; Plano Clark and Creswell, 2010). Specifically, this study was based on the triangulation design variant known as the Validating Quantitative Data Model (see Figure 3.1 taken from Creswell and Plano Clark, 2007: 63). Researchers use the Validating Quantitative Data Model in order to "validate and expand on the quantitative findings from a survey by including a few open-ended qualitative questions" (Creswell and Plano Clark, 2007: 64).

Figure 3.1: Validating Quantitative Data Model



As shown in Figure 3.1, the analysis of quantitative data (QUANs), obtained through a motivational questionnaire and an additional performance percentage measurement in linguistic tasks led to quantitative results. The analysis of qualitative data (QUALs) obtained through an open-ended survey and a corpus style analysis led to qualitative results. Afterwards, the two types of results were validated with one another. After validation, an interpretation of the two types of results was provided.

The qualitative component (open-ended survey) was used to support findings from the quantitative component. Performance results in 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. By using a mixed methodology, I offer more valid conclusions which will contribute to more precise future interventions in teaching. The model in Figure 3.1 captures the approach of this study because the two data acquisition methods are validated and any interpretations are based on both the quantitative and qualitative components.

The primary quantitative component of this study was experimental. The experimental method is most appropriate when the goal of the research is to try to determine if the manipulation of an independent variable is the cause of any change or difference that is detected in the dependent variable. In this study, the independent variable was the teaching methodology (TTM and CTM) which was manipulated to determine the effect of the teaching method on the dependent variable, which is student performance (Cook and Campbell,

1979; de Vaus, 2008; Meltzoff, 2010). The qualitative component consisted of having students complete a set of open-ended questions in order to provide an in-depth understanding of (a) the students' experiences with the two different methods, (b) their perceptions of the two different methodologies, and (c) their perceptions regarding the extent to which the two different methods motivated (or not motivated) them to achieve in the lessons.

The experimental method is also suitable when participants can be randomly selected into their respective groups or matched on key characteristics as will be explained in section 3.5 (Cook and Campbell, 1979; de Vaus, 2008; Meltzoff, 2010). The two groups of participants being compared are assumed to be equivalent due to random selection. In random selection a population of interest is identified, and each member of the population has an equal chance of being chosen to become part of a sample. Two groups of participants were selected for this study (G1 and G2 respectively). The two groups were stratified based on their ability level, which is the moderator variable (beginner, intermediate, advanced). The student-subjects then were selected from the stratified groups. Due to the nature of the sampling, the two groups were analogous.

The study consisted of two phases or sessions. In the first session, both groups received the same specialized passage (SP1) as mentioned in section 3.2, but the teaching approach was different: G1 received CTM while G2 received TTM. G1 was assigned four tasks that involved reading SP1 and working on set target vocabulary via CTM (see details of CTM tasks in section 3.8) and G2 did exactly the same via TTM (see details of TTM tasks in section 3.7). In the second session, both groups received the same specialized passage (SP2) different to that used in the previous session. G2 received CTM while G1 received TTM. G2 was assigned four tasks that involved reading SP2 and working on set target vocabulary via CTM (see details of CTM tasks in section 3.8) and G1 did exactly the same via TTM (see details of TTM tasks in section 3.7)

My experimental setup differs slightly from the traditional two-group experiment in that the experiment was reproduced, with the control becoming

experimental group and initial experimental group becoming 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 counterbalancing. The reasoning behind employing a within-subjects design is that subjects function as their own control (Keren and Lewis 2014: 260). This provides the opportunity to a researcher to instantly compare between the different treatments. Statistically speaking, it increased the sample size of participants in using both teaching methods and on a qualitative basis students were facilitated to express their feelings and attitudes about them 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. Exposure to a single methodology might have caused complaints from students who would have been exposed to TTM but not to CTM.

After the two teaching sessions were completed, student performance was measured in terms of a percentage of correct answers in the tasks completed, and student motivation was measured using a student motivation questionnaire. The two groups were compared in order to determine (a) if students who used CTM outperformed those who used TTM on the performance tasks, (b) if student ability level moderated the effectiveness of the method, and (c) the extent to which higher performance on the performance tasks was explained by (or could be mediated by) motivation.

The independent variable in this study was the type of teaching methodology, which was the variable that was manipulated (CTM vs. TTM). The moderator variable was student level (Beginner, Intermediate, and Advanced). The dependent variable was student performance on the individual tasks completed during the sessions, which was measured by the student's overall percentage of correct responses. Student motivation was a mediator given that the objective was to see if the effect of methodology on student performance could be explained by student motivation. Student motivation was measured by a 6-point Likert scale, and an overall scale score was computed for each student. The term "mediator" (taken from Frazier, Tix, and Barron 2004) refers to one possible mediator in this teaching situation: motivation.

Other potential ‘mediators’ in this situation are IQ, EQ, mood, interest, etc.; these variables may be explored in future investigations. The use of ‘moderator’ and ‘mediator’ shows a need to be explicit about exactly what is meant by those two terms in this context. The term ‘moderator’ addresses ‘when’ or for ‘whom’ a predictor is more strongly related to an outcome; in this study ‘when’ is the one teaching method or the other (TTM or CTM) and ‘whom’ is the three student ability levels (beginner, intermediate, advanced). The term ‘mediator’ addresses ‘how’ or ‘why’ one variable predicts or causes an outcome variable; in this study ‘how’ or ‘why’ is student motivation as observed when they use TTM or TTM.

The methodological steps and research design described in sections 3.2 and 3.3 would not be feasible if a proper electronic corpus were not present. In the next section, I will present the corpus I employed to meet the needs of this research. In particular, I will describe the content and potential of the corpus I compiled as well its representativeness, balance, and size in accordance with criteria analyzed in sections 2.2 and 2.3 by relevant studies.

3.4 Construction of the Thessaly Corpus

Timmis (2015: 14) states several reasons why a corpus designer might want to build their own corpus such as (a) to inform themselves about the language typically used in the subject-matter, (b) to inform their syllabus for a currently taught genre, (c) to have a source of materials at hand, (d) to provide their students with a useful resource to consult it autonomously, and (e) to study their students’ language

In line with Timmis (2015) and Sinclair (2004a), I designed a corpus to be consulted by the students in CTM with content that was relevant to their field of study. The corpus was used in each CTM task; for example, in the first CTM task, students had to look up target words from specialized texts in the corpus to discover the target word’s possible meanings in Greek or in English;

the corpus was therefore prepared to contain all those target words within a sufficient amount of concordance lines. The target words used in the tasks were of mixed register: Special Education vocabulary, Pedagogical and/or Academic vocabulary, and General vocabulary. The corpus design reflects all the three registers as discussed in the design criteria below.

Thus, this research employs a customized corpus named the Thessaly Corpus (TC), which consists of various types of corpora such as the BNC Baby, the International Corpus of English, General American English, and Specialized English. Although it aims for a native speaker model of language mastery by applying corpus approaches to actual teaching it does so exclusively for specialized vocabulary, not for grammar usage. As a result, the issue of adopting or aiming for a native or non-native speaker model becomes less of a concern; specialized vocabulary is unique and nonnegotiable regardless of native or non-native speaker use. Using a combination of native user and learner English corpora is useful and appropriate (Davies, 2003; McCarthy, 2016). Next, I will consider essential corpus construction issues when designing and compiling the TC such as corpus representativeness, balance, size, register, data gathering, and I will test the potential of TC.

3.4.1 Determining representativeness and balance

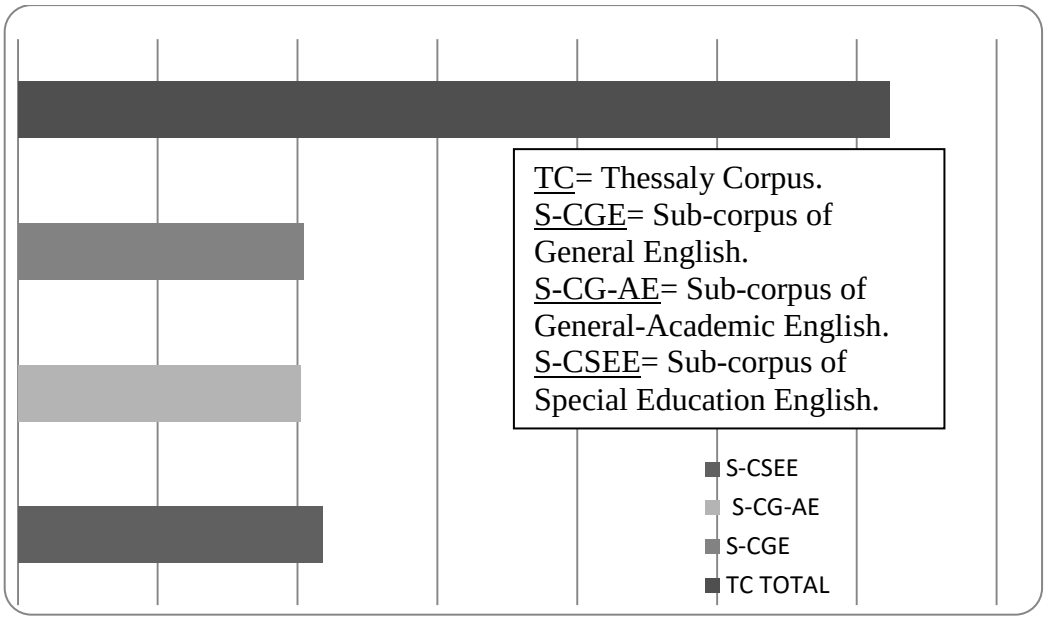
The sample population of this research is non-native learners of English studying in a Greek university. The types of English texts they study are Special Education texts, General Academic ones, and General English ones. Therefore, to achieve the best possible corpus representativeness, the TC comprised texts of all those three types. I chose to respond to the debate between Liu (2012) and Lee and Swales (2006: 71), referred to in section 2.3.1, by making a combination of general, general-academic, and specialized sub-corpora in a corpus totaling around 30 million words in order to cover all student needs. I will explore whether such a combination of sub-corpora is useful and/or efficient.

Geographically, samples came mainly from the UK and USA. Information about the origin of the authors is included in the TC, mainly in the Special Education texts. The hardest to acquire texts were those to be included in the Special Education sub-corpus because the majority was published in electronic journals with copyright restrictions. However, permission was granted by the editors to include their texts in the TC for linguistic research only, which ensures the replicability and verifiability of results of this study.

The categories of language used as samples in the TC include very specific and very advanced language of terminology, academic texts and general intermediate language, reflecting the types of passages the students encounter when they search for English readings relevant to their field of study or general English readings. A mosaic of the three main sub-corpora of the Thessaly Corpus, the Sub-Corpus of Special Education English (S-CSEE); the Sub-Corpus of General-Academic English (S-CG-AE), and the Sub-Corpus of General English (S-CGE), with a detailed description of their content, appears in Figures 3.2, 3.3, 3.4, and 3.5, respectively.

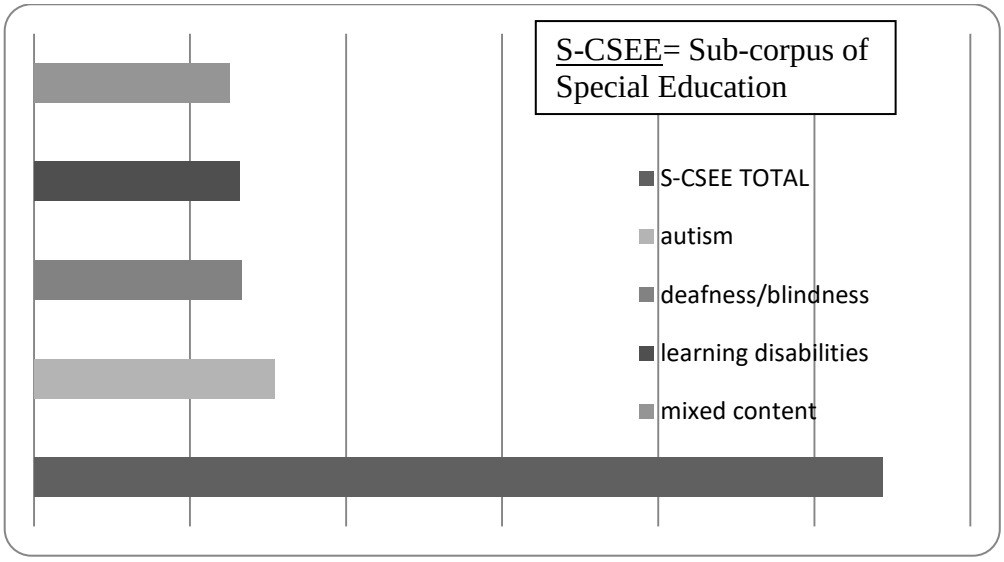
The complete TC, as shown in Figure 3.2, contains 31,167.260 words in three nearly equal sub-corpora; the S-CSEE with 10,879,389 words, the S-CG-AE with 10,085,831 words and the S-CGE with 10,202,040 words.

Figure 3.2: Distribution of three main sub-corpora in the TC



The S-CSEE, (see Figure 3.3), comprises 10,879,389 words in 4 sub-corpora. These sub-corpora comprise of: a sub-corpus of 3,079,642 words on autism; a sub-corpus of 2,654,423 words on deafness/blindness; a sub-corpus of 2,638,693 words on learning disabilities (borrowed from official e-journals); and a sub-corpus of 2,506,631 words on a combination of all the previous special education and disability topics (borrowed from random websites).

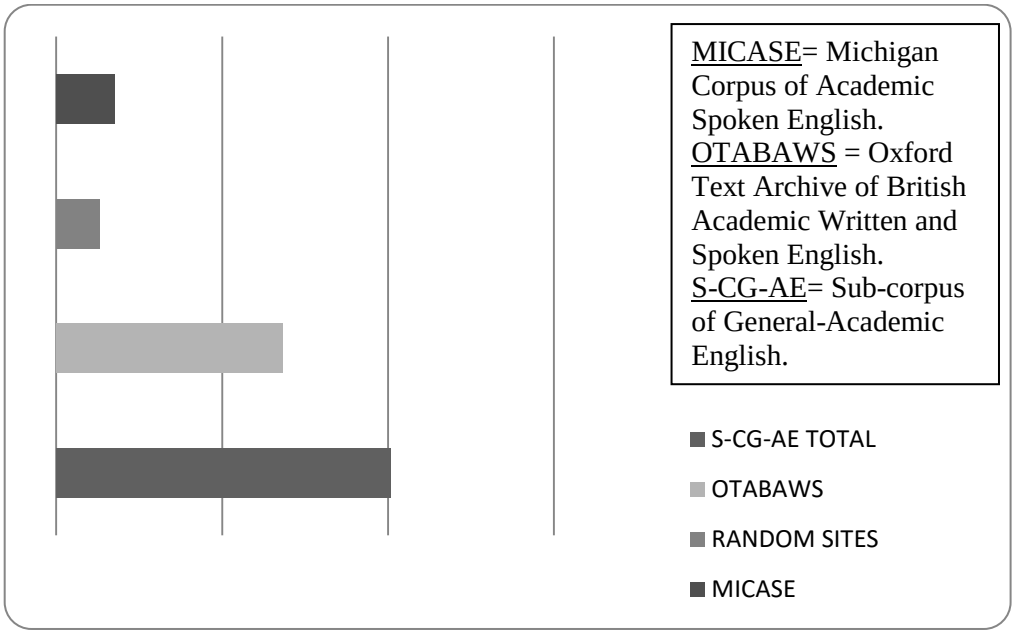
Figure 3.3: Distribution of sub-corpora in S-CSEE



The S-CG-AE, as shown in Figure 3.4, comprises 10,085,831 words in three sub-corpora. These sub-corpora comprise of: a sub-corpus of 6,840,933 words

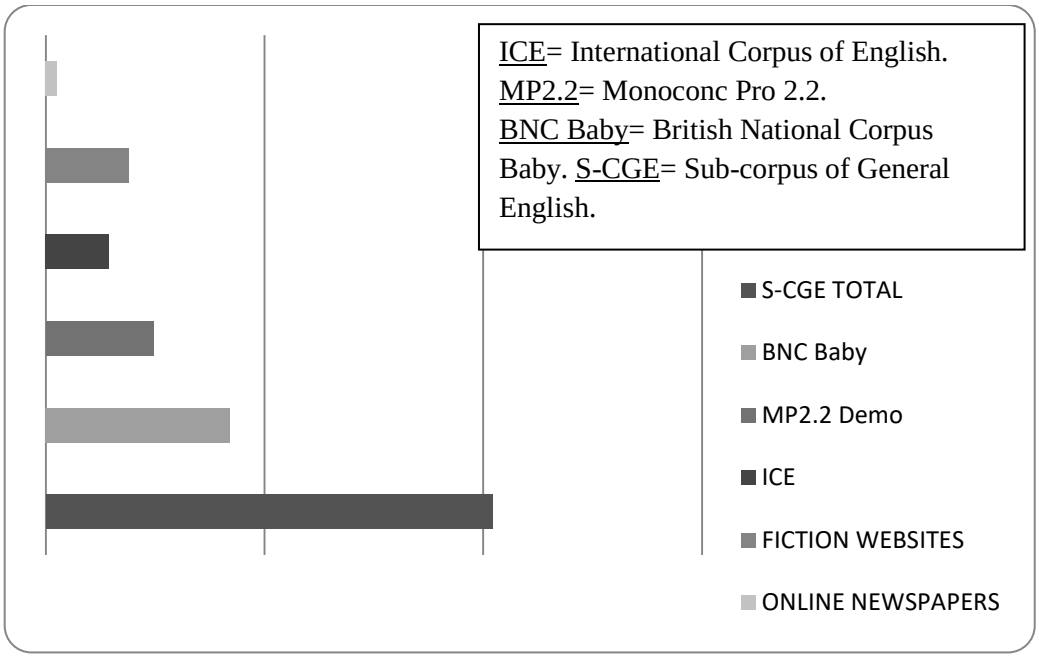
from the Oxford Text Archive of British Academic Written and Spoken English (OTABAWS); a sub-corpus of 1,302,043 words from random pedagogic/academic websites and e-journals that were freely available on the Internet; and a sub-corpus of 1,755,245 words from MICASE (Michigan Corpus of Academic Spoken English).

Figure 3.4: Distribution of sub-corpora in S-CG-AE



The S-CGE, as shown in Figure 3.5, comprises 10,202,040 words in five sub-corpora. These five sub-corpora comprise of: a sub-corpus of 4,210,993 words from the BNC Baby (General British English); a sub-corpus of 2,447,818 words from the MP2.2 Monoconc Software Demo (General American English); a sub-corpus of 1,444,386 words from the International Corpus of English (ICE); a sub-corpus of 1,885,684 words from novels and fiction stories from random websites freely available on the Internet; and a sub-corpus of 256,061 words from random on-line newspaper texts, which were also freely available on the Internet and visited sporadically and in random order. The newspaper texts appeared in both British and American English and were chosen to be as up-to-date as possible at the time of collection (2009-2011).

Figure 3.5: Distribution of sub-corpora in S-CGE



To maintain balance apart from representativeness, the Special Education sub-corpus consists of 10,879,379 words, the General-Academic one consists of 10,085,831 words and the General English one consists of 10,202,040 words, adding up to a total of about 30 million words. The addition of more text stopped at this point because (a) the TC was intuitively and data-wise considered sufficient given that the target words investigated in the tasks of this study are present in the TC in a significant quantity (see Appendix 3.10), and (b) the criterion, outlined in section 2.3.1, of making it look like a careful assemblage of equal in quantity sub-corpora was met (Hunston, 2008; Zanettin, 2011, McEnery *et al*. 2006) given that each sub-corpus contains approximately 10,000,000 words.

3.4.2 Determining size, register, and data gathering

In terms of corpus size, the TC had to sufficiently cover the three major types of English involved in this study: English for Special Education Purposes (disabilities and the like), English for General-Academic Purposes, and

General English. While choosing a small or a large corpus, I decided that a corpus of around 30 million words is not too small and not too large, but large enough to serve the purpose of this study in line with Tribble and Jones (1997) referred to in section 2.3.1. A quick, unofficial concordancer search of the words and phrases tested in the tasks used in this study showed a sufficient number of raw and authentic examples for students to deal with (see frequency of each target word in Appendix 3.10). Thus, the students would not find themselves in the awkward position of finding no match in one of those searches. However, I will discuss in Chapter 7 if that ample availability of concordance lines proved to be convenient or problematic.

In terms of register, to address the learning objective of understanding target vocabulary, I designed the corpus to reflect the variety of language used for the particular purpose or in the particular academic setting. Because the target vocabulary occurred in specialized texts, the TC mainly contained texts of the students' fields of study (Special Education, Pedagogy and general Academic genres) so that they could find the target words. For example, one of the target words was *resilience.* In General Education texts, the word *resilience* means something like "the physical property of a material that can return to its original shape" (Resilience, no date) while in Special Education texts the word *resilience* means something like a child's or student's "ability to properly adapt to stress and adversity" (Norlin and Slater, 2007). Were it not for the Special Education portion of the TC, it might be impossible for the students to understand the pedagogical meaning of the target word *resilience.*

With regard to corpus data gathering, individual access to electronic data possessed by electronic journals had to be obtained, so I requested and was granted permission to use these texts directly from editors as already mentioned in 3.4.1. Where permission was not granted, corpora of texts were not included in the TC unless they were free to access. The obtained texts were prepared and entered in the TC according to the category in which they belonged (for instance, texts on several disabilities were placed in the same sub-corpus of special education texts).

3.4.3 Testing the Thessaly Corpus

To test the potential of the TC, I searched the word *likely* in it. The search retrieved 9,839 matches for *likely*. However, when I searched matches for *likely* in each sub-corpus separately to observe how it is distributed in them, I retrieved the results shown in Table 3.1:

Table 3.1: Distribution of likely in the TC sub-corpora

Corpus Type	Matches for *likely*
Thessaly Corpus (TC)	9,839
Sub-Corpus of Special Education English (S-CSEE)	***4,109***
Sub-Corpus of General-Academic English (S-CG-AE)	3,955
Sub-Corpus of General English (S-CGE)	1,775

As Table 3.1 shows, the word *likely* is found more frequently (4,109 matches) in highly specialized texts (S-CSEE) and as the table progresses towards less specialized corpora, the matches for *likely* decrease. This was difficult to predict, and may offer a type of "serendipitous learning" (Mahlberg 2005: 38; Flowerdew 2009: 401) which has the potential to open new horizons to both the students and me.

I also searched the phrases *was probable, is probable*, *are probable* and *were probable* to observe the distribution of forms of *be + probable* and retrieved the results shown in Table 3.2:

Table 3.2: Distribution of forms of be + probable in the TC sub-corpora

Corpus Type	*is probable*	*are probable*	*was probable*	*were probable*	
TC	62	1	2	1	
S-CSEE	***18***	1	0	1	
S-CG-AE	***31***	0	1	0	
S-CGE	***13***	0	1	0	

TC= Thessaly Corpus S-CSEE=Sub-corpus of Special Education English. S-CG-AE=Sub-corpus of General-Academic English. S-CGE=Sub-corpus of General English

For example, the phrase *is probable,* as shown in Table 3.2, is less encountered in S-CSEE (18 matches), which contains more specialized texts, than in S-CG-AE. However, Greek students would prefer *is probable* over *likely* simply because the translation of *is probable* is far easier than that of *likely* due to the complicated syntax of the latter one as analyzed in section 2.6. Tables 3.1 and 3.2 might help both the students and myself as a teacher to focus on the words which are more frequently encountered in texts that are relevant to the students' specialty. They also show how important it is for a teacher and his or her students to have a proper corpus.

A second practical test I performed with the TC to test its potential before the actual study was to encourage the students to explore the lexico-grammatical patterns *such as* and *like* (conjunction). The item *such as* is a pattern that causes problems for Greek students in its translation; therefore, they ignore it and almost always replace it with the conjunction *like.* For example, when they want to say or write that they like some kinds of drinks, instead of saying or writing *I like many kinds of drinks such as beer, wine, whisky,* etc., they say or write *I like many kinds of drinks like beer, wine, whisky,* etc., which, while not inaccurate in conversational speech, is not appropriate in formal conversation or writing. The result is that they do not understand what *such as* means in a text, so they avoid it in their discourse

(written or spoken) but the conjunction *like* becomes omnipresent in their written or spoken speech. A search in the TC yielded 42,113 matches of the word *like* (all forms of *be like*) and 17,271 matches of the phrase *such as* (see Table 3.3).

Table 3.3: Distribution of such as and forms of like in sub-corpora of the TC

Corpus type	such as	like	like a	be like	is like	are like	was like	were like
TC	17,271	42,113	3,894	506	615	220	808	151
S-CSEE	***7,031***	***3,660***	182	37	66	14	32	10
S-CG-AE	8,345	18,069	1,249	296	354	105	448	53
S-CGE	1,895	20,384	2,463	173	195	101	328	88

TC= Thessaly Corpus. S-CSEE= Sub-corpus of Special Education English. S-CG-AE= Sub-corpus of General-Academic English. S-CGE=Sub-corpus of General English.

The total yield was expected and normal although *like* is also a verb in the examples found and not only a conjunction that is synonymous to *such as*. However, it came as a surprise that in the special education sub-corpus (S-CSEE), the pattern *such as* occurred twice as frequently as *like* (see italicized and underlined numbers in Table 3.3). These figures demonstrate how frequently the pattern *such as* is found in specialized texts relevant to the field of special education which these students study. This is something a typical teacher might not think of addressing in a traditional presentation because he or she might not recognize the frequency of *such as* in highly specialized texts. As a result of using the TC, teachers can understand how important this pattern is and can at least place more emphasis on teaching *such as* in their classroom. This way, similar words, phrases, and/or patterns might be explored to draw conclusions (Stubbs, 1995, 1996; Varley, 2009: 133; McCarthy, 2016).

Table 3.3 also shows that as one shifts from highly specialized texts towards more general texts, the frequency of *such as* declines. This may be significant when constructing teaching and learning units as part of changing a

syllabus. Swan (1995) (and other similar books) devotes one or two lines of theory to the pattern *such as* and usually only one relevant example. The TC used in that way might benefit students perhaps more than the traditional approach. Even beginner-level students may benefit. For example, one does not have to be an advanced student to realize that the lexical pattern *such as* is found in many field-related English texts and that special focus should be given to that pattern. Such a find might work as an initial prompt for any level of students to study the examples of *such as* offered in the TC. However, this is also a matter of motivation; I will discuss this further in section 3.9.

A third example is the patterns *known that* and *known to* whose syntactic difference confuses Greek students because they seem to find it hard to translate the full infinitive *known to*. The TC search yielded the results shown in Table 3.4:

Table 3.4: Distribution of known that and known to in the TC sub-corpora

CORPUS	*known that*	*known to*	TC= Thessaly Corpus S-CSEE=Sub-corpus of Special Education English. S-CG-AE=Sub-corpus of General-Academic English. S-CGE=Sub-corpus of General English.
TC	287	922	
S-CSEE	***82***	***355***	
S-CG-AE	93	261	
S-CGE	112	306	

As Table 3.4 indicates, the total number of occurrences of *known to* is by far greater than the total number of occurrences of *known that*. The number of occurrences of *known to* in the S-CSEE is more than four times greater than the number of occurrences of *known that* (see italicized and underlined numbers).

The pattern [SUBJECT] + *is/are* + *known to* is more personal because it immediately starts with a subject and one would expect that it does not appear frequently in highly specialized texts. Given this, I claim that a typical teacher might not be aware that pattern is more frequently found in the special education texts, which I also claim are more formal due to their high specificity. These are findings that might not easily crop up in a traditional approach because traditional grammars usually include the above patterns in the context of the Passive Voice grammatical phenomenon and usually devote very little time and space to explaining the differences between *known that* and *known to*. The *known to* finding in the TC is important because it is usually a problematic area for Greek students, and the TC may encourage students and teachers into focusing on its frequent occurrence in special education passages.

An evaluation of the TC in terms of design criteria appears in Appendix 3.8. The criteria were taken from Sinclair (2004a: online). My next methodological step was to place and pretest students according to their language ability level. This will be described in section 3.5.

3.5 Placing and pretesting the research participants

As mentioned in section 3.2, the students were first placed in one of three levels using the International English Language Testing System (IELTS), which is considered a valid and reliable level test. I used the academic reading paper of IELTS, which is EAP/ESP oriented and recognized and, most importantly, close to the needs of the students. An Australian research project including a survey and interviews (McDowall and Merrylees, 1998), aimed at (a) establishing to what extent IELTS meets the needs of the tertiary level institutions that adopt it, (b) establishing which institutions are using IELTS as their main placement instrument for testing English proficiency for incoming students from a non-English speaking background, and (c) establishing what other language proficiency tests are being used for assessment of English proficiency, demonstrated that IELTS is the preferred test and the test that is most commonly used. Other researchers have also shown that IELTS is a

reliable system of English language assessment (Charge and Taylor, 1997; Erfani, 2012). McDowall and Merrylees (1998) also found that, of those institutions using instruments other than IELTS or accepting results from other testing bodies, reservations were expressed as to the reliability of these tests. A great number of academics cited IELTS as their preferred test and suggested that it is the best predictor of all the instruments available (McDowall and Merrylees 1998: 116-139).

My review of research in this area identified several issues in research design which this thesis will address: 20 of 28 similar studies did not use an official placement test (section 2.5); some studies did not use a big enough sample of students (section 2.5); other studies grouped students into only one or two ability levels (section 2.5). In contrast, I utilized a recognized placement test (PT), had a sample of 60 students, and I adopted a sampling technique that would analogously distribute all three ability levels of students into the two groups. I will describe this technique in section 3.5.1. After resolving the issue of what PT to use and what sampling technique to adopt, I needed to record the learners' degree of lexical knowledge prior to assigning them the passages with the target vocabulary. To address this issue, I recorded their prior lexical knowledge by using a word knowledge pretest, which I will describe in section 3.5.2. Finally, I will analyze my decisions on sample size in section 3.5.3. Having also observed that 13 of 28 similar studies (nearly 50%) had too small a sample size (section 2.5), I addressed this limitation by using as big a sample as possible in this study.

3.5.1 Stratified sampling

To avoid an over-representation of one ability level in the groups, stratified sampling was used. Using stratified sampling, I selected a representative number of beginner level students (BLSs), intermediate level students (ILSs), and advanced level students (ALSs) to form each group so the two groups comprised all three levels analogously. This kind of random sampling from different strata improves the representative nature of the sample by reducing

the sampling error (Heyns, 1974). Thus, students with different ability levels were equally distributed across Group1 (G1) and Group 2 (G2), (see also diagram of placing and teaching stages, in Appendix 3.7). The two groups (G1+G2) worked on both learning methods via two different passages of analogous difficulty level; G1 dealt with Specialized Passage 1 (SP1) via CTM and G2 with SP1 via TTM. Then, G1 dealt with Specialized Passage 2 (SP2) via TTM and G2 with SP2 via CTM. The point was for all my 60 students to be exposed to both TTM and CTM but not using the same passage when moving on from one teaching method to the other. Students belonged to only one group; because the same passages were given to both groups, the target words encountered in SP1 would be taught to the groups, either through CTM or TTM. Similarly, target words encountered in SP2 would be taught to both groups but using different teaching methods.

My initial goal was to perform this research only with ILSs and ALSs, but a tentative placement test given previously to a similar student population identified a small but not insignificant number of BLSs. As a result, BLSs were included in the present research so that their performance could also be examined. A further reason for choosing to work with three levels is that in the course of this study I encountered small- or large-scale studies only with ALSs (Sun, 2003; Cresswell, 2007; Kayaoglou, 2013) or only with ILSs (Gaskell and Cobb, 2004; Gilmore, 2009; Kennedy and Miceli, 2010; Akbari *et al.* 2015; Momeni, 2015; Sah, 2015) or only with BLSs (Boulton, 2009a; Barrera, 2013; Wu, 2015) or only with ALSs + ILSs (Yunus and Awab, 2014) or ALSs + BLSs (Chan and Liou, 2005) but no large-scale studies with advanced level, intermediate level and beginner level students such as mine (as also mentioned in section 3.5).

Those three crude distinctions (beginner, intermediate, advanced) are useful to predict what, for example, a beginner-level non-native English speaker would be able to do when using the TC. There was no need for a finer level of distinction because this research did not focus on developing a test instrument or testing the reliability and validity of it. In other words, assessing how exact the three distinctions were was beyond the scope of this thesis. Numerous authors have suggested and approved of creating those three crude

distinctions in assessment instruments. For example, Bachman (1990), and Douglas and Smith (1997) discussed the merits of the three distinctions and proved them constructive. Instead, I focus on the applications of this research for a teaching and learning unit, particularly the effectiveness of CTM or TTM on the three crude types of students. In particular, I assess which one of the three types of students most benefit from the use of CTM or TTM in developing their reading skills.

3.5.2 Word knowledge pretest given to research participants

To assess the learners' degree (or depth) of lexical knowledge – and, crucially, to investigate the students' prior knowledge of target vocabulary of this study beforehand, a word knowledge pretest was given to them. The test administered was an adaptation of the Schmitt and Zimmerman Scale (in Schmitt and Zimmerman, 2002: 154). The scale is as follows:

> A= I don't know the word
>
> B= I understand the word when I hear or see it in a sentence, but I don't know how to use it in my own speaking or writing
>
> C= I know this word and can use it in my own speaking and writing

If A is chosen by the student, the teacher makes sure to include the particular word in the language tasks. If B is chosen, the teacher includes words of that category in the tasks in such a way as to encourage students to use them in their own speech and writing. Finally, if C is chosen, the teacher makes sure to exclude words of that category from the tasks. For more information about the pretest, see Appendix 3.11 which includes the whole word knowledge pretest and the numerical results obtained from it.

3.5.3 Sample size of research participants

Determining sample size is such an important issue that the reliability of the results mainly depends on this. The sample size should not be too small or too large. If the sample size is too small, the analysis lacks the precision to provide reliable conclusions for the investigation. If the sample size is too large, it would be a waste of time and resources. Research based on statistical analysis is reliable only when it has been thoughtfully planned (Huberty, 1987). The planning must be initiated from the beginning of sample selection. The problem should be carefully defined and operationalized so that the researcher is able to decide the methodology behind the study, whether it is based on sample or census (Bolles, 1988). If it is based on sample, which type of sampling, i.e., random or purposive, should be used? Experimental results must be selected from the appropriate population. That is, the study should be randomized correctly. The researcher may be able to obtain approximate results about the behavior of the distribution of an estimator as the sample size increases. This influenced my sampling decisions toward a large sample because big samples of students of each of the three student ability levels (BLSs, ILSs, ALS) increase the chance of finding a significant difference among them across the two teaching methods (TTM and TTM) and reflect the population more accurately.

Relevant literature places much importance upon always trying to enlarge the sample size in research (Desu and Raghavarao, 1990). However, “there are no hard-and-fast rules in setting the optimal sample size” (Dörnyei and Taguchi 2009: 62) but some essential guidelines should be adhered to. In the survey research literature, a range of 1% - 10% of the population is usually mentioned as the “magic sampling fraction” depending on how careful the selection has been. The sample should include 30 or more people so that normal distribution and statistical significance are achieved (Dörnyei and Taguchi 2009: 62-63). A further factor that influenced the use of a big sample of students is that 13 of 28 relevant and recent studies, described and analyzed in section 2.4 and 2.5, appear to have used too small a sample of student-subjects (see Appendix 2.1 for details), which constitutes a limitation of previous relevant studies.

Using 60 students in this study contributes to the validity and representativeness of this study. While exposed to CTM at different points in the study, all 60 students received both CTM and TTM. The most representative sample size was created by first carefully considering the practical constraints, such as restricted numbers of PCs, timetabling restrictions for use of PC lab, etc. Still, my research emphasized the question of sample size, given the great quantity of students available. It would be an opportunity to have valid, representative, and more reliable results if more students were engaged, even if that would increase the number of visits to the lab for the teaching sessions and, consequently, prolong the period in which this research would be performed. I argue, therefore, that the 60 students available were sufficient in this case given that the whole class enrolment was 125 students.

After determining the sample size, my next step was to train the student-subjects to use the MP2.2 corpus concordancing program for the needs of this research. Section 3.6 describes the basic components of this training.

3.6 Corpus concordancing training

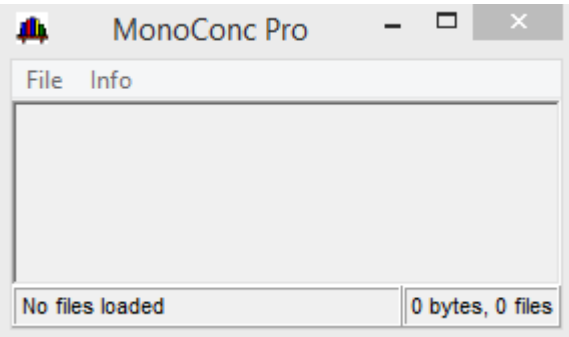
The need to appropriately train the students in corpus concordancing prior to their participation in this research emerged not only from my own intuition and need but also from other researchers referred to in section 2.4 who performed analogous training before their experiments and emphasized the importance of such training (Breyer, 2009; Yunus and Awab, 2014). As shown in section 2.5, four studies of fifteen appear to have performed inadequate corpus concordancing training so I needed to address such a limitation in this study.

For this research, I created two training sessions that were tailored to the specific needs of the students in handling basic operations of the MP2.2 corpus concordancing software. Before describing those two corpus concordancing training sessions, I will first explain briefly in section 3.6.1 what the MP2.2 program does and how it works in terms of its fundamental functions.

3.6.1 MonoConc Pro 2.2

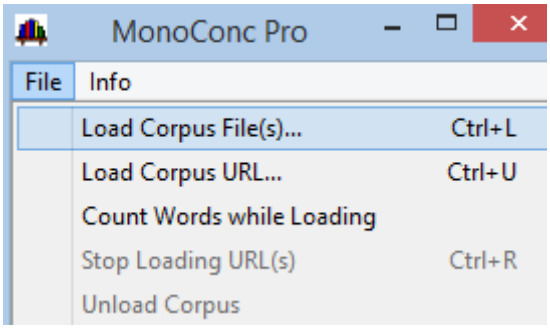
MonoConc Pro 2.2 (MP2.2) is a program that allows its users (researchers, teachers and students) to perform research into language by using a corpus. Once it is installed and opened, it reveals a simple screen with a blank window and two items in the menu bar: File and Info (see Figure 3.6)

Figure 3.6: Window opened at start of program



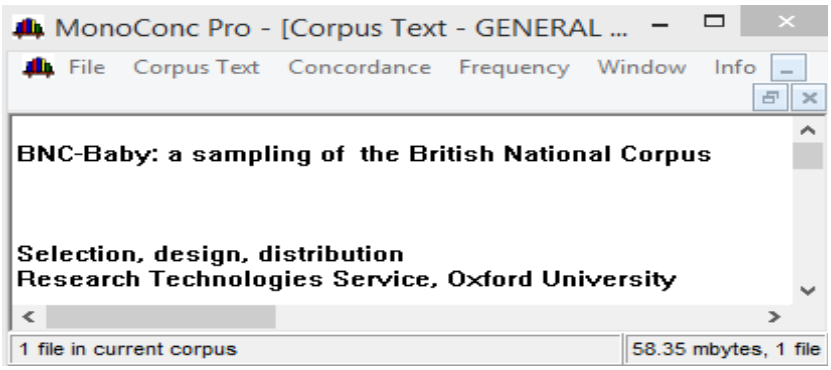
To load a desired corpus from one's computer, Load Corpus File(s) must be chosen from the File menu (see Figure 3.7)

Figure 3.7: File menu opened to choose Load Corpus File(s) from PC



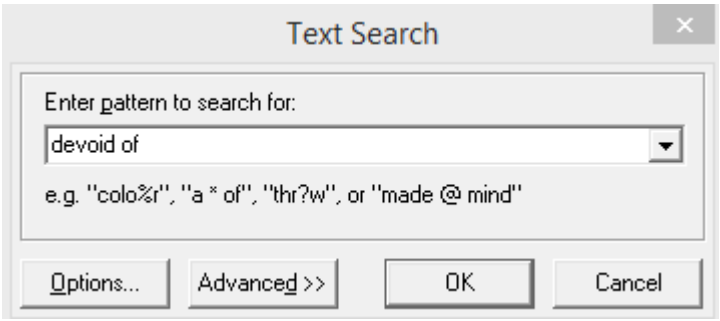
Once the desired corpus is loaded, a corpus file window is revealed (Figure 3.8), which means that the corpus is ready to work on. The file loading process is also accompanied by the appearance of some new menus: Corpus Text, Concordance, Frequency, Window, and Info. Among them, the most fundamental command to the operation of the program is Concordance.

Figure 3.8: Corpus file window with BNC Baby Corpus loaded



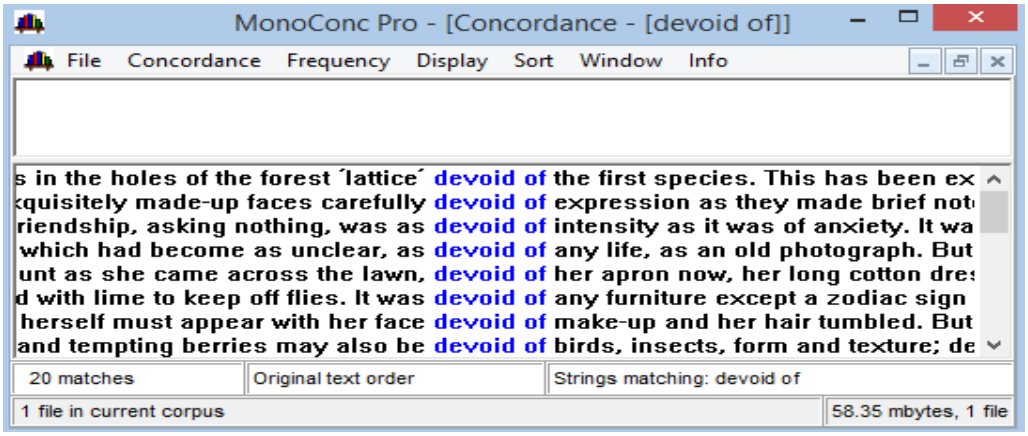
To explore the contents of the corpus and initiate a search for a word or phrase, the Search commands from the Concordance menu must be chosen and a search string must be entered (see sample search string *devoid of* in Figure 3.9).

Figure 3.9: Text Search window with sample search string devoid of



By pressing OK on the Search Text window, the program searches the corpus in a few seconds, captures all concordance lines including *devoid of* and reveals them in a new window (Figure 3.10).

Figure 3.10: Eight of 20 concordance lines of devoid of retrieved with MP2.2



In this way, a user can study what comes before and after *devoid of* to discover its meaning, form conclusions about how it is used in most concordance lines or, indeed, whatever a user wants to find out about *devoid of*. Apart from those fundamental operations, a user can define the number of characters before and after *devoid of*, use the wildcard character * to search for all exemplars of words before or after *devoid of*, sort the instances so that they are in alphabetical order of the word following or preceding *devoid of*, etc. How the program is used, which can be very different, depends on the aims and goals of its users.

More details of capabilities of the program will be described in section 3.6.2, in which I will refer to the two training sessions I taught the students to prepare them to handle the program through the CTM tasks of this study. In those two sessions I focused on what was needed for them to know about MP2.2 so as to perform the tasks properly.

3.6.2 The corpus concordancing training sessions

To meet the needs of this study, students have to perform CTM tasks that deal with searching meanings of target words. Specifically, I give them instructions on operations including (a) how to open the software and load the necessary corpus, (b) performing a simple text search for target words and phrases, (c) sorting the instances to find word associations, and (d) searching for parts of

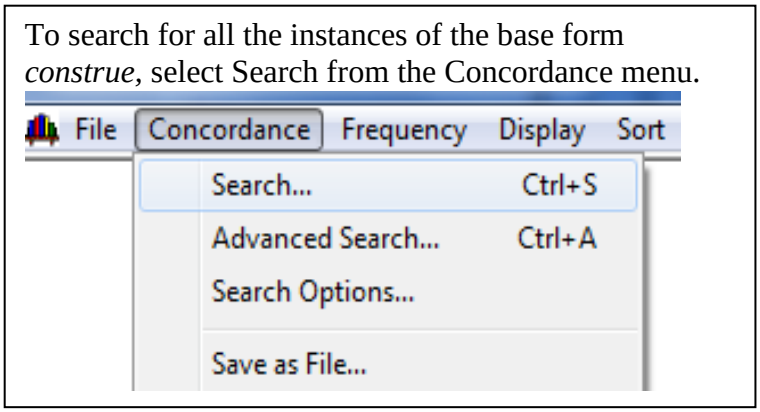
target words by using the wildcard character * (asterisk). Those operations were considered indispensable for the students to familiarize themselves with the software to the extent that they should be able to successfully carry out the stipulated tasks of this research.

In training session 1, I borrowed useful training guidelines from Barlow (2003) who offers detailed and user-friendly instructions on how to operate his software. Following Barlow's (2003) instructions closely and according to my needs in session 1, I assigned the students to (a) load the TC, (b) perform a simple text search, (c) sort the instances, and (d) search for parts of target word (see Appendix 3.9). In training session 2, I borrowed ideas from Sinclair (2003), especially his ideas about how to explore meaning in a series of concordance lines by reading each concordancer in turn and working out its meaning, summarizing the main meaning together, studying the words that appear before and after the KWIC, and coming up with more than one possible explanation (Sinclair 2003: 3-7). I also drew upon his ideas about coselection of words, namely words that occur close to one another (Sinclair 2003: 57-62). Finally, I used his ideas about investigating words that have different meanings, namely finding instances of all possible meanings in concordance lines after close observation (Sinclair 2003: 73-79). Following Sinclair's (2003) ideas selectively according to my needs in session 2, I assigned the students to (a) investigate meanings of target words and understand how meanings are shown, (b) explore the coselection of words, and (c) explore target words whose meanings are quite different (see Appendix 3.9).

Being aware of the many features of the MP2.2 program, I assumed that the students would be confused and overburdened if they were instructed on further software operations and features which were not immediately relevant to the purposes of the present research. In addition, time limits were tight at the university allowing for only a three-hour access to the language lab once a week. Examples of three important training tasks assigned to the students to familiarize them with the MP2.2 program appear in Figures 3.11, 3.12, and 3.13. Figure 3.11 shows one of a series of basic operations of the MP2.2 software. When a user wants to look up a word or phrase in the corpus inserted

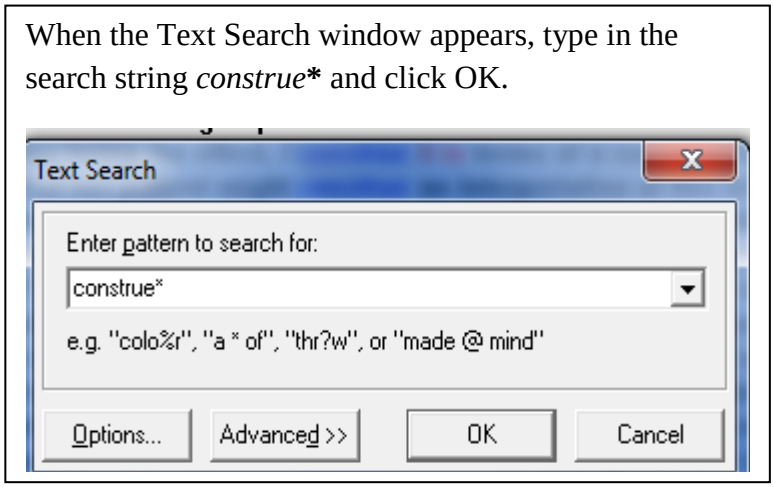
in the software, they click on Concordance and its menu appears. From the Concordance menu the user selects Search.

Figure 3.11: First example of the MP2.2 software training tasks



Then, as shown in Figure 3.12, a Text Search window appears in which the user can type any search string he or she needs to look up. For instance, the user may type in the search string construe* to look up forms of the verb *construe* and by attaching an asterisk at the end of the search string the user may receive not only concordance lines that contain the target verb *construe* but also other forms such as *construes* or *construed*. As soon as the user clicks OK the software scans the selected corpus for concordance lines of the search string *construe**. This scan usually lasts for a few seconds depending on the size of the inserted corpus; the bigger the corpus the longer the scan. The computer's hardware also contributes to the scanning speed. The scan usually only takes a few seconds in this context.

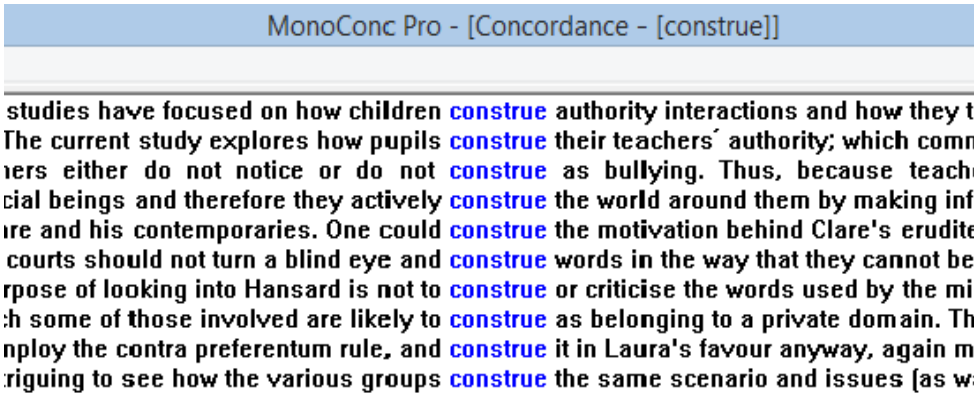
Figure 3.12: Second example of the MP2.2 software training tasks



After the scan, the software reveals the results in the form of concordance lines as shown in Figure 3.13. Each concordance line is different from the previous and the next one and, in the case of the TC, it usually belongs to a different text. The user studies the different concordance lines revealed and attempts to find out the meaning of the target word (highlighted in blue here) that appears in the middle of all the lines.

Figure 3.13: Third example of the MP2.2 software training tasks

The results flood in rapidly in a concordancer results window (see the results below) and the sentences are there for you to examine them so as for example to observe which words and/or prepositions frequently follow *construe*. Read each example in turn and work out its sense. Do not use a dictionary, but make notes on the meanings.



At the end of the two training sessions, the students were to be able to operate the software properly and independently in their classroom so that they would

encounter no problems with it in my pilot and main studies. In particular, at the end of session 1, the students were to be able to handle the mechanics of the software (loading, selecting from menus, etc) and at the end of session 2, they were to be able to appropriately look up the target words in the included corpus and reflect on the concordance lines revealed (KWIC study and investigation according to set learning goals).

After establishing that the students were familiarized with the software, I defined appropriate TTM and CTM tasks to meet the needs of this study according to the research aims and research questions defined in sections 1.3 and 3.2. Next, I will describe the TTM and CTM tasks in sections 3.7 and 3.8, respectively.

3.7 Traditional Teaching Method (TTM) tasks and questionnaire

This methodology for the TTM tasks was a variant of the traditional Presentation-Practice-Production model (PPP model) which teachers in Greece have used over the last years when dealing with new lexis and grammatico-syntactic patterns in such university contexts. Their mainstream orthodoxy demanded the presentation of language items, their controlled practice, and then the opportunity for production through a relevant task (Richards and Rodgers, 2001; Nunan, 1988; Foster, 1999). This approach is also similar to Harmer's (2001) ESA (Engage / Study / Activate) teaching model.

In this case, the presentation of language items was in the form of a specialized text in which target vocabulary appears, the controlled practice was performed by the students demonstrating that they understood the meaning of target words out of their immediate context, and the production stage involved the students writing new sentences using target words.

The teaching and learning sessions were divided into two stages. The first stage is the Linguistic Tasks Stage, which involves fulfillment of four language tasks (Tasks 1, 2, 3, and 4). The second stage is the Questionnaire Stage, which involves completion of a questionnaire about TTM by the students. In section 3.7.1, I will describe Task 1 of the Linguistic Tasks Stage via TTM.

3.7.1 Task 1: Meaning(s) in context

Task 1 of Linguistic Tasks Stage assigns students to elicit the meaning of ten target words in the first of two specialized passages (SP1) without being offered the translation of words into Greek or without the use of dictionaries. Worksheet 2 for use with TTM and SP1 can be seen in Appendix 3.1, and Worksheet 4 for use with TTM and SP2 can be seen in Appendix 3.6. The target words were chosen from my experience as a teacher, estimation of difficulty and because most of them were spread throughout the passage and not only in one or two paragraphs. The word knowledge pretest had indicated that the words chosen to be dealt with in the four tasks were unknown to a vast majority of the students (see pretest in Appendix 3.11). Some words which were known to them were not included in the tasks of this study.

The aim of the task is for students to understand the meaning of target vocabulary through contextualization, namely by looking at the context of the word they explore. This technique is widely used when trying to elicit the meaning of unknown words and something which students in the present learning context have been used to doing for many years. Contextualization can be done by studying lexical items or phrases, combinations of words known as collocations (Lewis, 1993; Willis, 1990; Nattinger and DeCarrico, 1992; Arnaud and Savignon, 1997); chunking language while trying to elicit meaning of a word or words in a sentence or a series of sentences (Lewis, 1997); or, combining many of those various comprehension strategies (Hulatijn, 1997).

The concept of 'context' is crucial to research on teaching and learning vocabulary, and enables teachers and researchers to acknowledge that vocabulary learning is not merely an issue of learning words by heart. The process of learning a new word includes not only recognition of its form or knowing the meaning in the mother tongue but also knowing its particular properties, collocations (groupings of words), and functions, such as its frequency and suitability for a particular context, and ability to recognize it effectively and use it appropriately in a real-life interaction or situation (Oxford and Scarcella, 1994; Nation, 1990). An extract from Task 1 via TTM appears in Figure 3.14:

Figure 3.14: Four of 10 target words from SP1 to be translated by students via TTM

TASK 1: Reading Comprehension of Specialized Passage 1 (SP1).
Read SP1 in the handout. Then look at the 10 words given below and write their possible meaning in English or Greek (the 10 words are in bold and underlined in the text).
(Two-page specialized passage 1)
Words
detriment = ……...
lobbying = ……
disproportionate = ……
mainstream= ……

The learning outcome that Task 1 examines is students' ability to derive the meanings of target vocabulary by skimming and scanning SP1, looking closely at the context of target words, and finally providing explanations in written form in the relevant worksheet. For example, in Figure 3.14, the first target word is *detriment.* Students are expected to study its context in SP1 (see relevant short extract from SP1 in Figure 3.15 and the entire passage in

Appendix 3. 1) and write down Greek explanations such as φθορά, ζημιά, or βλάβη or English explanations in the form of phrases or synonyms (a damage or loss, hurt, etc.).

Figure 3.15: Extract from SP1 containing target word detriment

> Children with Autism Spectrum Disorder (ASD), and social, emotional or behavioural difficulties (SEBD) provide an excellent example of where the old Warnock framework is out of date and where significant cracks exist in the system to the **detriment** of those who fall between them. Far more important, however, is the frustration and upset caused to parents and families by the failure of the system to meet the needs of these children. This needs most urgent resolution. (House of Commons Education and Skills Committee 2006, 18, para. 43).

The task was designed in a way that each target word is not too close to the next underlined target word so that students benefit from ample reading space before and after the target word, which decreases confusion and enables better understanding. In this example, *detriment* appears 12 lines after *lobbying*, which is 3 lines after *disproportionate*, which occurs 7 lines after *mainstream*, etc. At a later stage, the learning outcome that this task checks would be contrasted with the learning outcome of an identical task via CTM, which will be explained in section 3.8.

Marking the student answers is simple and straightforward. Each one of the 10 target words carries one point or mark so the entire mark is out of 10. The students' marks are then converted into percentage scores. Task 2 of Linguistic Tasks Stage is a continuation of Task 1 in terms of target words provided. I will describe Task 2 of Linguistic Tasks Stage via TTM in section 3.7.2.

3.7.2 Task 2: Filling the gap

Task 2 is a commonly used semi-productive task in which students have to show that they understand the meanings of target words by studying single sentences with gaps that hide the target words. In the task, students have to

complete fill-in-the-blank sentences using the target words through the help of a passage (see the worksheet in Appendix 3.1). As a continuation of Task 1 described in section 3.7.1, the aim of Task 2 is for students to not only understand the meaning of target words after reading SP1 but also be able to insert them correctly in the missing gaps in the sentences, thus offering a more productive task engagement than in Task 1. An extract from Task 2 to be completed using TTM appears in Figure 3.16:

Figure 3.16: 1 of 10 sentences with gaps to be completed by students via TTM (correct word: pervasive).

> TASK 2: Fill in the gapped sentences using the words below in any suitable form and the SP1 (Specialized Passage 1) provided in a handout:
> [pervasive, underpin (verb), detriment, caveat, provision, lobby (verb), inclusive, disproportionate, favor (verb), mainstream (adjective)]
> Sentence 4. The smell of burning oil was so .....that I opened the window to get fresh air.

In Task 2, ten target words are provided, one of which is the correct word to fill the gap in the sentence. Ten such sentences are provided. Figure 3.16 shows sentence number four in the actual worksheet. Students are expected to study carefully the context before and after the gap and fill it in with one of the ten target words to demonstrate whether they understand the correct meaning of the target word. In the gapped sentence shown in Figure 3.16, they have to place the adjective *pervasive* in order that the sentence should be syntactically and semantically correct. At a later stage, the learning outcome that this task checks would be contrasted with the learning outcome of an identical task via CTM, which will be explained in section 3.8.

The expected learning outcome that Task 2 examines is students' ability to correctly utilize target words in the gaps in the sentences after scanning SP1 in the previous task. This time they have to study more focused single sentences, which were not taken from SP1 but were thought out by me. In this task, they may have the chance to determine undiscovered meanings of target words from the previous task, ascertain discovered meanings of target words in the previous task or even write different or more correct meanings than the meanings they identified in the previous task.

As with Task 1, the answers of the students to Task 2 are marked in a simple and straightforward manner. Each one of the ten target words carries one point or mark if used correctly in the gaps in the sentences; the marks are out of 10 and again converted into percentage scores. Task 3 of Linguistic Tasks Stage is a continuation of Tasks 1 and 2 in terms of the target words provided. I will describe Task 3 of Linguistic Tasks Stage via TTM in section 3.7.3.

3.7.3 Task 3: Making sentences

Task 3 is an entirely productive task in which the students have to create their own sentences using some of the target words included in the passage. The aim is to see if students are able to use those words in a productive way by creating syntactically and semantically correct sentences. This task is a continuation of the two previous tasks; as it is not sufficient for students to only know how to recognize a word and insert it into a gap in a sentence correctly (tested in Tasks 1 and 2, respectively), it is also useful to see if they could use the words productively in written form. An extract from Task 3 via TTM appears in Figure 3.17:

Figure 3.17: Three of 10 target words to be used in sentences produced by students

TASK 3: Make your own sentences using the 10 words given below and the SP1 (Specialized Passage 1) provided in a handout. The 10 words are underlined in the text.
Words
detriment = ……
lobby (verb) = ……
disproportionate = ……..

The learning outcome that Task 3 examines is students' ability to write new and correct sentences of their own by using target words provided in a handout. These students would have previously attempted to discover their meaning in Task 1 and use them in single sentences with gaps in Task 2. In Task 3 they are expected to think harder and deeper to create their own sentences after learning

the ways that the target words are used in SP1 and in the single sentences provided in Task 2. For example, in Task 3 as shown in Figure 3.17, there are 3 of 10 target words provided. The first target word is *detriment,* which is a noun. Students have to write a semantically and syntactically correct sentence next to it including the word *detriment*. At a later stage, the learning outcome that this task checks would be contrasted with the learning outcome of an identical task via CTM, which will be explained in section 3.8.

Marking the answers of the students in Task 3 is again simple and straightforward. Each one of the ten target words carries one point or mark awarded if the student uses the target word correctly in the newly-produced sentence and generally if the whole sentence is correct. Marking is out of 10 and converted into percentage scores. Task 4 of Linguistic Tasks Stage is a continuation of Tasks 1, 2, and 3 in terms of the target word, which is one of those already provided in the three previous tasks. I will describe Task 4 of Linguistic Tasks Stage via TTM in section 3.7.4.

3.7.4 Task 4: Finding the correct meaning

In Task 4 of Linguistic Tasks Stage, students have to investigate the meaning(s) of the target word *caveat* by studying its cotext in a passage and by looking up the word in the relevant monolingual dictionary entry provided (see Task 4 of Worksheet 2 for use with TTM and SP1 in Appendix 3.1). The same task is assigned in Task 4 of Worksheet 4 for use with TTM and SP2 (Appendix 3.6) but this time the target word is *dorsal.* The aim is (a) to elicit as many meanings of that word as possible by using, apart from the passage supplied, a learning tool that might help to find multiple meanings such as a monolingual dictionary (usually a well-known, modern one available on the Internet or in print form), and (b) to enable later contrast with another learning tool, that is an electronic corpus concordancer in the context of CTM. An extract from Task 4 via TTM appears in Figure 3.18:

Figure 3.18: Screenshot of dictionary lemma caveat and 5 of 10 given meanings as distracters to students (correct meanings: 2 and 3)

TASK 4: Underline (or put an X in the square next to) the meaning(s) of *caveat.* Wrong meanings count against your score. The Specialized Passage 1 and the on-line dictionary entry provided can help you:

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

The learning outcome that Task 4 via TTM examines is students' ability to find out correct meanings of the target word *caveat* from a number of provided meanings. This time they have to study the explanation and exemplification of the target word in an online dictionary entry and then choose the meaning(s) that correspond to the target word correctly. For example, as shown in Figure 3.18, there is one target word provided*: caveat.* The lemma *caveat* is a noun. Students have to study the lemma *caveat*, look at the ten possible meanings offered, and tick or underline the ones that were correct. At a later stage, the learning outcome that this task checks would be contrasted with the learning outcome of a similar task via CTM, which will be explained in section 3.8.

Again, marking the answers of students in Task 4 is simple and straightforward. If four meanings are correct and a student identifies all four, they would receive a score of 100%. If they identify 2 of the 4 correct ones, they would receive a score of 50%. The percentage scores in tasks via TTM would then be contrasted with the ones in tasks via CTM as will be shown at a later stage.

After finishing Linguistic Tasks Stage (Tasks 1-4), students proceed to Questionnaire Stage. This stage involves completion of a questionnaire, which is about TTM. I will describe Questionnaire Stage about TTM in section 3.7.5.

3.7.5 Questionnaire about TTM

In the Questionnaire Stage about TTM, students have to answer a TTM questionnaire. The full motivational questionnaire about TTM is identical to the one about CTM (Appendix 3.3) except for the part on Thessaly Corpus

which does not apply in TTM (the questions can be seen in Appendix 3.4). My aim is to compare students' responses with those of an identical questionnaire assigned to the students in the CTM sessions. An extract from the 35-item TTM questionnaire appears in Figure 3.19:

Figure 3.19: Five of 35 questionnaire items given to the TTM group of students

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

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

The outcome that the TTM questionnaire explores is whether students express their degree of agreement with 35 statements about the TTM tasks and, more

generally, about the traditional teaching and learning method. An example question is shown in Figure 3.19: students were asked to what extent they agreed or disagreed with the statement, “1. The place of the lesson was convenient.” If students disagreed with the statement, they circled one number out of 1, 2, and 3 according to degree of disagreement; if they agreed, they circled one number out of 4, 5, and 6 according to degree of agreement. At a later stage, the outcome that the questionnaire checks was contrasted with the outcome of a similar, 35-item questionnaire about CTM, which will be explained in section 3.8. Measuring the responses of students to the questionnaire was simple; detailed results of measurement will appear in Chapter 5. An average number for all 35 responses was calculated.

As well as the TTM tasks I prepared for SP1, I prepared identical tasks for the second specialized passage (SP2) used in this study. These tasks can be seen in Worksheet 4 for use with TTM and SP2 in Appendix 3.6. After creating the TTM tasks and questionnaire, I created analogous CTM tasks and a questionnaire so that the comparison and contrast between TTM and CTM would be as reliable as possible. In section 3.8, I will describe the CTM tasks and questionnaire.

3.8 Corpus Teaching Method (CTM) tasks and questionnaire

The methodology for the CTM tasks was based on the theoretical background about corpus concordancing and DDL described in Chapter 2. As with the TTM design described in section 3.7, the teaching and learning sessions were divided into two stages. The first stage is the Linguistic Tasks Stage, which involves fulfillment of four language tasks (Tasks 1, 2, 3, and 4). The second stage is the Questionnaire Stage, which involves completion of a questionnaire about CTM by the students.

The overall goal in Tasks 1-4 via CTM is for students to become competent users of the words they do not know by developing skills such as (a) exploring and eliciting meanings of target words so as to use them correctly in

speaking and writing in the future, (b) reporting findings and research results in summarized, spoken or written form, (c) identifying and forming their own rules for target vocabulary in use, and (d) contextualizing and explaining meanings of target words. CTM was used in order to offer students the opportunity to enhance the process of reading general or specialized passages via exposure to numerous instances of the same target word in context, while guiding them in exploring, practicing and later using the target word in writing or speaking.

Concordances of 70-80 characters were obtained for use in receptive and productive activities. It was made clear to the students that they did not need to understand the concordancer examples word for word. Instead, their aim had to be to familiarize themselves with the use and meaning of target words, with the linguistic patterns in which they were used, and with the types of words that were usually found in the immediate context of these target words (Stubbs, 2001; Flowerdew and Mahlberg, 2009). Thus, the process for learning was the following: (a) finding concordance lines with the requested target word and looking at words around it, thinking of the target word's meaning, (b) getting to know the linguistic patterns, if applicable, around the target word by referring to the concordance lines while performing the tasks, and (c) practicing and producing target words through fill-in-the-gap and open-ended activities. The overall process showed a shift from the traditional Presentation-Practice-Production model to a Research-Report-Practice-Production model. The latter is endorsed by proponents of the DDL (data-driven learning) approach, which exploits corpus concordancing in the classroom either for research or teaching or both (Johns, 1986; Stevens, 1991, 1995: online; Thurston and Candlin, 1998; Garton, 1996; Tribble and Jones, 1997; Tribble, 1997; Sinclair, 1990, 2003, 2004a; Barlow, 2003; Gavioli, 2005; and many others).

In section 3.8.1, I will describe Task 1 of the Linguistic Tasks Stage via CTM. Task 2 of Linguistic Tasks Stage via CTM is a continuation of Task 1 in terms of the target words provided. I will describe Task 2 of Linguistic Tasks Stage via CTM in section 3.8.2. Task 3 of Linguistic Tasks Stage via CTM is a continuation of Tasks 1 and 2 in terms of the target words provided. I will

describe Task 3 of Linguistic Tasks Stage via CTM in section 3.8.3. Task 4 of Linguistic Tasks Stage via CTM is a continuation of Tasks 1, 2, and 3 in terms of the target word, which is one word already provided in the three previous tasks. I will describe Task 4 of Linguistic Tasks Stage via CTM in section 3.8.4. After finishing Stage 1 via CTM, the students proceeded to Questionnaire Stage. This stage involved completion of a questionnaire, which was about CTM. I will describe Questionnaire Stage in section 3.8.5.

3.8.1 Task 1: Meaning(s) in context

Task 1 of Linguistic Tasks Stage assigns students to read one of two specialized passages (SP1) and understand target words by using the Thessaly Corpus (TC). Worksheet 1 for use with CTM and SP1 can be found in Appendix 3.2 and Worksheet 3 for use with CTM and SP2 can be found in Appendix 3.5.

The aim of the receptive task is to derive the meaning of ten target words selected from the passage by me. The target words have to be explored via MP2.2 concordancer software to elicit meanings, which are then written down in in Greek or English. By investigating and observing the surrounding text of the words under exploration in a number of concordance lines, students are involved in a learning situation in which they make valid inferences based on the language data offered by the concordancer. As already stated in section 1.1, I termed this new method as CTM (Corpus Teaching Method) to distinguish it from the existing TTM (Traditional Teaching Method).

It is known that one word might have more than one meaning (Ravin and Leacock, 2000; Blank, 2003; Hurford, Heasley, and Smith, 2007; Thomas, 2014). As discussed in Chapter 2, the correct meaning is usually identified through the words before or after it, in other words, its context. By adopting CTM, students can investigate, select and decide on the meaning of target words from several authentic examples identified by the concordancing program. Thus, the students can have active control of the learning process; as

a result, they may assimilate and remember the meaning of the word(s) they explore more easily. Figure 3.20 shows an extract from Task 1 via CTM:

Figure 3.20: Four of 10 target words from SP1 to be translated by students via CTM

TASK 1: Reading Comprehension of Specialized Passage 1 (SP1). Read SP1 in the handout. Then look at the 10 words given below 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).
(Two-page specialized passage 1)
Words
detriment = …….
lobbying = ……..
disproportionate = ……..
mainstream = …….....

The learning outcome that Task 1 examines is students' ability to discover the meaning of target vocabulary by utilizing the MP2.2 concordancer. To succeed, students would have to insert each target word in the software, study various concordance lines containing the target words, derive possible meanings of those words, and finally write down those meanings in the relevant worksheet. For example, the first target word is *detriment*, as shown in Figure 3.20, students are expected to study various concordance lines containing the target word *detriment* (see Figure 3.21) and then write its possible meaning(s) in the relevant worksheet.

Figure 3.21: Eight concordance lines of detriment retrieved with MP2.2

and health professionals of the major detriment it may have on a child´s education,
em exclusive, often to the inadvertent detriment of our deaf students. Given rapid ch
ystem of prioritizing which was to the detriment of many people. Also, this often me
ıals are not being fully utilized I to the detriment not only of services, but more cruci
ısizing the process of inclusion to the detriment of methodological rigour. Only then
e withlpostmodernist thought is to the detriment of disability studies´ (Corker & Shak
s tend to focus on adult nursing to the detriment of the other branches (Wells et al. 2
ate organizations and agencies to the detriment of individuals who get excluded in t
der to create a plan of benefit and not detriment to the child. References American P

As in Task 1 of Linguistic Tasks Stage 1 via TTM, students have to write down Greek explanations such as φθορά, ζημιά, or βλάβη or English explanations in

the form of phrases or synonyms (a damage or loss, hurt, etc.). I made sure that the corpus consulted (TC) already contained ample examples of *detriment*, 123 in all. The learning outcome that this task examines would be contrasted with the learning outcome of Task 1 of Linguistic Tasks Stage via TTM, described in section 3.7.

Marking the answers of students to the present task is identical to marking Task 1 of Linguistic Tasks Stage via TTM. Each one of the ten target words is worth one point or mark; marking is out of 10 and converted into percentage scores.

3.8.2 Task 2: Filling the gap

Task 2 is a semi-productive task in which students have to demonstrate that they understand the meaning(s) of target words. In the task, they are asked to complete fill-in-the-gap sentences using target words via the help of the TC. As a continuation of Task 1 described in section 3.8.1, the aim of Task 2 via CTM is for students to not only understand the meaning of target words after consulting the TC but also be able to place those words correctly in sentences with gaps to be filled in by a missing word, therefore can be described as more productive task engagement than in Task 1. An extract from Task 2 via CTM appears in Figure 3.22:

Figure 3.22: One of 10 fill-in-the-gap sentences to be completed by students via CTM (correct word: pervasive)

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, favor (verb), mainstream (adjective)]
Sentence 4. The smell of burning oil was so .....that I opened the window to get fresh air.

The learning outcome that Task 2 via CTM finds evidence for is whether students would correctly place the target words in the sentences with gaps after studying concordance lines that contain the target words. In this task, they have to look at more focused single sentences with gaps. These sentences were not taken from SP1 but were thought out by me. In this task, they have the chance to search out undiscovered meaning of target words from the previous task, ascertain discovered meanings of target words in the previous task or even write different or more correct meanings than the meanings they identified in the previous task.

In Task 2 there are 10 target words provided per sentence with gaps for missing words. 10 such sentences are given. Figure 3.22 shows sentence number four from the worksheet. Students have to study concordance lines that contain target words and fill it in with one of the 10 target words, if they understand the correct meaning of the target word. In the sentence shown in Figure 3.22, students would consult the TC, view concordance lines of *pervasive* (examples are shown in Figure 3.23), and fill the gap with the adjective *pervasive* so that the sentence is syntactically and semantically correct. The learning outcome that this task finds evidence for would then be contrasted with the learning outcome of Task 2 via TTM, which was described in section 3.7.

Figure 3.23: Nine concordance lines of pervasive retrieved with MP2.2

The use of psychotropic drugs is a pervasive dimension of the medicalization of pro
; that the consequences included a pervasive sense of neglect and decay, a decline
gone unstated. They have been so pervasive and so self-evident that there has beer
stened to cicadas and breathed the pervasive liquorice which grew locally and was p
ıg. And the whole lot smelt l a pervasive stench of damp and mildew. High time
om our native tradition to acquire a pervasive transatlantic twang. Here it grates mor
ırrection). They are certainly a less pervasive influence than are the boardroom knigl
ed earlier on. And I don't know how pervasive that is in the country. <SP>GREER:</S
l all these things I had no idea how pervasive they were. I saw, I was doing them, my

Marking the answers of students to this task is identical to marking Task 2 of Linguistic Tasks Stage via TTM. Each one of the ten target words is worth one point or mark if used correctly in the sentences with gaps. Marking is out of 10 and converted into percentage scores.

3.8.3 Task 3: Making sentences

Task 3 of Linguistic Tasks Stage via CTM (the worksheet can be found in Appendix 3.2) is a totally productive task in which students have to create their own sentences using target words set from the passage with the help of the TC. I describe it as 'totally productive' (not semi-productive like the previous one) because a whole new sentence must be produced by students with the aid of the TC and their own judgment. The aim of this task is to see if students could use those target words in a productive way by creating syntactically and semantically correct sentences. It is a continuation of the previous task but, since it is not enough to only be able to recognize a word and correctly use it to fill in a gap in a sentence it is also useful to know if students are able to use the words productively in written form.

In addition, the task shows to what extent the TC affects students in producing sentences by themselves. They are given the task instructions in written form (as shown in Figure 3.24) and orally (by my reading aloud the instruction) to emphasize that they must not merely copy concordance lines; therefore, during the relevant learning session they are monitored so that they do not copy a whole concordance line is averted. Their answers are checked with the software afterwards to see if they had copied any concordance lines verbatim. An extract from Task 3 of Linguistic Tasks Stage via CTM appears in Figure 3.24:

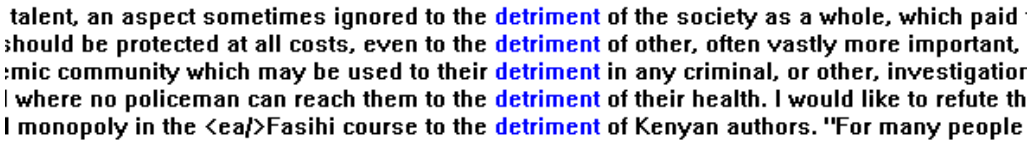
Figure 3.24: Three of 10 target words from SP1 to be used in sentences produced by students via CTM

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:
detriment = ……..
lobby (verb) = ……..
disproportionate = ……

The learning outcome that Task 3 of Stage 1 via CTM examines is students' ability to write new and correct sentences of their own by using target words provided in a handout after consulting the TC through the MP2.2 software.

This time they are expected to think harder and deeper to create their own sentences after exploring the way target words were used in the TC. For example, in Task 3 as shown in Figure 3.24, three of 10 target words are provided. The first target word is *detriment*, which is a noun. By studying concordance lines of *detriment* in the TC (see sample concordance lines in Figure 3.25), students have to write a semantically and syntactically correct sentence including the word *detriment* in it next to it. The learning outcome that this task examines would be contrasted with the learning outcome of Task 3 via TTM, which was described in section 3.7.

Figure 3.25: Five concordance lines of detriment retrieved with MP2.2



Marking the answers of students in Task 3 of Task 1 via CTM is identical to that of previous Linguistic Tasks. Each one of the ten target words is worth one point or mark used correctly in the newly-produced sentence and if the whole sentence is correct. Marking is out of 10 and converted into percentage scores.

3.8.4 Task 4: Finding the correct meaning

In Task 4 (Worksheet 1), students have to investigate the meaning(s) of the target word *caveat* by studying its meaning in the passage (SP1) and the relevant concordance lines provided. This is in contrast to the use of an on-line monolingual dictionary in Task 4 of Worksheet 2 for SP1 via TTM. An identical task is assigned in Worksheet 3 for SP2 via CTM investigating the target word *dorsal* as contrasted with the use of an on-line monolingual dictionary in Task 4 looking at SP2 via TTM (see Appendices 3.5 and 3.6,

respectively). The aim of Task 4 is to elicit as many differentiated meanings of those target words as possible. An extract from Task 4 via CTM appears in Figure 3.26.

Figure 3.26: Twenty-nine concordances of caveat retrieved with MP2.2 and five of 10 given meanings as distracters (correct meanings: 2 and 3)

TASK 4: Underline (or put an X in the square next to) the meaning(s) of *caveat*. Wrong meanings count against your score. The 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 I, and its output O, ...
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, 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

The learning outcome that Task 4 via CTM examines is students' ability to find out correct meanings of a target word from a number of other meanings provided as distracters. In this task, they are expected to study the explanation and exemplification of the target word in concordance lines and then choose meaning(s) that correspond to it correctly. For instance, in Task 4 as shown in Figure 3.26, there is one target word provided*: caveat,* which is a noun. Students have to study the lemma *caveat*, look at the 10 possible meanings offered, and tick or underline the ones that are correct. The learning outcome that this task finds evidence for will be contrasted with the learning outcome of Task 4 via TTM, which was described in section 3.7.

Marking the answers of students in Task 4 via CTM is, again, straightforward. If, for instance, four meanings are correct and a student identifies all four, they would receive a score of 100%. If they identify 2 of the 4 correct ones, they would receive a score of 50%. The percentage scores in tasks via CTM would then be contrasted with the ones in tasks via TTM as will be shown later.

3.8.5 Questionnaire about CTM

In Questionnaire Stage about CTM, I asked students to answer a motivational questionnaire, included in this thesis as Appendix 3.3, Parts I, II, and III. The aim is to compare its answers with the answers of an identical questionnaire administered in the TTM session. For practical reasons that had to do with a need to evaluate the TC, I added a second part in the questionnaire only given to CTM students which asked the students particular questions on the TC (Appendix 3.3, Part II). Responses to the TC-specific questions are expected to help me (a) receive information about how students perceived the TC and (b) evaluate it so as to make decisions on modifying, increasing or decreasing its

size, and/or updating it. An extract from the 35-item CTM questionnaire appears in Figure 3.27:

Figure 3.27: Five of 35 questionnaire items given to the CTM group of students

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
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					1 2 3 4 5 6

The outcome that the CTM questionnaire was designed to explore was students' level of agreement with 35 statements about the CTM tasks and,

more generally, about that teaching and learning method. For example, as shown in Figure 3.27, the first statement is “The place of the lesson was convenient.” If students disagreed with the statement, they circled one number out of 1, 2, and 3 according to degree of disagreement; if they agreed, they circled one number out of 4, 5, and 6 according to degree of agreement. At a later stage, the outcome that the questionnaire checks would be contrasted with the outcome of a similar, 35-item questionnaire about TTM, described in section 3.7. Measuring the responses of students to the questionnaire was simple (detailed results of measurement will appear in Chapter 5). An average score of all 35 responses was calculated. I compare the results of the CTM questionnaire with that given to TTM students in Chapter 5. As well as the CTM tasks I prepared for SP1, I prepared identical tasks for SP2, which is the second specialized passage used in this study (see Worksheet 3 for use with CTM and SP2 in Appendix 3.5).

To sum up, in section 3.7 I described four TTM linguistic tasks, the learning outcome they examine, and the way they are assessed. I also described a questionnaire about TTM, the outcome it was designed to explore, and the way the students’ responses to it are measured. In section 3.8, I described four CTM linguistic tasks, the learning outcome they examine, and the way they are assessed. I also described a questionnaire about CTM, the outcome it was designed to explore, and the way the students’ responses to it are measured. In section 3.9, I will present the motivational factors I deemed necessary to be explored in my quantitative motivational questionnaire.

3.9 Motivational factors explored in the questionnaire

It is important for a researcher to define the aspect of motivation that is suitable for his or her situation (Dörnyei and Ushioda, 2011). Therefore, the aspects of motivation focused on in this study were the effects of teaching via CTM vs. TTM on students’ motivation and the appeal and effectiveness of the TC itself.

I explored motivation via a quantitative questionnaire; Part I of CTM Questionnaire and Part I of TTM Questionnaire can be found in Appendices 3.3 and 3.4, respectively. I measured it by means of relevant motivational factors prioritized from the ones offered by Williams and Burden's framework of L2 motivation (in Dörnyei and Ushioda 2011: 54) and by Dörnyei's framework (in Dörnyei and Ushioda 2011: 52). From those motivational factors or variables, the most relevant to this study were selected and their corresponding, randomized-in-order questionnaire items were created or adapted from already existing ones. The factors and randomly ordered items (35 in total) were the following:

1. Intrinsic interest of activity (items 31, 17, 8, 12, 33, 7);
2. Perceived value of activity (items 3, 5, 10, 13, 26, 30);
3. Mastery (items 6, 9, 16, 18, 2, 4, 34, 35);
4. Self-concept (items 11, 14, 20, 23, 24, 28, 29, 32);
5. Teacher (items 21, 22, 25);
6. The learning environment (items 15, 19, 27, 1).

The item pool was a synthesis of questions which other researchers (Strachota, 2006; Rivera and Rice 2002: online; Wang, 2003; Wagner, Werner, and Schramm 2005: online; Yoon, 2005) had formed and questions that I had formed.

As already mentioned in section 3.8, I also designed a small, separate, quantitative questionnaire to specifically explore the effect of the Thessaly Corpus (TC) itself as a tool for learning and teaching. Its results would be used to help me make modification decisions, if needed. The motivational factors and randomly ordered items were the following:

1. Intrinsic interest of the TC (items 2, 7, 12);
2. Perceived value of the TC (items 1, 3, 5, 6, 9, 13, 14, 16,18);
3. Mastery of the TC (items 10, 15, 17, 19, 20);

4. Self-concept (items 4, 8, 11).

The wording of the questionnaire in the first two parts was Likert type apart from some personal information asked for in the last part. Many authors point out that the Likert-type questionnaire is one of the most commonly used types in linguistic research (Arnold, McCroskey, and Prichard, 1967; Chang, 1994; Ary, Jacobs, Sorensen, and Walker, 2013; Munshi, 2014; Joshi, Kale, Chandel, and Pal, 2015). In particular, a 6-point Likert scale does not allow neutral responses and usually tends to give the discrimination and reliability values which are higher than, for example, the Likert's scale 5 points (Chomeya, 2010) and usually increases the number of scale points creating opportunities for response sets to arise (Cummins and Gullone, 2000). In section 3.9.1, I will describe the most important criteria I used for the making of my quantitative motivational questionnaire.

3.9.1 The criteria of the questionnaire

The design of the quantitative questionnaire took into account important criteria such as (a) purpose of the questionnaire (b) decision to assign a quantitative or qualitative questionnaire (or mixed) (c) collection of longitudinal or one-off data, (d) layout of the questionnaire, (e) experimental or non-experimental orientation, and (f) practitioner or non-practitioner orientation (Dörnyei and Ushioda 2011: 201-250).

In response to criterion (a), the purpose was to analyze students' motivation towards using CTM and TTM to learn English and its relationship with level of proficiency and specificity and/or difficulty of text, in order to possibly identify ways and ideas of modifying, complementing and enriching the existing teaching units. In response to (b), I constructed a quantitative questionnaire and a qualitative open-ended survey in order to have a thorough and deeper perception of the effect of CTM and TTM on students. To meet criterion (c), collection of data was longitudinal because two groups of students were asked to deal with not only one type of passage so it was not a one-off experiment. In other words, students were asked to come back to the research classroom again to deal with a different text of similar content and difficulty

using two different learning methods. With regard to criterion (d), the layout of my questionnaire was prepared in such as way so as to have basic characteristics, such as anonymity, confidentiality, appropriate density, and format. Concerning criterion (e), my intentions were experimental because I investigated the effects on student motivation by comparing two different instructional approaches. I also assessed the effects of different forms of feedback on the students' motivational disposition. Finally, in relation to criterion (f), I meant it to be a practitioner research because it was conducted in my own university classroom setting.

Overall, by designing the questionnaire and open-ended survey according to the above criteria, I aspired to meet the general aims of this study as outlined at the end of section 1.3 and place the design of the questionnaire in the context of my research questions outlined in section 3.2. In section 3.9.2, I will analyze the specific aims of the questionnaire and the open-ended survey.

3.9.2 The aims of the questionnaire and the open-ended survey

The aims of the quantitative questionnaire were to elicit and collect information on (a) how students of each level reacted to either of the two teaching methods, (b) whether the TC was valid and sufficiently representative and the extent to which students were satisfied with it, (c) what helped them understand the meaning of unknown words in either approach, (d) what level of students found either approach difficult or easy, (e) what kind of unknown words (e.g., general or specialized ones) was easy or difficult to be semantically negotiated through either of the two approaches, and (f) what teaching and learning implications emerged for the future.

The qualitative open-ended survey questions in the final step of the study aimed at eliciting students' (a) personal views concerning the overall experience of being exposed to a different type of teaching method, (b) perceptions of the two different methods, and (c) perceptions regarding the extent to which the two different methods motivated (or demotivated) them to

achieve in the learning sessions (see the five question items in Appendix 3.12). In particular, Question 1 asked about what the students like best about CTM and TTM. Question 2 asked about what they like least about each method. Question 3 asked about the most challenging aspects of each method. Question 4 asked about which method students believe motivates them more to learn and why. Finally, Question 5 asked them to state which method they would recommend to a friend and why. The answers to all five questions were compared and contrasted with the results of the quantitative questionnaire. For example, if the quantitative data showed that CTM resulted in significantly better student performance, but the achievement was not explained by motivation, the qualitative responses could help to explain why that was so. Or, if they performed better in CTM and the motivation data explained their better performance, the qualitative responses could confirm that and therefore 'validate' that in fact it was due to motivation. Or, if there was some agreement between the performance results, the motivation data, and the responses to the open-ended survey, then I would infer that it would be due to a combination of a better teaching approach and motivation.

The overall findings will influence my own (a) suggestions to the university administration concerning the kind of modifications and reforms needed to be made in the university curriculum if it was finally deemed by the authorities that such changes should be made, (b) decisions concerning the kind of alterations, additions, and interventions which could be made in the syllabus or teaching scheme at the department I work for within the context of an overall effort to create an EAP/ESP course which will be attractive to students, and (c) recommendations to other EFL colleagues who work in other Greek and international universities and colleges concerning their teaching practices and methodological decisions. After establishing the criteria and content of the questionnaire and the survey, I defined the data analysis methods. I will describe those data analysis methods in section 3.10.

3.10 Data analysis methods

According to the steps already presented in section 3.2 and in order to address my research questions, half of the student sample was asked to read one specialized passage (SP1) and the other half was asked to read a second specialized passage (SP2) of analogous thematic content and level of difficulty. The performance of students who were exposed to either the CTM or TTM was then measured via four performance tasks (Tasks 1, 2, 3, 4) using the mean of the percentage of correct responses given by students in the four tasks. Students' motivation levels were also assessed via a Likert-type measure (wrongly named Task 5 in the pilot study). The data analysis methods (quantitative and qualitative) are presented in sections 3.10.1 and 3.10.2, respectively.

3.10.1 Quantitative analysis method

The quantitative data was analyzed via SPSS, a statistical software program that is used to conduct basic as well as complex statistical analyses (Green and Salkind, 2008). The reliability of the motivation survey was evaluated by calculating a Cronbach's alpha (Ponterotto and Ruckdeschel, 2007) to ensure the quality of the survey data. Descriptive statistics were calculated for both groups of students based on their performance results and motivation. The mean and standard deviations were computed for each research variable including student motivation and achievement by group given the parametric nature of the research variables (Field, 2009).

The first quantitative research question – whether CTM is more effective than TTM with regard to student performance? – was addressed by conducting a 2 x 2 x 3 factorial Analysis of Variance (ANOVA) procedure in which the three grouping variables were the type of teaching method (2 levels), the type of passage (2 levels) and the student ability level (3 levels), and the dependent variable included student performance on tasks as measured by the overall percent of correct responses (Field, 2009; Maxwell and Delaney, 2004). Such a procedure is performed when including one or more within-subjects factors so that one measures each of one's dependent variables under each combination of one's within-subjects factors.

The second quantitative research question – does student ability level moderate the effect of the CTM on student performance? – was addressed by conducting a 2 x 2 x 3 factorial ANOVA procedure similarly to the first research question. This was done to see if the effect of method type on student performance varied or not across ability levels. Simultaneously, this analysis allowed me to see if student performance differs across ability levels.

The third quantitative research question – does the students' motivation level mediate the effect between method and performance, after controlling for student ability level? – was addressed by conducting a multiple linear regression analysis with the help of the SPSS software. With this kind of analysis, one can include many factors within the independent variables and left out variables (e.g., the levels, in the present study) are usually unlikely to be a problem. Therefore, three linear regression procedures were conducted (Baron and Kenny, 1986): a procedure where motivation (i.e., the mediator) was regressed on method (i.e., the independent variable); a procedure where performance (i.e., the dependent variable) was regressed on method; and a procedure where performance was regressed on method and motivation. According to Baron and Kenny (1986), a variable can be deemed to be a mediator when the following criteria are met:

1. The independent variable (TTM or CTM) significantly predicts the mediating variable (student motivation),
2. the independent variable (TTM or CTM) significantly predicts the dependent variable (student performance),
3. the mediating variable (student motivation) significantly predicts the dependent variable (student performance),
4. the relationship between the independent (TTM or CTM) and dependent variable (student performance) is diminished or is no longer significant when the mediating variable (student motivation) is included in the regression model.

To put it more simply, student motivation becomes a mediator when method (CTM or TTM) correlates highly with student motivation and performance, motivation in its turn correlates highly with performance, and finally when the predictive value of motivation is taken into account in the predictive model,

there is no high correlation between method and performance, which means that motivation mediates this relationship.

In section 3.10.2, I will describe the qualitative data analysis method I utilized for the needs of this study.

3.10.2 Qualitative analysis method

The qualitative research question – which aspects of the two methods motivate or demotivate students and why? – was addressed by reviewing the participants' responses to the open-ended qualitative survey (OES) items, coding the responses, and identifying themes in the responses. The six step process proposed by Creswell (2009) was followed in order to analyze the qualitative data. Step one consisted of organizing and preparing the data for analysis. As the participants were to write out their responses on the survey, there was no need for data transcription. Step two consisted of reading each response in its entirety to get a general sense of the data, and then documenting initial thoughts. In step three, the coding process was initiated, in which I organized the responses into chunks or segments of text. In step four, the coding process was used to provide a description for the themes for further analysis. In the fifth step, the categories and subcategories were presented in tabular form and supporting quotes and narratives were provided. Finally, I interpreted the results by determining the overall meaning of the data. To preserve the inner coherence of the narratives given by the students, I made short memos and notes based on the longer transcripts. The analysis of transcripts was also informed by the six-step analysis process suggested by Radnor (in Busse and Walter 2013: 441), comprising topic ordering, category constructing, reading for content, manually filling in categorized sheets, manually collecting together categorized transcripts, and analyzing and interpreting the data.

In line with Cresswell's (2009) and Radnor's (in Busse and Walter 2013) procedures, the fundamental three-level system that Dörnyei describes

(2007: 260) was also followed. First, the qualitative data was broken up into pieces and assigned conceptual categories, a step known as “open coding.” Then, interrelationships between those categories were identified, a process known as “axial coding” and next those relationships were explained at a higher level of abstraction, a process known as “selective coding.” However, as Dörnyei states, “given the inherently iterative nature of qualitative research it should come as no surprise that the three phases occur recursively.” Kaplan and Maxwell (2005: 42) favor the use of coding by stating that “instead of applying a pre-established set of categories to the data according to explicit, unambiguous rules, coding involves selecting particular segments of data and sorting these into categories that facilitate insight, comparison, and the development of theory.” Tong, Sainsbury, and Craig (2007: 356) 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.” This affected my process of analysis by enabling me to categorize all the responses of my students according to their similarity or dissimilarity and even multiple responses given by a single student to one question.

I also performed a complementary, corpus-style analysis of the qualitative data in order to observe specific reasons and interpret them in depth so as to, for instance, why students were motivated or not motivated by the one teaching method (CTM) or the other (TTM). Small corpora of opinions offered by students in the OES were inserted into the MP2.2 concordancer in order for me to more deeply analyze the reasons why students expressed themselves negatively or positively. This analysis aided in understanding factors and/or elements that play a key role in future suggestions about the teaching syllabus. In order to elicit those elements, I used frequently used and representative parts of speech, such as (a) modifying adverbs, (b) comparative adjectives and (c) nouns. I took a closer look at the immediate (or not always immediate) phraseology before or/and after those parts of speech and drew conclusions about what different levels of students believed regarding their experience with CTM and TTM.

Overall, the guiding principles for that type of analysis in this study were:

(a) frequency of phraseology used by students,
(b) part-of-speech representativeness,
(c) intuition as to what should be included in that type of analysis.

Mair (1996: 69) maintains that the "close scrutiny of individual examples in context constitutes the qualitative aspect of corpus-based linguistics." Within the advantages of qualitative corpus analysis, one can also recognize the easy retrieval of authentic language content under investigation, more in-depth analysis and interpretation of it, and application of the findings into many different research efforts in relevant situations (Hasko 2012: 2). The corpus-style analysis will be described in section 6.7.

After the qualitative data was completely analyzed, the qualitative thematic results from the data analysis were triangulated with the quantitative data in order for me to test the findings of the quantitative model. The triangulation strategy was based on my specific needs and on principles stated in relevant literature sources, such as Dörnyei (2007), who states that the goal of triangulation is to validate one's conclusion by presenting converging results obtained through different methods and enhance the comprehensiveness of data and contextualize the interpretations. According to Mathison (1988: 15-16), potential outcomes expected to emerge from the strategy (in order of importance) were (a) convergence (when data from different sources or collected from different methods agree), (b) inconsistency (the data obtained through triangulation may be inconsistent, not confirming but not contradictory), and (c) contradictory (at times, data are not simply inconsistent but are actually contradictory, leading the researcher to incommensurable propositions. In this study, I used the qualitative findings to determine the extent to which they confirmed and expanded upon the quantitative findings. I also used quotes to provide supporting examples for the themes identified via the analysis process.

Based on sample findings drawn from the pilot study described in Chapter 4, I briefly and non-exhaustively made some general observations and implications with regard to the theoretical background about CTM and TTM

set in Chapter 2. These observations will be described in the next section and may serve as food for thought or action for my main study.

3.11 Observations about CTM and/or TTM drawn from the pilot study

The sample results of the pilot study described in Chapter 4 offer useful observations and implications about which of the two teaching methods helped my pilot students perform better by yielding higher percentages of correct responses, what tasks were found to be easier to students, what method (CTM or TTM) was found to be more suitable for which linguistic task, and which of the two methods was favored by the pilot students in their responses to the quantitative questionnaire and the open-ended survey. This discussion of observations and implications will be done in order to draw useful conclusions for the main study.

A general observation is that beginner students may produce syntactically incorrect but semantically correct sentences. This was not expected because beginners are supposed to be weak in understanding meanings of unknown words correctly. This has implications for the main study and my suggested teaching unit, which I discuss in section 7.4.

To determine which of the two teaching methods helped my pilot students perform better in the linguistic tasks, I performed a rough, manual calculation of how many times either CTM or TTM was more effective than one another in terms of performance across Tasks 1, 2, 3, and 4. By ‘more effective’ I mean higher percentages of correct student responses. This brief calculation revealed that CTM offered higher percentages of correct responses 39 times, whereas TTM offered higher percentages of correct responses 22 times, and they produced equal numbers of correct answers 11 times. This kind of manual calculation is only possible here because there were only 12 students participating in the pilot study. In the main study, where there will be five times as many students, calculation will be automated. Also, Task 1 via CTM yielded higher percentages of correct responses nine times; TTM produced

higher numbers of correct responses six times and they produced equal numbers of correct responses three times. However, in Task 1 with SP2, beginners were found to be more helped by TTM than by CTM although across student ability level the latter one yields better performance results than the former one.

Students generally found Task 2 easier because it was more focused and comprised of the immediate context of the target word. In this task, CTM yielded higher percentages of correct responses 14 times, while TTM produced higher percentages of correct responses three times and they produced equal numbers of correct responses once.

As in Task 2, in Task 3 CTM yielded higher percentages of correct responses 14 times, while TTM gave higher percentages of correct responses three times, and the different teaching methods produced the same number of correct responses once. Despite the low sample of students, it seems that CTM can be more helpful than TTM when students attempt to produce their own written or under other circumstances oral discourse.

Task 4 reveals the slight superiority of TTM over CTM. In this task, TTM yielded higher percentages of correct responses 10 times, while CTM produced higher percentages of correct responses twice and they produced the same number of correct responses six times. However, TTM proved more effective when my beginner level of students performed Task 4 with Specialized Passage 2 (see results in Figure 1, Appendix 4.2). While this may be an aberration due to the small sample of students in the pilot study, it does show that the contrast between dictionaries and concordance lines might not have a clear winner.

The answers to the quantitative questionnaire (named Task 5 in the pilot study but renamed as the Questionnaire Stage in the main study) show generally more favorable responses to CTM. For example, in item 2 which asks students to what extent they agree with the statement, “the learning tasks required critical thinking which made my learning easier,” students considered their learning using CTM as easier than using TTM. In other words, students stated that CTM enabled more critical thinking than TTM which led to easier

learning. However, as the sample of students is too small for one to draw any safe conclusion, I will discuss the results from the Questionnaire Task in the main study in section 5.8.

The open-ended survey, which was the qualitative part of my research, revealed that the students preferred CTM from TTM. This happened especially with the beginners and roughly proves that they were motivated by the use of the software. For example, BLS1 wrote that CTM "makes searching for meaning enjoyable and interesting and looks like a game which does not exhaust the student," despite the fact that before this statement they had already admitted that concordance lines might be difficult and too many.

The pilot study showed that CTM was especially valued by the participants as indicated in their performance scores and responses to both the questionnaire and the survey. The fact that beginners improved their performance using CTM in one of the passages and with three of four tasks and that they explicitly suggested CTM for use as a learning method instead of TTM reveals that they felt CTM fostered their sense of independence. This supports the literature discussed in section 2.4 that argues that corpus-assisted curricula can promote self-directed learning in an effective manner. However, this remains to be seen in the main study with the big sample. This pilot study aids in identifying further learning and teaching implications about developing a corpus-supported methodology. My observations in section 4.6, although not systemic, allow consideration of CTM as a basis for developing more systematic teaching units which will be further investigated in my main study.

Another interesting finding from the pilot study is that a student does not have to be an excellent or good language learner in order to be motivated to learn the meaning of target vocabulary when adopting CTM or when dealing with higher-quality or more difficult texts found in a corpus. This does not mean that beginner level students, for example, cannot be good language learners. If they feel motivated and have more opportunities to practice language via CTM they can learn better. Also if they look for patterns in language and attend to meaning and not only syntax and grammar they become better learners. For skills development purposes, placing emphasis on

comprehension of meaning and production of comprehensible oral or written discourse rather than on accuracy of syntax is acceptable. For performance measurement purposes, as the case is in the present study, both correct meaning and accuracy in syntax are acceptable as defined by ‘wrong’ and ‘correct’ in section 4.6.

The abovementioned finding is very interesting and useful for the main study because the literature, described in section 2.4, has stated that students taught using DDL do not produce better texts simply because such learners are using a corpus, but because DDL learners exhibit various characteristics related to the archetypal proficient learner. Motivational factors may play a role here but this is explored with a big sample of students in my main study. This pilot study also showed that even beginners can guide themselves around the corpus in an adequate way but the most interesting element is that they are motivated in exploring target words, an area of language in which such students are usually unwilling to deal with. Student reluctance is the reason some literature described in section 2.4 expresses concerns about lower proficiency students when using corpora in the classroom. The performance scores of the pilot study beginners as well as their responses to the survey provided some rough indication that concordance lines help weak students more than traditional learning approaches do.

In Chapter 2, it was claimed that if students of any level are properly instructed in operating the concordancing software and understand the dynamics of concordancing tasks, they can be successful when attempting to elicit meanings of target words. The pilot study, to some extent, helped develop some positive findings regarding this issue. This was exhibited in the pilot study training session video in which the pilot students expressed their positive attitude about how the concordancer functions (see attached video to this thesis and its transcript on the attached CD). This observation is useful for the main study because it will show if the number of beginner students who are not positive towards CTM is considerable enough for me to make corpus modifications, method combinations, and suchlike.

The pilot study has also shown that almost all students at all levels managed to handle the authentic texts included in the specific corpus despite the presence of some single difficult concordance lines. This is also despite concerns expressed in some research, discussed in section 2.4, that it might not be practical to use corpus data directly as teaching materials. The main study will help to confirm if students are able to easily manage the authentic texts found in the Thessaly Corpus and will also help to define the extent to which the contents of the Thessaly Corpus need any modification. However, some issues did emerge. In section 4.8, I will present the issues that occurred during the implementation of the pilot study and discuss my response to them. The next section will present ethical issues encountered in my study and the way they were addressed.

3.12 Ethical issues encountered in this study

There were ethical issues encountered in my study, which were addressed in an appropriate manner with adherence to the Research Code of Conduct of the University of Nottingham. My students were all above the age of 17 so a consent form was directly given to them to fill in before taking part in the research (see Figure 3.28).

Figure 3.28: Consent form given to students prior to research

Informed Consent

Project title: Teaching English via corpus concordancing in a Greek university.
Purpose: To improve the existing teaching syllabus by complementing or replacing it with a new teaching methodology.

Please, read the following information and cross out as necessary:

1. I confirm that I have understood the purpose of this study.	YES/ NO
2. I have had the opportunity to ask questions and they have been answered successfully.	YES/NO
3. I understand that my participation in this study is voluntary and that I am free to withdraw from the study at any time and without having to give a reason.	YES/NO
4. I understand that all data are anonymous and that there will not be any connection between the personal information provided and the data.	YES/NO
5. I confirm that I have read and understood the above information and that I agree to participate in this study.	YES/NO

Participant's signature: _____ Date: _____
Participant's Name (in block capitals): _____
Researcher's signature: _____ Date: _____

The venue where my research took place was the computer laboratory of the department of Special Education, University of Thessaly in Greece. Permission to use the lab had previously been granted by the vice-rector of my university. The participants were first-year undergraduates that studied English at the pedagogical departments of Special Education and Primary Education. During participation in the teaching sessions of my research, they were given linguistic tasks to answer, questionnaires to fill in, and an open-ended survey to respond to in written form.

Following one of the fundamental principles of good ethics in research, which is "[g]uarding the privacy and confidentiality of the research participants" (Mertens 2014: 34), I anonymized my students' data by assigning codes such as A1 for the first advanced student, A2 for the second advanced student and so on and so forth. With prior student consent, there was use of first names of 6 pilot students only who responded to the oral interview presented towards the end of the CTM training session video; The reason those six pilot students had no problem that their first names would be heard on the video was that it was regarded as odd and unusual to address them with nicknames or pseudonyms or coded names such as 'beginner student 1', 'advanced student 2', etc.

3.13 Conclusion

This chapter presented the research hypotheses, the methodological steps, and the electronic corpus utilized in my research. It also described the tasks implemented in this research and the quantitative and qualitative data analysis methods employed.

With regard to methodological decisions, in line with my aims at the end of the first chapter and after observing relevant literature presented in the second chapter, I performed my own comparison and contrast between CTM and TTM in my own teaching setting (Action Research) and with a large sample population by having 60 student-subjects partake in four linguistic activities to measure their performance in CTM and TTM by percentage of correct answers on a quantitative basis. I also employed a recognized placement test, i.e. IELTS, to divide students into ability levels and a Word Knowledge Pretest to test students' knowledge of vocabulary prior to performing the tasks. As the placement test divided the students into three ability levels and because there is a shortage of literature evidence on trying CTM with three levels of students (beginner, intermediate, advanced), I investigated if student ability level moderated the effectiveness of method by measuring each ability level's percentage of correct answers on a quantitative basis. The activities used for this measurement were the ones described above and, in more detail, in section 3.7. In addition, because I prepared my own corpus to use as a new methodological tool to try CTM and because I observed a dearth of empirical evidence on student motivation when learning via CTM and TTM, I examined the effect of motivation on students' performance regardless of their ability level. To that end, I gave the students a questionnaire and measured their answers on a quantitative basis.

Furthermore, in the absence of empirical studies on the nature of student motivation (and demotivation) when learning via CTM and TTM, I explored features that motivate (and demotivate) students. This was done by

giving them an open-ended survey and allowing them to respond to questions freely and then closely examining their responses.

Overall, this study was based on the triangulation design variant known as the Validating Quantitative Data Model, according to which I combined the quantitative and qualitative findings to obtain more valid interpretations. Triangulation offered additional sources of information which gave extra insight into this study. It is known that when several sources corroborate the same data, problems and insufficient evidence are reduced and add to the validity of a study. There is also need for increasing confidence in research data, which is a factor that is not always established with one source of data. Thurmond (2001) believes that the most serious drawback of triangulation is the fact that most of the times it requires much time and patience, a problem that I address by choosing multiple sources of data collection in a longitudinal manner. Table 3.5 summarizes the linkage between each research hypothesis (Hyp1, Hyp2, Hyp3), the qualitative research question (QRQ), the variables in this study, the research design, the type of measurement used, and the type of selected data analysis method.

Table 3.5: Linkage between hypotheses and data analysis methods

Source	Independent variable	Mediator/ moderator variable	Control variable	Dependent variable	Design	Measurement	Analysis
Hyp1	Method (manipulated) nominal variable with two levels	None	None	Student performance as measured by percent correct on performance tasks, ratio variable	Experimental	Quantitative: percent correct on performance tasks	Analysis of variance (ANOVA)
Hyp2	Method (manipulated) nominal variable with two levels	Student level (moderator variable) ordinal variable with three levels	None	Student performance as measured by percent correct on performance tasks, ratio variable	Moderation model	Quantitative: percent correct on performance tasks	Analysis of variance (ANOVA)
Hyp3	Method (manipulated) nominal variable with two levels	Student motivation (mediator variable) interval variable	Student level, ordinal variable with 3 levels	Student performance as measured by percent correct on performance tasks, ratio variable	Mediation model	Quantitative: student motivation 6-point Likert scale and percent correct on performance tasks	Multiple regression analysis
QRQ	Not applicable	Not applicable	Not applicable	Student perceptions relating to motivation	Triangulation design: Validating Quantitative Data Model	Open-ended survey items added to the motivation survey	Thematic analysis & corpus style analysis

The next chapter (Chapter 4) presents my pilot study, which is similar to the main study in terms of the research procedures but it employs a small sample population.

CHAPTER 4 Pilot study

4.1 Introduction

This chapter describes the pilot completed in preparation of the main study. My aim was to see whether the proposed methods and techniques in Chapter 3 can be used, how well the research tasks and the questionnaire work in practice, and whether the Thessaly Corpus is suitable. The corpus, tasks, and the questionnaire used in the pilot study were similar or identical to those used in the main study but the sample size of students participating in the pilot study was much smaller than the one in the main study, the data were not formally analyzed and the research questions and hypotheses were not addressed. My pilot study included a total of 12 participants; the group that followed the corpus-teaching method (CTM) and the group that followed the traditional teaching method (TTM) each contained two participants within each academic level (beginner, intermediate, and advanced).

In section 4.2, I will describe targets set and methodological steps taken to implement the pilot study according to methodological decisions made in Chapter 3. In section 4.3, I will describe important observations I made from implementing my pilot study focusing on (a) student performance findings in Tasks 1, 2, 3, and 4 across CTM and TTM, (b) student responses to Task 5, which was a quantitative questionnaire, and (c) student responses to the qualitative Open Ended Survey (OES) questionnaire. In section 4.4, I will present a representative case of a beginner student in terms of (a) their performance in one of the language tasks (Task 3) across TTM and CTM, (b) their responses to the quantitative questionnaire, and (c) their responses to the OES. In section 4.5, I will discuss common attitudes of my pilot students towards the OES by analyzing their responses. In section 4.6, I will present significant learning implications particularly about CTM by making a detailed analysis with real examples of how a beginner pilot student reflected on one of the language tasks (Task 3) via CTM. In section 4.7, I will briefly present some general but useful observations about CTM and TTM based on the analysis in section 4.6 and the teaching and learning implications raised by the literature discussed in Chapter 2. In section 4.8, I will present problems of my pilot study, how I responded to these issues and how their treatment

helped my main study. Finally, in section 4.9 I will describe a brief summary and evaluation of this pilot study, and some useful conclusions drawn from it.

4.2 Pilot study targets and methodology

The aims of the pilot study were to check for the following:

1. Practicalities of the study such as (a) the time that should be allotted for training students, carrying out the tasks, administering the questionnaire and the open-ended survey (b) the usefulness and suitability of the corpus, and (c) the appropriateness of the concordancing program;

2. The instructions of the tasks are easily understood and whether the same instructions be used in the main study. If some instructions do not work well, it would enable me to correct them so that no such problem occurs in the main study;

3. The corpus concordancing training tasks are easy to understand. If the students seem to need more time to complete tasks and more practice to handle the corpus concordancing program, I would allot time and training practice accordingly in the main study;

4. The placement test correctly identifies beginner, intermediate and advanced level students. Although the IELTS test is well recognized, running it in the pilot study would enable me to see how well it works towards that direction;

5. The target words chosen as supposedly unknown ones are sufficient. The pilot study would help me to see if the majority of target words are unknown to my students so that the tasks are performed in a reliable manner. For example, if most of the target words proved to be not unknown, then I would replace them with others in the main study.

6. The quantitative questionnaire items are easily understood. If any of the 35 items should not be understood, then I would have to change their wording in the main study;

7. The qualitative survey questions are easy to understand. If the wording of any of the questions is hard to understand, then I would make it more simple;

8. Practical and methodological problems that might occur so that I may prepare for the main research study. For example, if any of the methods do not work or are too hard to be applied, then I would intervene to prevent a similar problem in the main study.

In section 4.8, I will discuss the extent to which the above were adhered to and the problems that occurred in the pilot study. I will also reflect on the implications it might have for my main study so as to perform it as best as possible. The basic methodological steps I took to implement my pilot study, in line with the steps described in Chapter 3, are the following in order of priority:

According to the methodological steps defined in Chapter 3, first I assigned the students an IELTS reading placement to identify the level they were working at (beginner, intermediate, advanced) and then I assigned them a word knowledge pretest to test whether they knew target words categorized into 'totally unknown' words, 'partially unknown' words, and 'wrongly known' words. Totally unknown words are those students do not know at all; partially unknown words are those students understand when they hear or see in a sentence but not know how to use in their own speaking or writing; and wrongly known words are those whose correct meaning is incorrectly known by students. The word knowledge pretest (Appendix 3.11) identified an average of 37 totally unknown words out of 60, an average of 10 partially unknown words out of 60, and an average of 3 wrongly known words out of 60; overall, the pretest identified 51 unknown and partially unknown words out of 60 and 9 known words (see Table 4.1). This roughly indicates that the majority of set words were totally or partially unknown so this was an advantage to the reliability of the study (namely, whether one could replicate the survey and get comparable results) and the validity of it (namely, whether the construct used really measures what the researcher is

using it to measure). The remaining nine words, which were known to students, was not a significant amount so as to affect the pilot study.

Table 4.1 Results from the word knowledge pretest

Results out of 60 given words					
Student	Number of totally unknown words	Number of partially unknown words	Number of wrongly known words	Total number of unknown, partially unknown, and wrongly known words	Total number of known and produced words
A1	30	18	2	50	10
A2	33	8	3	44	16
A3	26	10	2	38	22
A4	31	8	4	43	17
I1	36	15	2	53	7
I2	27	14	9	50	10
I3	34	12	8	54	6
I4	44	7	3	54	6
L1	55	5	0	60	0
L2	43	4	5	52	8
L3	40	12	2	54	6
L4	43	12	1	56	4
Average	37*	10*	3*	50*	9*

*: decimals ignored

A sample of 12 students was sufficient for me to test the things I wanted to test as described in the above mentioned targets. Due to student interest, I created a lottery to choose the final six students (two beginner, two intermediate and two advanced students), who made up Group 1 (G1), and the final six students (two beginner, two intermediate and two advanced students), who composed Group 2 (G2) according to my methodological design introduced in

section 3.3. After initial training in both teaching methods (CTM and TTM), I assigned them the linguistic tasks with the use of two specialized passages, which are considered to be more difficult than general passages to students (Cohen, Glasman, Rosenbaum-Cohen, Ferrara, and Fine, 1988; Gopen and Swan, 1990), but they are extremely relevant to their field of study. After the linguistic tasks my pilot students were assigned two motivational questionnaires also according to decisions taken in Chapter 3, and finally both groups (G1+G2) were assigned an Open Ended Survey (OES), as outlined in section 3.3.

The implementation of my pilot study tasks, questionnaire, and survey according to the methodological decisions discussed in Chapter 3 offered me useful food for thought and action for my main study. The following section presents fundamental observations and reflections based on the numerical findings of my pilot study.

4.3 Observations and reflections on the pilot study

A summary of the results for the Linguistic Tasks Stage (Tasks 1-4) and the Questionnaire Stage appears in sections 4.3.1, 4.3.2, and 4.3.3, respectively. The pilot data were not formally analyzed in terms of the numerical findings but useful and indicative observations are stated here, based on one sample figure and two sample tables.

4.3.1 The performance tasks 1, 2, 3, 4

A small sample of the statistical results of the pilot study based on the different tasks are presented in Appendix 4.2 (Figure 1 and Table 1). The figure compares the performance profiles of the participants within each group (CTM and TTM) in the first four performance tasks and focuses on only one academic level (beginner). Table 1 in Appendix 4.2 offers a sample of basic descriptive statistics for the first part of the questionnaire which forms Task 5. The pilot study partly helped in determining how the data would be entered for analysis and how the data would be descriptively analyzed in the main study.

A small sample of the SP2 performance profile for the beginners are presented in Figure 1 of Appendix 4.2. The results indicate that the two groups differed to some extent in their performance profiles. The results also indicate that while the TTM group outperformed the CTM group in Task 1, the CTM group outperformed the TTM group in Tasks 2-4. Both groups showed a relative strength in Task 4 and a relative weakness in Task 3.

Besides observations from student performance in Tasks 1-4, it is useful to make some basic observations from the results of the first part of a quantitative questionnaire I assigned my pilot study students during both TTM and CTM sessions (task 5, part 1). This part of the questionnaire included items about tasks 1-4 across CTM and TTM. In section 4.3.2, I will briefly describe some of those basic observations.

4.3.2 The questionnaire (task 5, part 1)

The ratings in Task 5 Part 1 were based on a six-point scale ranging from a low of 1 (strongly disagree) to a high of 6 (strongly agree). A small sample of results of the pilot study based on Task 5 (part 1 of questionnaire) assigned about CTM is presented in Table 1 of Appendix 4.2. The mean rating (M= 4.55) depicts a tendency for the majority of students to prefer CTM. Besides observations from student responses in part 1 of this questionnaire, it is useful to make some basic observations from results of the second part of it. This part of the questionnaire included items about Thessaly Corpus exclusively. In section 4.3.3, I will briefly describe some of those basic observations.

4.3.3 Results of the questionnaire (task 5, part 2)

The ratings were based on a 6-point scale ranging from a low of 1 (strongly disagree) to a high of 6 (strongly agree). The responses to the questionnaire items from Task 5 Part 2 were coded so that higher responses consistently reflected more favorable responses. The participants' responses to all of the items were averaged to compute an overall perception

score. The second part of the questionnaire for Task 5 was only based on the responses of those who received the Corpus Teaching Method (CTM group). As a result, the results presented here reflect the perceptions of those in the CTM group only. A small sample of the results of the pilot study based on Task 5 (Part 2) is presented in Table 2 of Appendix 4.2. The participants' mean ratings for SP1 (M = 5.00) and SP2 (M = 4.55) depict a tendency of students to express their satisfaction with Thessaly Corpus. Apart from observations from the student performance results and their responses to the questionnaire, it is further useful for my main study to discuss particular and important strands of my students' results across teaching methods (CTM and TTM). In section 4.4, I will discuss some of those important and particular strands.

4.4 Discussion of one case of pilot student

In this section I will briefly describe and analyze one case of pilot student: a beginner level student. I particularly focused on their answers to (a) my pilot study Task 3, which was particularly interesting to me since it is a fully productive activity, (b) Task 5, the quantitative questionnaire, and (c) the OES, which was a qualitative questionnaire. The answers to those two tasks and the responses to the questionnaire will indicate differences between TTM and CTM in terms of performance and motivation, respectively. The answers will also provide me with a picture of how students react to different types of specialized passages across CTM and TTM.

The case of beginner level student 1 (BLS1), one of two beginner level students, was chosen in order to analyze how a beginner student performed in (a) Task 3 across CTM and TTM through three types of texts, (b) Task 5 (quantitative questionnaire), and (c) the OES. Table 4.2 shows that BLS1 managed to produce far more sentences with the target vocabulary when following CTM rather than when following TTM. BLS1 particularly produced 4 correct sentences when taught via CTM and only one when taught via TTM with the specialized passage (SP). This shows that this student was four times more productive following the CTM in Task 3. Thus, CTM proved to be more effective for BLS1 than TTM.

Table 4.2: Number of correct sentences across CTM and TTM in Task 3 by BLS1

Task 3 - SP	
CTM sentences	TTM sentences
4	1

In Task 5 (quantitative questionnaire) in one type of text (Specialized Text), BLS1 gave the following responses as shown in Table 4.3. Each one of the preference numbers 6-1 was added up to show their total:

Table 4.3: Likert scale preferences across CTM and TTM in Task 5 by BLS1

Likert Scale	6	5	4	3	2	1
CTM	***24***	5	2	0	1	3
TTM	***12***	12	4	2	2	3

Table 4.3 shows that BLS1 indicated twice as many 6s in CTM whereas in TTM the student indicated only 12 (with 1 being the most negative and 6 being the most positive). Overall, BLS1 showed a preference for CTM over TTM.

In the qualitative open-ended survey (discussed further in section 4.5), BLS1 wrote the following responses in each one of the questions asked, as shown in Table 4.4:

Table 4.4: Responses to open-ended survey by BLS1

Questions	CTM	TTM
1. What did you like best about the CTM and the TTM?	What I liked more about the CTM was the plethora of concordance lines which helped me discover the meaning of unknown words without looking them up in a dictionary – which is a ready-made thing. I also liked the fact that I discovered their meaning by myself something which helped me remember them more easily.	What I liked more about the TTM was that it is not totally impersonal – whereas the CTM is because it is limited only to the student and the PC – and develops further the relationship between the student and the teacher.
2. What did you like least	What I liked least about the CTM was the fact that some concordance lines were repeated many times.	What I liked least about TTM was the fact it was completely isolated from

about the CTM and the TTM?		technology and generally seemed too old-fashioned to me.
3. What were the most challenging aspects of each method?	I could not understand all the concordance lines available (sometimes too many). Sometimes too time-consuming.	The most interestingly challenging aspect of the TTM is to use our own contextualization skills to find meanings of unknown words so the only key to success was to find out the gist of the text.
4. Which method do you believe motivated you more to learn and why?	The CTM undoubtedly motivated me more because it offered me many incentives to find out meanings by myself. I have also realized that the CTM helps me memorize meanings better and I think I will never forget them or at least I remember them more than looking the words up in a dictionary or in one passage.	<No response>
5. Which of the two learning methods would you suggest a friend and why?	I would definitely suggest the CTM because it is a complete method that makes searching for meaning enjoyable and interesting and looks like a game which does not exhaust the student but encourages him/her to look for meanings. At the same time it makes the student autonomous in finding answers.	<No response>

From the scores achieved in Task 3 and the responses given in Task 5 and OES (discussed further in section 4.5), it appears that CTM was more effective in helping BLS1 deal with target vocabulary. Furthermore, the positive responses given in the questionnaire in Task 5 and in the Open Ended Survey about CTM were confirmed by the scores achieved in Task 3, in which better scores were attained when using CTM rather than TTM.

4.5 Discussion of the answers to the open-ended survey (OES)

In this section, I will discuss observations about the responses to the OES questions (shown in Appendix 3.12) focusing on positive or negative comments made by BLS1 and presenting attitudes and/or characteristics. The observations presented below are not systemic but are expected to contribute to my methodology for analyzing similar responses from a much greater sample of students in my main study.

Question 1: What did you like best about CTM and TTM?

The responses about CTM given to the above question by my pilot student reveal a strong sense of satisfaction with the plethora of concordance lines offered which helped them understand further meanings. They talk about “plethora of concordance lines,” “discover the meaning,” “helped me remember.”

The responses about TTM note the effect of the student’s ‘own effort’. BLS1 praises TTM for the opportunity it offers them to discover meanings after receiving initial help by their teacher in learning how to contextualize. However, their positive comments seem to be restrained, including some objection; for example they talk about “teacher help,” which develops relationship between student and teacher but this is not the aim of the lesson.

Question 2: What did you like least about CTM and TTM?

The responses about CTM reveal a sense that “repeated concordance lines” provided BLS1 with more chances to understand meaning. The responses about TTM note that “it was completely isolated from technology” and it was “too old-fashioned.”

Question 3: What were the most challenging aspects of CTM and TTM?

Responses discussing CTM observe that there were too many concordance lines and this was sometimes “time-consuming.” Responses to TTM complain that “using our own contextualization skills” is not an easy task.

Question 4: Which method do you believe motivated you more to learn and why?

BLS1 opined that CTM motivated them more. They support this claim by talking about “more incentives” and by writing that CTM “helped memorize meanings better.” They did not provide any response about TTM.

Question 5: Which one of the two learning methods would you suggest a friend and why?

My student declared that they would suggest CTM rather than TTM. They justify this by writing responses such as “interesting ,” “more enjoyable,” “a complete method.” They would not recommend TTM to other people.

The above tentative analysis of my pilot students’ responses inspired and motivated me to perform a systematic analysis of the OES and a corpus style analysis of their responses in Chapter 6 after implementation of my main study. In section 4.6, I will present some useful learning implications that emerged from the way CTM affected my pilot students’ learning and some general observations about each pilot task that will feed into my main study. I will intentionally leave out TTM in this discussion because TTM has been a familiar method to my students for long. Instead, I decided to concentrate on the newly suggested method in a critical and analytical way.

4.6 Learning implications of CTM for the beginner students

As already mentioned in section 4.4, Task 3 asked my pilot students to produce their own sentences, created by consulting concordance lines found in Thessaly Corpus (TC). To closely observe the way BLS1 reflected on the concordance lines and/or the way the concordance lines functioned, I selected two wrong sentences produced by the student; I define such ‘wrong sentences’ as those which are syntactically and semantically incorrect. I will briefly analyze how BLS1 coped with Task 3 using Worksheet 2 for Specialized Passage 1 via Corpus Teaching Method (Appendix 4.1). To analyze the way in which BLS1 reflected on Task 3 via CTM, I will first present the following wrong sentence they produced.

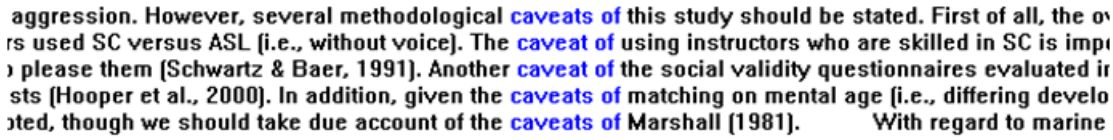
Wrong sentence 1:

“The caveats of the survey are stable.”

To produce wrong sentence 1, marked as incorrect due to the erroneous word “stable”, BLS1 explained that they first typed in the search string *caveat* of* (use of asterisk enabled retrieval

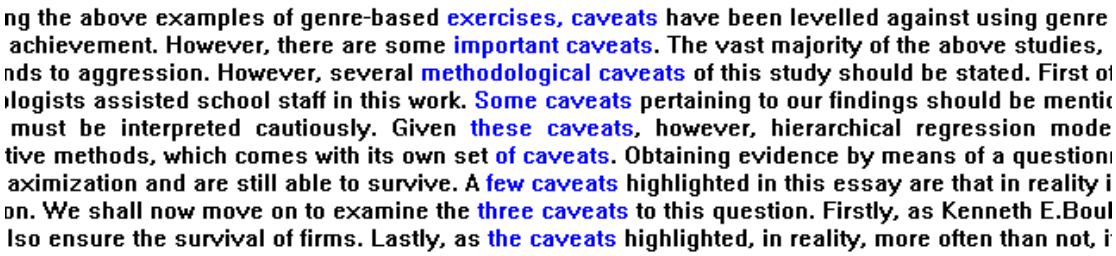
of plural *caveats*, too) and then was based on the following concordance lines found in the TC as presented in Figure 4.1:

Figure 4.1: Five of 5 concordance lines of *caveat* of* retrieved with MP2.2 by BLS1



BLS1 studied the syntactic string 'caveat(s) of something' and it seems they were influenced by the first concordancer which includes the phrase *caveats of this study*. BLS1 understood the syntax of the target word and chose a very good synonym of 'study' which is 'survey'; however, because the student was still not sure if the target word has a positive or negative sense, they explained that they searched further by typing in the search string * *caveats* (see concordance lines in Figure 4.2) and then focusing their search on adjectives that precede the target word to see if the sense of those adjectives was positive or negative.

Figure 4.2: Nine of 45 concordance lines of * *caveats* retrieved with MP2.2 by BLS1

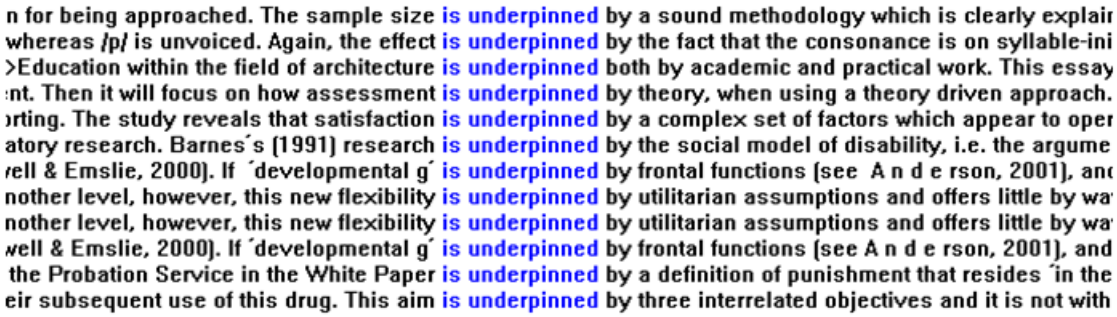


However, because BLS1 found preceding adjectives did not have a negative sense, they obviously misinterpreted the target word as something positive (perhaps similar to 'a result') which is probably why they produced the word "stable", a word which is at least neutral or unclear. The learning implication here is that the immediate preceding context was not helpful to BLS1 in guiding them to understand the negative sense of the target word because the student gave up delving into more contexts and was left with the sense that the target word is something not bad.

Wrong sentence 2:
"This political scandal was underpinned by journalists."

To produce wrong sentence 2, marked as incorrect due to the student's misinterpretation of the word "underpinned", BLS1 explained that they first typed in the search string *is underpinned* (see concordance lines in Figure 4.3).

Figure 4.3: Twelve of 12 concordance lines of *is underpinned* retrieved with MP2.2 by BLS1



However, as BLS1 needed to add more examples and more context, the student typed the search string *was underpinned by* to retrieve the following concordance lines found in the TC as presented in Figure 4.4:

Figure 4.4: Six of 6 concordance lines of was underpinned by retrieved with MP2.2 by BLS1

BLS1 explained that they used the search strings *is underpinned* and *was underpinned by* to see what is underpinned by what or whom. However, the student seems to have been influenced by the word 'underpin' which includes the word 'under' so they thought that a political scandal was hidden under a physical object (in a metaphorical sense) and that some journalists discovered and brought out the truth. It seems that the concordance lines for this target word were too difficult for BLS1 to reach the correct meaning and use it correctly. A closer look at the concordance lines above reveals that the level of vocabulary before and after the target word is higher than expected by a beginner-level student. This might ring a bell as to the level of text difficulty inserted in the TC. However, it was seen in this productive exercise as a whole that this student managed to produce more correct sentences

than incorrect ones so the overall influence from CTM might be regarded as more positive than negative.

4.7 Problems during the pilot study

This section features noteworthy issues, the way they were treated and how their treatment helped my main study. The next sections will present what I learned from problems encountered in each component of the pilot study, such as the corpus, MP2.2 program, word knowledge pretest, tasks, questionnaire items, training, etc., and what decisions I took to solve the problems and prepare the components for the main study.

4.7.1 Concordancing program and corpus

In the corpus concordancing training sessions, instructions about how to enlarge the context around the target word (or KWIC) should have been given before my students began to perform the assigned linguistic tasks. I did not predict that students needed to know this before launching the video-recorded training sessions or even before the students started to perform the tasks. Not knowing how to view more context around the target word caused some anxiety and stress to both my pilot students and me because we had to go back to the default size of characters around the KWIC and change it. The set search parameter of size was 70 characters, something which limited my students' search and understanding as they said. After negotiation among the students about the desired number of characters around the KWIC, they agreed that 90 characters were preferable; all the students set it to 90 (this size appears in the attached video). Generally, the training sessions were helpful and useful in understanding the MP2.2 program so it could be used by the pilot students.

An initial problem with the CTM sessions was that my students did not possess the TC and the MP2.2 program on their laptops. Therefore, I decided to install the corpus and program onto my 12 students' laptops at the start of each CTM session and delete them at the

end of each session. This would be impossible to do in the main study due to the number of PCs or laptops used so the lab technicians suggested that the relevant files would have to be installed onto the desktops of all PCs in the lab – however, they would have to be secured in order that they cannot be copied without permission. This was deemed to be the best possible solution. Generally, apart from some minor technical problems that were resolved on the spot, no serious technical problems emerged in the pilot study because the students used their own laptops which they knew how to use very well.

The TC proved to be more than sufficient in the pilot study. There were no cases in which students did not find any concordance lines to use for the tasks; therefore, the criterion of size set in section 3.4 was met. The criteria of representativeness, balance and register, also set in section 3.4, were met, too, because students encountered all three types of texts involved in the study: Special Education texts, General-Academic ones, and General ones. When, for example, students worked on a specialized passage they looked up target words in the TC and found those words in concordance lines which belonged to the relevant language context to the students' field of study. There were few exceptions that displayed student inability or ineffectiveness because some concordance lines in the TC were too hard for beginners to tackle but the trend seemed to be in favor of corpus-supported learning. This prepared the ground for making use of the TC in the main study; the success of students in using it meant that there was no need to make any modifications to the corpus. As corpus collector I may modify my corpus by adding easier texts and leaving out harder ones, or making other relevant modifications; however, such a decision could be made only after implementation of the main study with a big sample of students which might provide a stronger impetus for doing so.

4.7.2 Word knowledge pretest

When taking the word knowledge pretest (WKP), some students knew more target words than other students, which was logical. Out of 60 target words, nine (15%) were known to my 12 students. Because that percentage was small, I decided to include them in the study

but emphasized the 85% of target words which were definitely unknown to my 12 students. Besides, in my pilot study I concentrated more on trends and less on hard statistics. The decision to include few known target words was also taken in my main study where the sample of students would be five times greater than the sample used in the pilot study (detailed results of the WKP appear in Appendix 3.11). Furthermore, in the WKP, if students thought they knew the word they did not only tick in column C (= *I know this word and can use it in my own speaking and writing*) but also write what they thought was the word's meaning in Greek or in English to enable the teacher to make sure that the meaning they knew was the correct one. I decided to implement this because some students stated they knew some words but when asked orally to explain what the word meant they were mistaken. Thus, the phrase "write the meaning of the word in Greek or in English" was added to the instruction (see WKP in Appendix 3.11) and this modification was also kept for the main study.

4.7.3 Tasks

Some problems cropped up when students performed the tasks. While doing the fill-in-the-gap activity (Task 2), some students yielded to the temptation to go back to Task 1, which they had already completed, to improve their answers there according to the findings of the more focused and thus easier Task 2. Therefore, they were immediately instructed orally not to go back to the first task. This problem was caused in the first place because I gave them a leaflet that included all tasks together, whereas I should have given them Task 2 separately after they had submitted their answers to Task 1. Nevertheless, this experience was helpful because it led me to the decision not to include all tasks together in a leaflet in the main study but to issue one task at a time in separate handouts (see Tasks 1 and 2 in Appendix 3.1 or 3.2).

In the written instruction of Task 2, I added the phrase "in any suitable form" because some target words needed to be converted into a different part of speech or form to make the gapped sentence understandable and accurate (see Task 2 in Appendix 3.1 and/or 3.2). This

caveat was included because I had not foreseen the need for different parts of speech in the first place. Generally, the pilot students had no serious problem with understanding task instructions except for some minor additions that were needed to help the instructions be more explicit. Thus, the pilot study proved helpful to me in realizing necessary additions and/or corrections to the wording of task instructions and the interventions I made prepared better the ground for the main study.

The pilot students had to be assertively instructed, both orally and in writing, not to copy whole concordance lines when completing the productive activity (Task 3) but they could use concordance lines as prompts to create their own sentences. This might be a problem when there is lack of trust between teachers and students; there is always this danger if a teacher is not physically present when they carry out the task. Therefore, while my students were doing Task 3 (sentence construction) I had to make the rounds to see if any one of them yielded to the temptation to exactly copy a concordance line and present it as their own sentence. I also tackled this potential issue during marking my students' papers by crosschecking their produced sentences with the TC to see if any of the produced sentences were exactly the same as any of the concordance lines that included the target words. This problem led me to instruct students in the main study not to copy any concordance lines verbatim and present them as their own work.

In Task 4, I placed few distracters as probable meanings of target words and it was very easy for students to find out meanings by chance; therefore, in Task 4 of the main study I added more distracters to the already existing ones so that there was a total of ten distracters (see Task 4 in Appendix 3.1 and/or 3.2). The number of distracters would be set at ten to elicit the percentage of correct answers and to make it harder for the student to make a lucky guess.

I also faced the serious problem that the amount of work to analyze and mark all tasks across various types of text proved to be too demanding and exacting during the pilot study. I there decided to test only one type of passage in my main study, the specialized text. Using only one type of passage was also logical because of the great number of subjects who would partake in the main study. In that regard, the pilot study proved very helpful because it strongly indicated what an enormous workload would be involved in the main study with 60

students. Thus, the possibility of testing other types of text, too, was left as a separate future attempt.

A slight issue also was that I had assigned too much time for the TTM sessions and a little less time than necessary for the CTM sessions. Each teaching and learning session took no longer than three hours. The TTM sessions took no longer than two hours each, whereas the CTM sessions took up to three hours and few times a little longer because of the use of the software. Considering that in my pilot study 12 students took up more or less three hours for each session and that 60 students would be involved in my main study, I thought that 3 hours is a logical time limit for the main study, too.

4.7.4 Questionnaire

In the pilot study, the quantitative questionnaire was initially named as 'Task 5'; however, it is not actually a language task such as Tasks 1, 2, 3, and 4. Because it was not consistent with the previous language tasks and because it is clearly a typical quantitative questionnaire in which items have to be answered, I renamed it in the text of my main study as 'quantitative questionnaire' or simply 'questionnaire.' To distinguish it from the Linguistic Tasks Stage (1, 2, 3, 4) I renamed this stage as Questionnaire Stage. In the quantitative questionnaire four items were negative (4, 24, 28, and 34). To overcome the issue, the total score of the questionnaire was computed by reverse scoring those negative items (Dörnyei and Taguchi, 2009) and then averaging the responses to all of the items (e.g., range of 1-6).

Some issues occurred when the pilot students answered the questionnaire. Item 5 had to be corrected in the quantitative questionnaire because of a syntax mistake; the phrase "The task was helpful" was replaced with the phrase "The tasks were helpful" because it was not about only one task. I corrected this mistake immediately during the first session by giving my students oral instruction; and before the second session I corrected it in writing (see Part I of the questionnaire in Appendix 3.3 and/or 3.4). I kept this change in the main study. Item 29 had to be rephrased in the quantitative questionnaire because it was not easily understood by most students; I rephrased it orally in the first teaching session and in writing in the

second teaching session. In item 29 the phrase “In the future, I will be able to deal with a new but relevant activity and understand unknown words following the learning approach I was taught here” was replaced by the phrase “In the future, I will be able to deal with a new but relevant activity and understand unknown words following this learning approach” (see Part I of questionnaire in Appendix 3.3 and/or 3.4). Overall, except for some minor rewording of few items that needed to be done, the questionnaire was easily understood so no serious problems were associated with it.

All the above mentioned problems, or mistakes enabled me to prepare my main study in the best possible way. In section 4.9, I will present a brief summary and conclusions drawn from this chapter.

4.8 Conclusion

In this chapter I described the pilot study targets, methodology and data. The chapter discussed one case of a pilot student in order to draw useful, tentative conclusions about the role that CTM and TTM plays in this ability level of students. It also discussed critically the role of the open-ended survey utilized, and explored the learning implications about CTM in the context of the literature discussed in Chapter 2. The chapter finally described and discussed problems and issues that emerged during the pilot research with the aim of improving the main study.

Overall, the pilot study explored the dynamics of CTM and TTM on a small scale and prepared the ground for the development of the main study. The pilot study results and the ensuing teaching and learning implications will be substantiated in my main study. This pilot study showed that it is feasible to proceed to the main study with some modifications during its implementation. Major criteria for determining its feasibility were (a) differences in results shown when CTM and TTM were contrasted, (b) interesting and useful results when TTM vs. CTM are contrasted across student ability level, (c) trends when students were asked about tasks across the two methods, (d) interesting and sometimes new motivation

features expressed by students when asked to express their own opinion about CTM and TTM, and (e) all stages of the pilot study were performed without serious problems that might force me to stop my main study. The next chapter describes the quantitative results of my main study.

CHAPTER 5 Quantitative analysis of student performance and motivation

5.1 Introduction

This chapter presents findings from my quantitative analysis of the main study. The objectives of the quantitative portion of this study were to confirm that the corpus-supported teaching method (CTM) is more efficient than the traditional teaching method (TTM) on student performance, to determine whether student ability moderated the efficacy of the CTM on student performance, and to ascertain whether student motivation mediated the effect of method on student performance.

In line with these objectives, students were grouped into three ability levels: beginner, intermediate, and advanced. Students were then randomly assigned to one of four different groups: in the first group, students were taught using the CTM and then were tested using the first specialized passage (SP1); in the second group, students were taught using the CTM and then were tested using the second specialized passage (SP2); in the third group, students were taught using the TTM and then were tested using the first specialized passage (SP1); in the fourth group, students were taught using the TTM and then were tested using the second specialized passage (SP2). The method used to teach the students and the passage they worked on was then switched i.e. Group 1 was then taught using TTM and tested using SP2. The performance of students was then measured via four performance tasks in the Linguistic Tasks Stage (Tasks 1, 2, 3, 4). Students' motivation levels were also assessed via a Likert-type quantitative questionnaire in the Questionnaire Stage (Part I and II).

In this chapter, the results for overall student performance will first be presented in section 5.2 and the results for the first and second hypothesis will appear in sections 5.3 and 5.4, respectively. I will discuss wider implications of aspects of performance results in section 5.5. The results for motivation will appear in section 5.6 and the results for the third

hypothesis are presented in section 5.7. I will also discuss wider implications of aspects of motivation results in section 5.8.

5.2 Results for overall performance

As described in sections 3.7 and 3.8, all students completed four performance tasks after having been taught using TTM and CTM in order for me to measure that performance and respond to the first research question. As I describe in sections 3.7 and 3.8, the percentage of correct answers per task was measured manually; thereafter, the mean of the four task percentages was used as the performance measure.

The results for student performance are summarized in Table 5.1. The percentage of correct answers when students were taught using CTM ranged from 10% to 77% with a mean percentage being 42%. The percentage of correct answers when students were taught using TTM ranged from 5% to 88%, with the mean percentage being 34%. It appears that the mean performance percentage score of students when they were exposed to the TTM method was lower than the mean percentage score when students were exposed to CTM.

Table 5.1 Results for performance expressed as percentage of correct answers

Type of Method	N	Mean	Range	S.D.
CTM	60	***.42***	.10 to .77	.17
TTM	60	***.34***	.05 to .88	.20

The performance scores (for both passages SP1 and SP2) by ability levels are presented in Table 5.2. These scores address the second research question investigating whether student ability moderated the efficacy of the CTM on student performance. The CTM performance scores for the advanced group ranged from 15% to 74%; the mean percentage was 50% (SD= .16). SD (=Standard Deviation) is a value that shows variability of variables; the higher the SD value, the higher the variability of the variable. The scores for the intermediate ability group ranged from 13% to 77%; the mean percentage was 43% (SD= .17). The scores for the beginner ability group ranged from 10% to 66%; the mean percentage was 32% (SD= .17). The scores reveal that the performance of the advanced students was higher than that of the

intermediate and beginner ones. Also, the intermediate students scored higher than the beginners but lower than the advanced ones, whereas the beginners scored lower than all the other ability level groups. The table also reveals that students of all levels scored better when they used the CTM than when they used the TTM. The difference in mean performance across CTM and TTM is substantial in the case of the advanced students (.50 vs. .38). It is also substantial in the case of the intermediate students (.43 vs. .33) but it is not substantial in the case of the beginners (.32 vs. 30). All ability groups benefit more when utilizing CTM than TTM with the advanced students appearing to benefit more than the other two student groups.

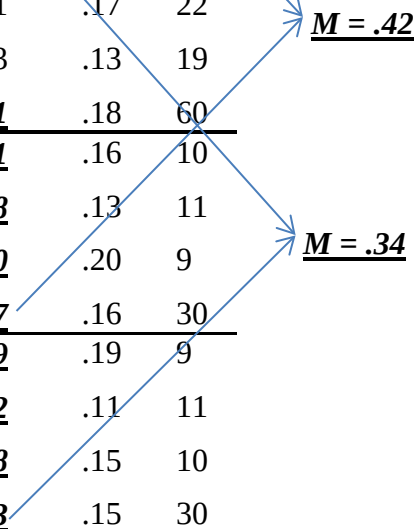
Table 5.2: Mean performance by ability levels

Type of Method	Student level	N	Mean	Range	S.D.
CTM	Advanced	19	***.50***	.15 to .74	.16
	Intermediate	22	***.43***	.13 to .77	.17
	Beginner	19	***.32***	.10 to .66	.17
TTM	Advanced	19	***.38***	.15 to .88	.20
	Intermediate	22	***.33***	.10 to .62	.14
	Beginner	19	***.30***	.05 to .73	.17

This also applies to each type of passage (SP1, SP2) as shown in Table 5.3 where the mean percentage for the advanced group using SP1 was 49% with CTM and 28% with TTM; for the intermediate group was 39% with CTM and 24% with TTM; for the beginner group was 26% with CTM and 20% with TTM. The mean percentage for the advanced group using SP2 was 51% with CTM and 49% with TTM; for the intermediate group was 48% with CTM and 42% with TTM; for the beginner group was 40% with CTM and 38% with TTM. This shows that each ability level of students performed better using SP1 with CTM than with TTM and the difference is substantial, which is also shown by the great difference between the total mean score of CTM and that of TTM (38% vs. 24%). They also performed better using SP2 with CTM; however, that difference is less substantial, which is also shown by the little difference between the total mean score of CTM and that of TTM (47% vs. 43%).

Table 5.3: Mean performance by type of passage, method, and ability level

Type of Passage	Type of Method	Student level	Mean	S.D.	N
SP1	CTM	Advanced	***.49***	.18	9
		Intermediate	***.39***	.19	11
		Beginners	***.26***	.11	10
		Total	***.38***	.18	30
	TTM	Advanced	***.28***	.15	10
		Intermediate	***.24***	.11	11
		Beginners	***.20***	.16	9
		Total	***.24***	.14	30
	Total	Advanced	.38	.19	19
		Intermediate	.31	.17	22
		Beginners	.23	.13	19
		Total	***.31***	.18	60
SP2	CTM	Advanced	***.51***	.16	10
		Intermediate	***.48***	.13	11
		Beginners	***.40***	.20	9
		Total	***.47***	.16	30
	TTM	Advanced	***.49***	.19	9
		Intermediate	***.42***	.11	11
		Beginners	***.38***	.15	10
		Total	***.43***	.15	30
	Total	Advanced	.50	.17	19
		Intermediate	.45	.12	22
		Beginners	.39	.17	19
		Total	***.45***	.16	60



To have a more refined picture of the performance of my students (above 50% of success) across all four linguistic tasks and both specialized passages of this study, I performed simple calculations based on Excel scores that appear in Appendix 5.5. Table 5.4 shows detailed results above 50% of success; hereafter, 50% of success will be referred to as successful completion of more than half the items of each of the linguistic tasks in this study. Along with other findings about performance in this study, the results in Table 5.4 would contribute

to the triangulation performed in Chapter 7. For example, it appears that in three of four linguistic tasks (1, 2, and 3) all my students performed better with CTM than with TTM, whereas in Task 4 the two teaching methods appear to compete with one another. Furthermore, beginner students appear to have better performance with CTM than with TTM when working on SP1, which was a more complicated passage.

Table 5.4: Student performance above 50% of success in Tasks 1, 2, 3, and 4.

	CTM		TTM	
	Advanced		Advanced	
	(9 students or Ss)	(10 students)	(10 students)	(9 students)
	SP1	SP2	SP1	SP2
TASK 1	4 Ss > 50%	7 Ss > 50%	2 Ss > 50%	5 Ss > 50%
TASK 2	9 Ss > 50%	9 Ss > 50%	4 Ss > 50%	8 Ss > 50%
TASK 3	5 Ss > 50%	8 Ss > 50%	4 Ss > 50%	5 Ss > 50%
TASK 4	4 Ss > 50%	0 Ss > 50%	1 Ss > 50%	3 Ss > 50%
	Intermediate		Intermediate	
	(11 students)	(11 students)	(11 students)	(11 students)
	SP1	SP2	SP1	SP2
TASK 1	5 Ss > 50%	6 Ss > 50%	0 Ss > 50%	7 Ss > 50%
TASK 2	6 Ss > 50%	10 Ss > 50%	1 Ss > 50%	9 Ss > 50%
TASK 3	4 Ss > 50%	7 Ss > 50%	1 Ss > 50%	2 Ss > 50%
TASK 4	3 Ss > 50%	2 Ss > 50%	1 Ss > 50%	3 Ss > 50%
	Beginner		Beginner	
	(10 students)	(9 students)	(9 students)	(10 students)
	SP1	SP2	SP1	SP2
TASK 1	2 Ss > 50%	6 Ss > 50%	0 Ss > 50%	8 Ss > 50%
TASK 2	3 Ss > 50%	6 Ss > 50%	0 Ss > 50%	5 Ss > 50%
TASK 3	2 Ss > 50%	4 Ss > 50%	1 Ss > 50%	3 Ss > 50%
TASK 4	0 Ss > 50%	0 Ss > 50%	2 Ss > 50%	1 Ss > 50%

In the next section, I will present the results for my first hypothesis that CTM may be more effective than TTM. The results were drawn by measuring and contrasting the percentages of correct answers in linguistic tasks across CTM and TTM.

5.3 Results for effectiveness of CTM vs. TTM

I hypothesized in section 3.2 that CTM would be more effective than TTM with regard to student performance. The effect used to test this first hypothesis was the main effect of method (see Table 5.5).

Table 5.5: Mixed ANOVA results for performance scores as a function of method, ability level, and type of specialized passage (N = 60)

Source	*F*	*p*
Between subjects		
Ability level	5.40	***.007***
Type of passage	22.69	***.000***
Level x type of passage	.13	.882
Within subjects		
Method	9.05	***.004***
Method x level	1.59	.213
Method x type of passage	3.60	.063
Method x level x type of passage	.98	.384

Table 5.5 shows there is statistically significant effect of the ability level (*p* value = 0.007) and type of passage (*p* value = 0.000) on the performance ("between subjects" part of the table), which means that there are differences in the student performance across ability levels and across type of passage because there are more observations and there is more statistical evidence to claim that there is any difference. One way to understand the importance of multiplicity of observations is by comparing the difference in the number of observations noticed between the effect of type of passage on student performance and the effect of the interaction "method x level x type of passage" on student performance. In the first case, the same number of students (N=60) was tested on each type of passage (SP1, SP2) resulting in

doubling the number of observations (120) because I have 60 observations with SP1 and 60 ones with SP2 despite the initial sample of 60 students. In the second case, I have only about 10 observations (almost 6 times less the initial sample of 60) for each combination in the interaction "method x level x type of passage" considering for example that in each method separately there are 9 or 10 advanced students using SP1 or SP2, respectively.

Based on the *p* value 0.007, it can be seen that there are statistically significant differences on ability level alone. This can be directly seen in Table 5.3 (see arrows) if one simply calculates and compares the total mean performance score of all ability levels (with both passages) across teaching method as shown conclusively in Table 5.1 (CTM = .42 vs. TTM = .34). Similarly, based on the *p* value 0.000, it can be seen that there are statistically significant differences on type of passage alone; namely there were statistically significant differences in performance between the first and second passages tested on all 60 students successively no matter what ability level and method. This can be seen in Table 5.3 if one also compares the total mean performance score of all ability levels for combined teaching method across type of passages (SP1 = .31 vs. SP2 = .45).

When testing for statistical differences in the performance of ability level at each type of passage separately (level x type passage), which means that we look at one type of passage (SP1) and see if there is statistical difference in the level and then we look at the other type of passage (SP2) and see if there is difference in the level, the *p* value 0.882 shows that there is no statistical difference in the performance of ability level on each type of passage. For example, the mean student performance of the advanced students with SP1 indicated no statistically significant difference from the mean student performance of the advanced students with SP2 no matter what teaching method.

As of the within the subjects effects, there is only a statistical significance in method (*p* value = 0.004), which means that there are statistically significant differences in student performance across CTM and TTM. All other two-way interaction effects (level x type of passage, method x level, and method x type of passage) are not statistically significant, which means that (a) the effect of ability level on student performance was not statistically

significant after controlling for the effect of passage type, (b) the effect of method on student performance was not statistically significant after controlling for the effect of ability level, and (c) the effect of method on student performance was not statistically significant after controlling for the effect of passage type. There was also one three-way interaction effect (method x level x type of passage), which is meaningless to interpret because it is statistically insignificant; thus, I do not know if there are no relationships or I simply do not have enough evidence (it is suspected that it might be due to the extremely low number of observations ranging around 10 for each combination). This way it makes sense to interpret only method, ability and passage alone (see table 5.5).

Taking into account that the independent variable of type of method has a statistically significant effect on student performance, meaning that the differences across method are statistically significant, and also the fact that the mean percentage score of students when they were exposed to CTM (M = .42) was indeed significantly higher than the mean percentage score when they were exposed to TTM (M = .34), as shown in section 5.1, I accept the first hypothesis.

5.4 Results for the effect of student ability on student performance

I hypothesized in section 3.2 that student ability would moderate the effect of the CTM on student performance. As before, this hypothesis was tested via a 2 x 2 x 3 mixed-ANOVA procedure (explained in section 3.10). While ability level alone had a statistically significant impact on performance, (p = .007), this effect is not taken into account because it does not address my second hypothesis. Rather, the effect of method on performance after controlling for ability level addresses my second hypothesis because this interaction allows us to see the difference in statistical significance across levels within CTM alone.

The results in Table 5.4 show that the interaction “method x level” did not have statistical significance because the *p* value (.213) is greater than 0.05. This leads me to

believe that the main driver behind the performance is the method (because it has a statistically significant effect on performance) and that ability level does not moderate the effect of method (because the interaction "method x level" is not significant as stated above). Therefore, the second hypothesis was not supported.

5.5 Discussion of aspects of performance results

The main point of this analysis is that the CTM group scored higher than the TTM, as shown in section 5.2 (Tables 5.2 and 5.3). This indicates that CTM is more effective than TTM, which provides an answer to the first hypothesis of this study. My findings about the superiority of CTM over TTM with regard to student performance appear to concur with findings from corpus scholars cited in section 2.4, such as Chang and Sun (2009) whose findings were positive about the effects of DDL on students' performance, Fuentes (2015) who found out that CTM was more effective than TTM in terms of student performance, and Akbari *et al.* (2015) who found that teaching collocations via corpus-based tools improved their students' learning significantly.

In this study, I hypothesized that the ability level of student participants would moderate the effect of CTM on performance. This hypothesis was not supported as evidenced by Table 5.5. While ability level alone had a statistically significant impact on performance, the effect of method on performance did not differ significantly across ability levels. Difference in performance is driven more by the method than by the ability.

The literature on corpus linguistics in ELT casts some doubt on the effectiveness of CTM in the case of beginners: for example, Kayaoglou (2013) is cautious about the ability of beginner students to digest corpora information so he suggests that activities should be adapted according to student needs. Similarly, Gilmore (2009) claims that lower proficiency students have problems decontextualizing data from corpus sentences. However, Gilmore does believe that most students benefitted from the use of a corpus concurring with this

study. Boulton and Tyne (2013), as noted in 2.4, observe that the few studies that do test DDL with lower levels of language proficiency seem to be promising. As I demonstrate in section 5.2, all levels of students benefit from using CTM with the advanced students performing better than the intermediate and beginner ones. The beginners do exhibit better performance in CTM than in TTM but this difference is not substantial and I would need a bigger sample and more observations to prove that the tendency of better performance is in favor of CTM.

Overall, CTM appears to be a better choice than TTM for students of all types of student ability level. From a strictly statistical point of view, the sample of student participants is not enough to determine if and, to what extent, each ability level benefits although there is an admitted tendency towards better performance when students of all types use CTM as shown in section 5.3. The range of student levels (advanced, intermediate, beginners) and the range of linguistic tasks (1, 2, 3, and 4) included in this study helped to observe subtle differences in student performance (above fifty percent) among student ability levels and between the two specialized passages (SP1 and SP2), as will be shown in section 7.2. However, because this study is not based exclusively on statistics and because the sample was not selected only on statistical grounds to explore to what extent each student ability level benefits from CTM (and TTM), alternative measurement was decided (as described in Chapter 3), such as qualitative measurement (thematic analysis and corpus style analysis) as will be described in Chapters 6 and 7. Simply put, the statistical portion of my study is not an end in itself but contributes to the triangulation offered in Chapter 7 and, no matter how big a sample I might have had, it would not have helped me on its own to investigate what happens within each student ability level. That was also the reason there was no need for me to decide on a larger sample; simply because I had enough sample to discern statistical tendencies in student performance and more than enough sample to draw safe conclusions in the qualitative portion of this study. Finally, the superiority of CTM over TTM in terms of student performance proved that the relevance and appropriateness of the corpus collected and utilized was high.

In the next section, I will present the mean motivation ratings for student motivation. The results were drawn from a 6-point Likert scale motivational questionnaire which consisted of two parts: Part I with 35 items aimed at exploring to what extent motivation played a role when students performed tasks across CTM and TTM; and Part II with 20 items aimed at investigating to what extent the Thessaly Corpus (TC) motivated my students and what aspects played a major role in this.

5.6 Results for motivation

The motivation ratings provided by the respondents to the questionnaire about CTM and TTM and to the one about the TC address the third research question whether student motivation mediated the effect of method on student performance. Motivation ratings when students were exposed to CTM ranged from 2.86 to 5.69. As shown in Table 5.6, the mean motivation rating was 4.36. Motivation ratings when students were exposed to TTM ranged from 1.86 to 5.17, with the mean rating being 3.88. Given that the highest possible motivation rating was six and that higher scores indicated greater motivation, it appears that, on average, the sample of students was more motivated to learn English via CTM than via TTM.

Table 5.6: Results for motivation across CTM and TTM

Type of Method	N	Mean	Range	S.D.
CTM	60	***4.36***	2.86 to 5.69	0.71
TTM	60	***3.88***	1.86 to 5.17	0.71

The motivation ratings by teaching method and student level are presented in Table 5.7. The sample is 60 students because this part of the motivational questionnaire (Part I) was filled in by both CTM and TTM groups as explained in section 5.1. In CTM, the ratings for the beginner group ranged from 2.86 to 5.69; the mean rating was 4.31 (SD = 0.71). Motivation ratings for the intermediate ability group ranged from 3.37 to 5.12. The mean rating was 4.26 (SD = 0.44) and was similar to the mean rating of the beginner group. Motivation ratings for the advanced ability group ranged from 3.77 to 5.49; the mean rating was 4.52 (SD = 0.55)

and was higher than the mean ratings of the beginner and intermediate ability groups. This means that the advanced students were more motivated than the other two groups of student ability levels when using CTM. In TTM, the ratings for the beginner group ranged from 2.17 to 5.17; the mean rating was 4.02 (SD = 0.86). Motivation ratings for the intermediate ability group ranged from 1.89 to 4.74; the mean rating was 3.80 (SD = 0.70) and was similar to the mean rating of the beginner group. Motivation ratings for the advanced ability group ranged from 1.86 to 5.17; the mean rating was 3.82 (SD = 0.71) and was similar to the mean rating of the other two student groups. Given that the students' total motivation mean score in Part I was between 4 (= somewhat agree) and 5 (= agree) for CTM and between 3 (= somewhat disagree) and 4 for TTM, it appears all three student groups were more motivated when using CTM than when using TTM.

Table 5.7: Results for motivation by method and student level

Type of Method	Student level	N	Mean	Range	S.D.
CTM	Advanced	19	***4.52***	3.77 to 5.49	0.55
	Intermediate	22	***4.26***	3.37 to 5.12	0.44
	Beginner	19	***4.31***	2.86 to 5.69	0.71
TTM	Advanced	19	***3.82***	1.86 to 5.17	0.71
	Intermediate	22	***3.80***	1.89 to 4.74	0.70
	Beginner	19	***4.02***	2.17 to 5.17	0.86

I also performed simple calculations of how many students of each ability group individually provided an average motivation score higher than 4 (in the 6-point Likert scale questionnaire part 1) across CTM and TTM (results appear in Table 5.8 and relevant Excel ratings appear in Appendix 5.2). According to the calculations, 15 out of 19 advanced students provide an average motivation score higher than 4 (range: 4.11 – 5.31) when using CTM, whereas 7 out of 19 advanced ones provide a score higher than 4 (range: 4.06 – 4.94) when using TTM. Also, 15 out of 19 intermediate students yield an average motivation score higher than 4 (range: 4.14 – 5) when using CTM, whereas 10 out of 22 intermediate ones yield a score higher than 4 (range: 4 – 4.63) when using TTM. Finally, 13 out 19 beginners provide an average motivation score higher than 4 when using CTM, whereas 11 out of 19 beginners have a score higher than 4. A simple addition reveals that 43 out of the 60 students of this

study (72%) yield an average motivation score higher than 4 when using CTM, whereas 28 out of the 60 (46%) yield a score higher than 4 when using TTM. The results shown in Tables 5.7 and 5.8 exhibit a tendency of all three levels of students towards being more motivated by CTM than by TTM.

Table 5.8: Results from calculations of average motivation scores across CTM and TTM

CTM		TTM	
Advanced		Advanced	
(9 students)	(10 students)	(10 students)	(9 students)
SP1	SP2	SP1	SP2
Five 5s > 4 (range: 4.66-5.14)	**Three** 5s > 4 (4.71-5.31)	**Two** 4s > 4 (4.06-4.14)	**Three** 5s >4 (4.54-4.94)
Three 4s > 4 (4.14-4.4)	**Four** 4s > 4 (4.11-4.34)		**Two** 4s > 4 (4.14-4.29)
For both passages: **15 /19** advanced students provided an average motivation score higher than 4 (range: 4.11 – 5.31)		For both passages: **7/19** advanced students provided an average motivation score higher than 4 (range: 4.06-4.94)	
Intermediate		Intermediate	
(11 students)	(11 students)	(11 students)	(11 students)
SP1	SP2	SP1	SP2
One 5 > 4 (5)	**Three** 5s > 4 (4.57-4.89)	**One** 5 > 4 (4.63)	**One** 5 > 4 (4.74)
Five 4s > 4 (4.29-4.43)	**Six** 4s > 4 (4.14-4.49)	**Three** 4s > 4 (4-4.37)	**Five** 4s > 4 (4.17-4.49)
15/19 intermediate > 4 (4.14-5)		**10/22** intermediate > 4 (4-4.63)	
Beginner		Beginner	
(10 students)	(9 students)	(9 students)	(10 students)
SP1	SP2	SP1	SP2
One 6 > 4 (5.63)	**Two** 5s > 4 (4.69-5)	**Two** 5s > 4 (4.66-4.94)	**One** 6 > 4 (5.74)
Seven 5s > 4 (4.51-5.14)	**Three** 4s >4 (4.03-4.34)	**One** 4 > 4 (4.09)	**Six** 5s > 4 (4.51-5.29)
13/19 provided a score higher than 4* * 1 beginner provided an average score > 5.5 (5.63)			**One** 4 > 4 (4.29)
		11/19 provided a score higher than 4* * 1 beginner provided an average score > 5.5 (5.74)	
Overall, **43/60** provided > 4 when using CTM (72% or ¾ of the sample).		Overall, **28/60** provided > 4 when using TTM (lower than 50% of the sample or less than half the sample).	

The motivation ratings for the Thessaly Corpus (TC) across ability levels are featured in Table 5.9. The sample in this case is only 30 students because this part of the motivational questionnaire (Part II) was filled in by the CTM group only after they were tested with one of the two passages. The mean rating for the beginners was 4.40 (SD = 0.72). The mean rating for the intermediate group was 4.07 (SD = 0.70), which is lower than the mean rating for the beginners. The mean rating for the advanced group was 4.71 (SD = 0.53), which is higher than both the other two student ability groups. Given that the students' total motivation mean score in Part II was between 4 (=somewhat agree) and 5 (=agree) on the Likert scale, it appears all types of student ability levels were positively and similarly motivated to use the TC.

Table 5.9: Results for motivation for the Thessaly Corpus across ability levels

	Student level	N	Mean	Range	S.D.
Thessaly Corpus	Advanced	9	***4.71***	3.89 to 5.53	0.53
	Intermediate	11	***4.07***	2.94 to 5.33	0.70
	Beginner	10	***4.40***	2.94 to 5.11	0.72

To have a more refined picture of the perceived the value of TC, I calculated student scores from specific items in questionnaire part II. Table 5.10 shows average Likert scores for the perceived value of the Thessaly Corpus across student ability levels. The scores were drawn from nine items (1, 3, 5, 6, 9, 13, 14, 16, 18) of the motivational factor "perceived value of the TC." My calculations were based on the Likert scale Excel ratings that appear in Appendix 5.6. The scores shown in Table 5.10 would contribute to the triangulation performed in Chapter 7. For example, along with other findings about motivation in this study, it would be useful to know that around 93% of the advanced students, 79% of the intermediate students, and 81% of the beginners, provided ratings between 4-6 in the Likert scale for the perceived value of TC (see detailed scores in Table 5.9).

Table 5.10: Average Likert scale scores of the perceived value of the TC across ability levels

Thessaly Corpus
Advanced level (9 students)
• 8/9 provided an average score between 4-6 in the Likert scale (range: 4.44-5.78) • 7/9 (≈ 78%) provided an average score 4-6 for all the items of this motivational factor • ≈ 70% (56/81 responses were between 5-6) • ≈ 93% (75/81 responses were between 4-6) [81 ensues from 9 students x 9 items]
Intermediate level (11 students)
• 7/11 provided an average score between 4-6 in the Likert scale (range: 4.11-5.67) • 6/11 (≈ 55%) provided an average score 4-6 for all the items of this motivational factor • ≈ 45% (45/99 responses were between 5-6) • ≈ 79% (78/99 responses were between 4-6) [99 ensues from 11 students x 9 items]
Beginner level (10 students)
• 7/10 provided an average score between 4-6 in the Likert scale (range: 4.78-5.67) • 7/10 (70%) provided an average score 4-6 for all the items of this motivational factor • ≈ 70% (63/90 responses were between 5-6) • ≈ 81% (73/90 responses were between 4-6) [90 ensues from 10 students x 9 items]

In section 5.7, I will present the results for the third hypothesis. Those results will address my third research question "To what extent is the effect of method on student performance mediated by student motivation after controlling for student ability level."

5.7 Results for the mediating effect of student motivation on performance

I hypothesized in section 3.2 that students' motivation level would mediate the effect between method and performance, after controlling for student ability level. As explained in section 3.10, to test this hypothesis, a mediation analysis was performed. A mediation model

is one that seeks to identify and explain the mechanism or process that underlies an observed relationship between an independent variable and a dependent variable via the inclusion of a third hypothetical variable, known as a mediator variable (also a mediating variable, intermediary variable, or intervening variable). Rather than a direct causal relationship between the independent variable and the dependent variable, a mediation model proposes that the independent variable influences the (non-observable) mediator variable, which in turn influences the dependent variable. Thus, the mediator variable serves to clarify the nature of the relationship between the independent and dependent variables (MacKinnon: 2008).

According to Baron and Kenny (1986), a variable can be deemed to be a mediator when the following criteria are met: the independent variable significantly predicts the mediating variable, the independent variable significantly predicts the dependent variable, the mediating variable significantly predicts the dependent variable, and the relationship between the independent and dependent variable is diminished or is no longer significant when the mediating variable is included in the regression model. Mediation analysis involves 3 steps:

1) Regress the dependent variable on the independent variable to confirm that the independent variable is a significant predictor of the dependent variable.
2) Regress the mediator on the independent variable to confirm that the independent variable is a significant predictor of the mediator. If the mediator is not associated with the independent variable, then it couldn't possibly mediate anything.
3) Regress the dependent variable on both the mediator and independent variable to confirm that the mediator is a significant predictor of the dependent variable

These three relationships are estimated by the linear regression method (Baron and Kenny, 1986). Linear regression is a wide spread statistical method which models the relationship between the dependent variable and one or more independent variables. It assumes linear relationship between variables, i.e. dependent variables change linearly with the independent variable.

In my analysis, the following three linear regressions were estimated: 1) a regression where motivation (i.e., the mediator) was regressed on method (i.e., the independent variable), 2) a regression where performance (i.e., the dependent variable) was regressed on method, and 3) a regression where performance was regressed on method and motivation.

Table 5.11 summarizes the three regression procedures mentioned above. The first set of results shows the independent variable's effect (method) on the mediator (motivation). The second set of results indicates the independent variable's effect (method) on the dependent variable (performance). The third set of results indicates the independent and mediating variables effects (method and motivation) on the dependent variable (performance).

Table 5.11: Linear regression results for the mediating effect of motivation on the relationship between method and student performance (N=120)

Models	*F*	*p*
Method on motivation		
Beginner vs. intermediate	.79	.377
Beginner vs. advanced	.00	.975
CTM vs. TTM	15.28	***.000***
Method on performance		
Beginner vs. intermediate	3.63	.059
Beginner vs. advanced	11.34	***.001***
CTM vs. TTM	7.66	***.007***
Method, motivation on performance		
Beginner vs. intermediate	5.30	***.023***
Beginner vs. advanced	12.50	***.001***
Motivation	13.66	***.000***
CTM vs. TTM	2.19	.142

The findings in Table 5.11 reveal that method (CTM vs. TTM) significantly predicted motivation ratings (p = .000) because the p value (significance of results) is smaller than 0.05. Therefore, the first criterion for establishing mediation was met (the independent variable significantly predicts the mediating variable), which means that method (CTM for example) did play a significant role in students' motivation. However, after controlling for student level, method did not predict significantly motivation ratings because in the case of "beginner vs. intermediate" comparison the p value is .377 and in the case of "beginner vs.

advanced" comparison the *p* value is .975. This means that method does not significantly predict the difference in motivation between the beginner and intermediate students and between the beginner and advanced students.

In addition, method significantly predicted performance scores, ($p = .007$) because the *p* value (significance of results) is smaller than 0.05. Thus, the second criterion (the independent variable significantly predicts the dependent variable) was fulfilled, which simply means that the method (CTM for example) played a significant role in students' performance. However, after controlling for student level, method partially predicted significantly performance ratings because in the case of "beginner vs. intermediate" comparison the *p* value is .059, whereas in the case of "beginner vs. advanced" comparison the *p* value is .001. This means that method does not significantly predict the difference in performance between the beginner and intermediate students but it does significantly predict the difference in performance between the beginner and advanced students.

Further, motivation ratings significantly predicted performance scores, ($p = .000$) because the *p* value (significance of results) is smaller than 0.05. Thus, the third criterion (the mediating variable significantly predicts the dependent variable) was satisfied, which simply means that student motivation played a significant role in student performance. After controlling for student level, motivation predicted significantly performance ratings because in the case of "beginner vs. intermediate" comparison the p value is .023 and in the case of "beginner vs. advanced" comparison the *p* value is .001. This means that motivation significantly predicts the difference in performance between the beginner and intermediate students and it significantly predicts the difference in performance between the beginner and advanced students.

Finally, when motivation was included in the regression model, method did not have an effect on performance ($p = .142$) because the *p* value (significance of results) is greater than 0.05. Accordingly, the fourth criterion for mediation (the relationship between the independent and dependent variable is diminished or is no longer significant) was met. Since all four criteria for establishing mediation were met (Baron and Kenny, 1986), the third

hypothesis was supported because motivation ratings mediated the effect of method on performance, which simply means that motivation acted as a mediator without considering the student ability level. Also, after controlling for ability level, students' motivation mediated the effect between method and performance.

5.8 Discussion of the results for motivation

In this section, I will discuss aspects of motivation results and, in particular, the relationship between teaching method and student performance in terms of student motivation and how the latter is affected when the ability level factor is involved. I will also discuss the results for motivation for the Thessaly Corpus across ability level.

5.8.1 The mediating role of motivation on performance

As was shown in section 5.6, the results for the motivation questionnaire across CTM/TTM and ability levels indicate that those within the CTM group had higher mean scores when compared to those within the TTM group. Across student ability level, it appeared that the advanced students were more motivated than the other two groups of student ability levels when using CTM. However, on average, all levels of students were more motivated to learn English via CTM than via TTM.

As was shown in section 5.7, method significantly predicted motivation ratings. In other words, either CTM or TTM significantly affected student motivation. The findings also demonstrated that, across student ability level, method did not significantly predict motivation ratings. In other words, method did not significantly predict the difference in motivation across ability level. Also, method significantly predicted performance scores. In other words, either CTM or TTM significantly affected student performance. The findings demonstrated that, after controlling for student level, method predicted significantly performance scores across student ability level. Furthermore, motivation ratings significantly predicted performance scores. In other words, motivation significantly affected performance.

Up to this point, motivation acted as a mediator between method and performance. Finally, when motivation was included in the mediation model, method no longer predicted performance so motivation still continued to act as a mediator between method and performance and in terms of ability level it predicted each other's differences in performance.

It was stated above that motivation significantly affected student performance. This is validated by crosschecking with the preferences indicated by all the students in questionnaire item 8 (Appendix 5.4). In that item, 83% of all students (50 of 60) indicated 4 to 6 (in the 6-point Likert scale) in the statement "I feel that the Thessaly corpus lessons are more effective than the lessons I used to have."

5.8.2 Motivation for the Thessaly Corpus

With regard to the results drawn from Part II of the motivational questionnaire about TC (see section 5.6), student across ability levels were positively and similarly motivated to use the TC. It appears that there is a tendency for all students to become motivated with the TC.

There are different attitudes to the use of specific corpora (c.f. Liu, 2012; Lee and Swales, 2006). The present study chose to combine specialized corpora with general and general-academic ones. The motivation results in section 5.6 showed that the TC compiled in this study was satisfactory because the mean rating across all ability levels is higher than 4 (=somewhat agree). This was shown by the students' indications in questionnaire item 13 (Appendix 5.4) where 80% of my students (48 of 60) across all levels of ability responded positively (4 to 6 in the 6-point Likert scale) to the question "The Thessaly Corpus provided sufficient content" and in item 9 (Appendix 5.4) where 77% of all the students (46 of 60) responded positively to the question "The Thessaly Corpus provided up-to-date content." The successful compilation of the TC was also shown by the students' indications in item 4 (Appendix 5.4) where 85% of all the students (51 of 60) responded positively to the question "In this Thessaly Corpus lesson I feel I learnt more than I used to" with 89% of the advanced students (17 of 19), 86% of the intermediate students (19 of 22), and 79% of the beginner level students (15 of 19).

There is some need, though, for a particular adaptation to the TC concordance output of 70 to 80 characters obtained for use in the activities because of the students' indications in questionnaire item 17 (Appendix 5.4) where 70% of all the students (42 of 60) responded positively (4 to 6 in the 6-point Likert scale) to the question "I had some difficulty in using the Thessaly Corpus due to cut-off sentences in concordance output" with 68% of the advanced students (13 of 19), 73% of the intermediate students (16 of 22), and 68% of the beginner level students (13 of 19). Therefore, it is deemed more useful for future teaching sessions to change the set search parameter of size around the KWIC into more than 80 characters but also no less than 90 characters which was indicated and agreed upon by the students of my pilot study, as described in section 4.8. It is also useful to see the students' preferences in item 20 (Appendix 5.4) where only 32% of all the students (19 of 60) responded positively to the question "I had difficulty in using the Thessaly Corpus due to too many sentences in concordance output," with 37% of the advanced students (7 of 19), 32% of the intermediate students (7 of 22), and only 26% of the beginner level students (5 of 19). Thus, it appears that most students preferred a great variety of and longer concordance lines (more than 80 characters).

Some researchers (c.f. Varley, 2009; Zhang, 2010) explicitly advocate integrating corpus consultation into the language learning syllabuses. My students' preferences in responding to item 3 (Appendix 5.4) indicated that 91% of all the students (54 of 60) felt good about the idea of a new syllabus which will include the TC. In particular, 95% of the advanced students (18 of 19), 82% of the intermediate students (18 of 22), and 95% of the beginner level students (18 of 19) responded positively to that item. Thus, it appears that a vast majority of the student participants are openly in favor of corpus consultation into the syllabus of the present teaching setting.

Zhang (2010) argued that the traditional teaching concept should be altered and that there is urgent need for utilizing a corpus-based approach, especially when teaching unknown vocabulary. My students' preferences in responding to item 5 about vocabulary (Appendix 5.4) indicated that 89% of the advanced students (17 of 19), 91% of the intermediate students (20 of 22), and 68% of the beginner level students (13 of 19) responded

positively to that item. Thus, it appears that more advanced and intermediate students than beginner ones are in favour of corpus consultation when learning vocabulary. This tendency also appears in the performance results of Task 1 where students were assigned to discover meaning of target vocabulary with CTM (results for student performance above fifty percent of success in Tasks 1-4 appear in Appendix 5.7).

Bennett (2010: 19) argues that teachers should "select a corpus appropriate for the register (or compile authentic texts from that register)" so as to meet the student needs for texts that are very relevant to their field of study. My students' indications in item 2 (Appendix 5.4) "The Thessaly Corpus provided content that exactly fitted my needs" showed that 86% of all the students (52 of 60) responded positively (4 to 6 in the 6-point Likert scale) with 89% of the advanced students (17 of 19), 86% of the intermediate students (19 of 22), and 84% of the beginner level students (16 of 19). Therefore, I identify appropriateness of the corpora included in the TC as a factor in the success of it.

The positive results towards the TC also proved the distinct nature of the corpus because it was a specialized corpus. This shows the importance of supplying a corpus with texts that are directly relevant to what students study as is the case in the present study, where students had to work on passages about dyslexia and autism through a corpus that definitely included pertinent content as was shown in section 3.4. This made students of any ability level feel at ease because they were dealing with something that was exactly within their study content and interest and it revealed the great potential of a corpus that was meant and designed to have specialized character. Furthermore, the positive results about motivation across student ability level inevitably brought to light the value of rendering a corpus as specialized as possible and imparted a message to a teacher/corpus designer that it is worth taking the effort to design a specialized corpus derived from the specific domains that the students study.

With regard to the operation of and access to the TC, there were no differences based on student level concerning their preferences and attitudes. Two items were relevant to that. Item 1 "The operation of the Thessaly Corpus was stable" and item 14 "The Thessaly Corpus was easy to access" (Appendix 5.4). My students' indications in item 1 showed that 86% of all the students (52 of 60) responded positively (4 to 6 in the 6-point Likert scale) and in item

14 the results showed that 93% of all my students (56/60) responded positively, too. Thus, it appears that the software was viewed very positively by the vast majority of the students.

It is also important to consider the role of training of students how to utilize corpora so that they become easy to use. Kennedy and Miceli (2001) explain the necessity of training students how to use corpora. They state that training oriented towards acquiring corpus research skills helps students make the most of corpora in language learning (Kennedy and Miceli 2001: 88). My students' preferences in responding to the relevant item 10 (Appendix 5.4) "The Thessaly Corpus was easy to use" indicated that 91% of all students (55 of 60) responded positively to that item. Thus, it appears that the vast majority of students were highly satisfied with the training they had received prior to using the TC for the assigned tasks.

5.9 Conclusion

This chapter discussed the quantitative data analysis of this study. The statistical procedures of Analysis of Variance and Regression Analysis were used in order to draw results about student performance and motivation. In particular, the chapter discussed the following hypotheses outlined in section 3.2: 1) the corpus-supported teaching method (CTM) is more efficient than the traditional teaching method (TTM) in terms of student performance, 2) student ability moderates the efficacy of the CTM on student performance, and 3) student motivation mediates the effect of method on student performance.

Useful conclusions for future teaching and learning can be drawn from the quantitative results. First, the introduction of CTM in the syllabus of university students offers more effective learning opportunities and experiences to them when dealing with specialized unknown vocabulary in texts relevant to their field of study. Second, CTM generally offers better learning experiences to students of all ability levels with some adaptations described in section 5.8. In spite of the fact that the beginners' performance scores were lower than those of the other two ability levels, their motivation ratings were higher compared to the performance scores and usually similar to the motivation ratings of

the other two ability levels. Thus, despite their having a hard time, they do not seem to be discouraged. This finally allows a teacher at university level to introduce CTM to even beginner level students. Third, CTM motivates university students more effectively than the existing traditional learning method; a university teacher may wish to exploit the higher potential of CTM to interest students to enhance the motivational level of his/her classroom. The next chapter explores the extent to which CTM was useful as assessed through the responses to a qualitative survey (Open Ended Survey) assigned to participating students after they had been taught by both CTM and TTM. The next chapter will describe the survey and analyze the responses to it in order to later on compare them with the quantitative results drawn thus far.

CHAPTER 6 Qualitative analysis of data from questionnaire survey

6.1 Introduction

This chapter presents findings from qualitative analysis of the main study after taking into account the methodology decisions described in Chapter 3 and the modifications that occurred after the implementation of the pilot study described in Chapter 4. The objective of the qualitative part of this study was to determine to what extent student motivation informs their preferred teaching style when asked to compare CTM and TTM, and to identify motivational and demotivational factors when using the one method or the other. To fulfil this objective, after completing the Linguistic Tasks Stage and the Questionnaire Stage (4 exercises and 1 Likert-scale questionnaire, respectively), the 60 students of 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 the CTM/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?

According to Dörnyei (2007: 107), open-ended questions (a) allow much wider freedom of expression, and (b) are utilized when the scope of possible answers is not known. In this investigation, the short answer question type was selected because they can be answered compactly with a short response, which is usually more than a phrase and less than a paragraph. Other approaches, such as sentence completion, where an unfinished sentence is presented for the respondents to complete, were not used because this could limit the range of responses.

The students' responses were analyzed via thematic analysis as described in section 3.10. In the current chapter, the categorization process and the subcategories will first be

described in section 6.2. I will then analyze responses within each subcategory with their frequencies in section 6.3 in order to identify what specific reasons students have when responding to questions about CTM and TTM. Thereafter, responses across ability level will be presented in section 6.4. A summary of findings will be provided in section 6.5 and then reflections on important aspects of the responses to the OES will follow in section 6.6. Finally a corpus style approach to the responses to the OES will be provided in section 6.7.

6.2 The categorization process

A top-down and bottom-up approach was used to categorize the qualitative responses as described in section 3.10. 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, which will be presented in the next chapter. At the same time, a bottom-up atomistic approach provided a detailed picture of the responses. Dörnyei (2007: 25-26) comments on the "ideological contrast" between the quantitative and qualitative categorization and/or coding practices meaning that there has always been a confrontation between scholars using quantitative data and scholars using qualitative data although there has recently been the trend to combine the two types of data, which are not actually extremes but rather form a continuum. 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 theory or hypothesis but it is left open and compromising as much as possible in order to include the little niceties of meaning embedded within my students' written data, which are usually hidden all the way through the investigation.

In line with theoretical grounding on coding provided in section 3.10 (Creswell, 2009; Dörnyei, 2007; Tong *et al.* 2007; Busse and Walter, 2013), 60 tables were created, one for each student (see for example Table 4.3 in section 4.4). 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. Why suggest CTM and TTM to a friend.

According to the responses that were spread over each one of the five categories, 59 subcategories of responses were created. This was done by identifying and merging subcategories of responses which were linguistically and semantically synonymous. For example, some students had the following responses to the second question about CTM (what did you like least?):

1. Difficult to understand word meaning;
2. Difficult to read;
3. Content nonsensical superficial;
4. Confused me in understanding.

Since the above responses had similar meanings, they were put into a single subcategory, 'content nonsensical.' While categorizing, I took for granted that no response can 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 the 59 subcategories is presented in Table 6.1.

Table 6.1: List of CTM and TTM subcategories

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

6.3 Responses within each subcategory

In this section, I will present the responses within each subcategory with their frequencies. I will also compare similar subcategories, and focus on subcategories that were prevalent in student responses. This will be done in order to see trends in students' responses across the five categories presented in section 6.2 and draw conclusions for future teaching planning.

6.3.1 Reasons for liking CTM and TTM

As shown in Table 6.2, all 60 students of this study reported that they liked CTM (60 of 60) for various reasons and all of them provided reasons why. In parallel, 47 of 60 students, or 78 percent, provided reasons for also liking TTM; of the rest, 9 of 60 students, or 15 percent, did not provide reasons for not liking TTM and 4 of 60 students, or 7 percent, did not reply at all.

Table 6.2: Number of students who liked CTM or TTM

Categories	Students	Percentage of students
CTM – Liked	60	100%
CTM – Did not like	0	0%
CTM – No response	0	0%
TTM – Liked	47	78%
TTM – Did not like	9	15%
TTM – No response	4	7%

As shown in Table 6.3, there were more responses for CTM than TTM (121 vs. 75) because some students provided more than one positive reasons for CTM and those reasons did not necessarily belong to the same subcategory. In other words, since the data was collected on an open-ended survey basis, one student may have provided more than one reason why they liked or disliked the one method or the other. As a result, multiple subcategories were assigned to one response since the open-ended comments often covered more than one category or subcategory. Because responses could be assigned to multiple subcategories, the responses did not always add up to 60, which was the sample. For example, when students

were asked “what do you like best about CTM” a student answered “I like CTM because it has many sentences and the software is interesting.” So, “many sentences” was put in a relevant subcategory (variety) and “interesting” was put in another relevant subcategory (interesting). The reason why students provided more responses for liking CTM might be that when students like something more than something else, they usually talk about it more because it has stimulated them in many different ways. As O’Sullivan (2007: 279) states, “with corpus consultation the learner becomes the researcher and engages in a process of discovery” so this process of discovery in CTM appears to have stimulated the students more than in TTM as shown in Table 6.3.

Table 6.3: Reasons for liking CTM and TTM

Subcategory	**Frequency**	**Percentage**
Like best about CTM		
Variety of sample sentences	***39***	32
Convenient, comfortable, easy, fast	***27***	22
Effective for understanding	***24***	20
Use of technology	***16***	13
Interesting, enjoyable	***15***	12
Total	***121***	100
Like best about TTM		
Variety of learning strategies	***16***	21
Easy, fast, less tiring, familiar	***15***	20
Effective for understanding	***15***	20
Access to content, focused	13	17
Interesting	***8***	11
Teacher feedback, no need for technology	***6***	8
Consistency	2	3
Total	***75***	100

Note: Percentage is a function of the total within each method

Considering the students’ main reasons for liking CTM and TTM in comparable subcategories, Table 6.3 summarizes the following results:

- There were 39 responses giving “variety of sample sentences” (highlighted in grey) as the main reason for liking CTM; there were only 16 responses giving “variety of learning strategies” as a reason for liking TTM;
- There were 27 responses giving “convenient, easy” (highlighted in yellow) as a main reason for liking CTM; only 15 responses gave “easy” as a reason for liking TTM;
- There were 24 responses giving “effective for understanding” (highlighted in green) as a main reason for liking CTM; only 15 responses gave “effective for understanding” as a reason for liking TTM;
- There were 16 responses giving “use of technology” (highlighted in pink) as a reason for liking CTM; only 6 responses gave “teacher feedback, need for technology” as a reason for liking TTM;
- There were 15 responses giving “interesting” (highlighted in turquoise) as a reason for liking CTM; only 8 responses gave “interesting” as a reason for liking TTM.

The above five results drawn by comparing the highlighted subcategories in Table 6.3 show some preference for CTM over TTM as depicted by the reasons students provide. The students prefer CTM’s multiplicity of sentences in spite of the fact that this is the newest and maybe hardest part. It is also useful for the future teaching implications of this study that, in the eyes of most students, CTM is more effective for understanding than TTM given that the former is brand new and the latter has been common practice at university for decades. Additionally, the arousal of students’ interest together with curiosity about the use of technology as helpful feedback on the part of CTM is also a characteristic that might be taken into account when a university teacher plans a new teaching unit.

6.3.2 Reasons for not liking CTM and TTM

All 60 students gave reasons for not liking either CTM or TTM. The detailed findings in Table 6.4 reveal that fewer students provided reasons for not liking CTM; there were a total

of 89 responses for CTM. Of those who responded, 39 percent indicated that they did not like CTM because it was boring and tiring. The total number of responses about least liked elements of TTM was 100. Of those who responded, 51 percent indicated that they did not like TTM because it was boring and tiring. Although students indicated that they did not like both methods because they were boring and tiring, a greater percentage (51 percent) of students indicated that TTM was boring versus 39 percent for CTM. Students indicated CTM had too many sample sentences (22 percent); however, 17 percent of students stated that they disliked that TTM used very few sample sentences.

Table 6.4: Reasons for not liking CTM and TTM

Subcategory	**Frequency**	**Percentage**
Like least about CTM		
Tiring, boring, confusing	***35***	***39***
Too many sample sentences	***20***	***22***
Content nonsensical	***16***	***18***
Specific tasks (i.e., 2 and 3)	***6***	***7***
Nothing I like least	6	7
Computer delays and unfamiliarity	4	4
Inconsistent	2	2
Total	***89***	100
Like least about TTM		
Tiring, boring, confusing	***51***	***51***
Ineffective for understanding word meanings	***18***	***18***
Too few sample sentences	***17***	***17***
Requires a lot of time	6	6
Lack of help or guidance	5	5
Different process than CTM	2	2
Specific tasks (i.e., 3)	***1***	***1***
Total	***100***	100

Note. Percentage is a function of the total cited within each method.

Considering the students' main reasons for not liking CTM and TTM in comparable subcategories, Table 6.4 indicates the following:

- There were 35 responses giving "Tiring, Boring, and Confusing" as a reason for not liking CTM and 51 giving the same reason for not liking TTM;
- There were 20 responses giving "Too many examples sentences" as a reason for not liking CTM and 17 giving "Too few example sentences" as a reason for not liking TTM;
- There were 16 responses giving "Content nonsensical" as a reason for not liking CTM and 18 giving the same reason for not liking TTM;
- There were 6 responses giving "Specific tasks (Tasks 2 and 3)" as a reason for not liking CTM and 1 giving "Specific tasks (Task 3)" as the same reason for not liking TTM.

The above four comparisons between the highlighted subcategories in Table 6.4 show some similarities in least liked elements between the two methods but more students indicated that they found TTM more boring or confusing. From comparable categories, the category of "content nonsensical" and the category of "specific task" emerge as least liked elements in both methods. Students favored CTM as "effective for understanding", as seen in Table 6.3. The same applies to the "multiplicity of sentences" offered in CTM; only 20 responses disliked it whereas, as Table 6.3 shows, 39 student responses gave it as a reason for liking CTM. Finally, some students declared they did not like Tasks 2 and 3 (especially 3). Task 2 was a fill-in-the-blank task and Task 3 was an open-ended task which asked students to create their own sentences using the words assigned. Tasks similar to Task 3 have always been hard ones for students so their responses are understandable. However, the number of responses for not liking Tasks 2 and/or 3 is too small as Table 6.4 shows.

6.3.3 Most challenging aspects of CTM and TTM

Table 6.5 indicates that both methods had challenging aspects. In particular, all 60 students declared that there were some particularly challenging aspects of CTM. 52 of 60 students, or 87 percent, described challenging aspects of it and 8 of 60 students, or 13 percent, did not describe the challenging aspects of CTM. In parallel, 58 of 60 students, or 97 percent, declared there were challenging aspects of TTM, too. 48 of 60 students, or 80 percent, described challenging aspects of it and 10 of 60 students, or 17 percent, did not describe the challenging aspects of TTM.

Table 6.5: Number of students who found CTM and TTM challenging

Categories	Students	Percentage of students
CTM – Most challenging aspects	60	100%
CTM – Not challenging	8	13%
CTM – Challenging	52	87%
TTM – Most challenging aspects	58	97%
TTM – Not challenging	10	17%
TTM – Challenging	48	80%

Table 6.6 summarizes what students identified as the most challenging aspects of CTM and TTM; while a greater variety of challenging aspects were identified for TTM and a greater number of responses found aspects of TTM challenging, less variety of challenging aspects were identified for CTM and a smaller number of responses found aspects of CTM challenging. In particular, there were 65 responses identifying challenging aspects in CTM. The most challenging aspects of CTM were dealing with multiple sample sentences and word meanings (51 percent of responses), problems with computer searches (28 percent of responses), and the novelty of the method (17 percent of responses). There were 74 responses identifying challenging aspects of TTM. The most challenging aspects of TTM were that it involved text and context-based learning (23 percent of responses), it was difficult (19 percent of responses), its positive aspects (18 percent of responses), although it was unclear how the students considered ‘challenging’ as ‘positive’ or ‘negative’ (I will discuss this ambiguity in section 6.6.3), and finally it contained too few sample sentences (16 percent of responses).

Table 6.6: Challenging aspects of CTM and TTM

Subcategory	Frequency	Percentage
Challenging aspects of CTM		
Multiple sample sentences, word meanings	***33***	***51***
Computer searches and problems	***18***	***28***
New method of learning	***11***	***17***
Specific tasks (i.e., task 3)	2	3
Time to complete task	1	1
Total	***65***	100
Challenging aspects of TTM		
Text and context-based learning	***17***	***23***
Difficult	***14***	***19***
Positive aspects	13	18
Exercises	12	16
Too few sample sentences	***12***	***16***
Time to complete task	3	4
Tiring, uninteresting	2	3
Specific tasks (i.e., task 3)	1	1
Total	***74***	100

Note. Percentage is a function of the total cited within each method.

Considering the students' main reasons pertaining to challenging aspects of CTM and TTM in comparable subcategories, Table 6.6 indicates the following:

- There were 33 responses giving "Multiple sample sentences, word meanings" as a reason for CTM being challenging and 12 responses giving "Too few sample sentences" as a reason for TTM being challenging;
- There were 18 responses giving "Computer searches and problems (difficulty)" as a reason for CTM being challenging and 14 responses giving "Difficult" as a reason for TTM being challenging;
- There were 11 responses giving "New method of learning" as a reason for CTM being challenging and 17 responses giving "Text and context-based learning" as a reason for TTM being challenging.

The above three results comparing the highlighted subcategories in Table 6.6 show that students found the multiplicity of sentences in CTM either thought-provoking or hard to deal with (depending on how the students interpreted the word "challenging" discussed in section 6.6.3). Difficulty due to computer problems was also identified as posing a challenge in CTM (18 responses) with TTM being similarly challenging (14 responses); computer problems were mainly related to difficulties in handling the new software. Finally, a smaller number of responses (11) identified the novelty of CTM as a reason for difficulties; however, TTM's more familiar context-based learning was identified as more challenging (17 responses).

6.3.4 Reasons why CTM and TTM motivated students to learn

Table 6.7 offers a general comparison between CTM and TTM in terms of Question 4 "Which method do you believe motivated you more to learn and why?" The greatest majority of students (57 of 60 or 95 percent) wrote that CTM motivated them more to learn and 55 of them, or 92 percent, provided reasons why; two students of 60 (3 percent) stated that CTM did not motivate them more to learn. In parallel, 20 of 60 students, or 33 percent, reported that TTM motivated them to learn and 8 of them, or 13 percent, provided reason why; twelve students reported they were not motivated by TTM.

Table 6.7: Numbers of students who reported CTM or TTM as motivating

Categories	Students	Percentage of students
CTM – Motivated you more to learn	57	95%
CTM – Did not motivate you more to learn	2	3%
CTM – Did motivate you more and why	55	92%
TTM – Motivated you more to learn	20	33%
TTM – Did not motivate you more to learn	12	20%
TTM – Did motivate you more and why	8	13%

Table 6.8 shows that most students reported that they were motivated more by CTM than TTM. There were 101 total responses for CTM but only 10 total responses for TTM as

shown in Table 6.8. The primary reasons that CTM motivated students to learn more were that it was creative (indicated by 37 percent of students), provided a variety of sample sentences (25 percent of students), and easy (19 percent of students). The primary reason that TTM motivated students to learn was that it allowed for comprehension and reinforcement of word meanings, a reason offered by 30 percent of responses.

Table 6.8: Reasons why CTM and TTM motivated students to learn

Subcategory	**Frequency**	**Percentage**
Reasons why CTM motivated student to learn		
Creative, innovative, modern (technology)	***37***	***37***
Variety of sample sentences	***26***	***25***
Comfortable, easy, enjoyable	***19***	***19***
Comprehension & reinforcement of meaning	***16***	***16***
Faster	3	3
Total	***101***	100
Reasons why TTM motivated student to learn		
Comprehension & reinforcement of meaning	***3***	***30***
Fewer sample sentences	***2***	***20***
Text-based content easier to read	***2***	***20***
Traditional and familiar	***2***	***20***
Interesting	1	10
Total	***10***	100

Note. Percentage is a function of the total cited within each method.

Considering the students' main reasons why CTM motivated them more than TTM in comparable subcategories, Table 6.8 summarizes the following results:

- There were 37 responses giving "Creative, innovative, modern (technology)" as a reason for considering CTM more motivating and two responses giving "Traditional and familiar" as a reason for considering TTM more motivating;
- There were 26 reasons giving "Variety of sample sentences" as a reason for considering CTM more motivating and two responses giving "Fewer sample sentences" as a reason for considering TTM more motivating;

- There were 19 responses giving “Comfortable, easy, enjoyable” as a reason for considering CTM more motivating and two responses giving “Text-based content easier to read” as a reason for considering TTM more motivating;
- There were 16 responses giving “Comprehension and reinforcement of meaning” as a reason for considering CTM more motivating and three responses giving the same reason for considering TTM more motivating.

The above four results comparing the highlighted subcategories in Table 6.8 show that the innovative learning material in CTM proved more motivating than the familiarity of TTM (37 responses vs. two responses, respectively). No matter how difficult or challenging the variety of concordance lines may be in CTM, students consider it more motivating than the immediate or further context in TTM (26 responses vs. two responses, respectively). Students also consider comfortableness of CTM as more motivating than TTM (19 responses vs. two responses, respectively) meaning that they found it easy and enjoyable to work with CTM. Finally, students are more motivated in establishing comprehension and reinforcement of meaning when using CTM rather than when using TTM (16 responses vs. three responses, respectively).

6.3.5 Reasons why students recommend CTM and TTM to others

Table 6.9 offers a general comparison between CTM and TTM in terms of Question 5 “Which one of the two methods would you suggest to a friend and why?” 57 of 60 students, or 95 percent, declared that they would suggest CTM to friends and 55 of them, or 92 percent, provided reasons why; only one of 60 students would not suggest CTM to friends. In parallel, only 13 of 60 students, or 22 percent, declared they would suggest TTM to a friend, too; 9 of them, or 15 percent, provided no reason why and three, or 5 percent, provided reasons why. There was one student who recommended both CTM and TTM.

Table 6.9: Numbers of students who would suggest CTM and TTM to friends

Categories	Students	Percentage of students
CTM – Would suggest to a friend	57	95%
CTM – Would suggest and say why	55	92%
CTM – Would not suggest	1	2%
CTM – Would suggest both CTM and TTM	1	2%
TTM – Would suggest to a friend	13	22%
TTM – Would suggest and say why	3	5%
TTM – Would suggest and not say why	9	15%
TTM – Would suggest both TTM and CTM	1	2%

As shown in Table 6.10, only those who would recommend CTM to a friend indicated the reasons for their choice; those who stated they would recommend TTM to a friend did not provide any reasons for their choice (116 responses in favor of CTM and 0 responses in favor of TTM). The primary reasons that students gave to explain why they would recommend CTM to a friend were its convenience (24%) and its effectiveness (22%).

Table 6.10: Reasons why students recommend CTM to others

Reasons for Recommending CTM	**Frequency**	**Percentage**
Convenient, easy	***28***	***24***
Effective, easy to comprehend	***26***	***22***
Modern (technology)	***20***	***17***
Interesting, attractive, challenging	***18***	***16***
Variety of sample sentences	***13***	***11***
Enjoyable, fun	7	6
Verify results	3	2
Personal experience	1	1
Total	***116***	***100***

Note. Percentage is a function of the total cited within each method.

Table 6.10 offers the following insights when considering the primary reasons why students prefer suggesting CTM to others:

- There were 28 responses giving “Convenient, easy to handle” as a reason for suggesting CTM (and not TTM) to a friend;
- There were 26 responses giving “Effective, easy to comprehend” as a reason for suggesting CTM (and not TTM) to a friend;
- There were 20 responses giving “Modern (technology)” as a reason for suggesting CTM (and not TTM) to a friend;
- There were 18 responses giving “Interesting, attractive, challenging” as a reason for suggesting CTM (and not TTM) to a friend.

The above four results comparing the highlighted subcategories in Table 6.10 show that “convenience in handling” and “effectiveness in comprehending” are the most popular reasons why students would recommend CTM to a friend (28 and 26 responses, respectively). “Modern technology” and “Interesting method” are also popular reasons why CTM is more recommendable than TTM (20 and 18 responses, respectively). Student responses do not identify only one reason for recommending CTM but instead identify four reasons, which shows the diversity of reasons why students would suggest CTM. The next section will provide responses across ability level (with their frequencies) to see how different types of student ability level reflect on CTM and TTM.

6.4 Responses across student ability levels

In this section, I will present the reasons given by the students across ability level (advanced, intermediate, and beginner) between CTM and TTM. This will be done in order to see trends in students’ responses across the five categories presented in section 6.2 and draw useful conclusions for future teaching planning.

6.4.1 Reasons for liking CTM and TTM

As shown in Table 6.11, students in the advanced group liked CTM because of the variety of sample sentences (28 percent) and its convenience (26 percent). Those in the intermediate

group liked CTM because of the variety of sample sentences (36 percent) and because it allowed them to use technology (24 percent). Students who were placed in the beginner group liked CTM because of the variety of sample sentences (33 percent) and its convenience (25 percent). Students who were placed in the advanced ability group liked TTM because it allowed them to access content (29 percent). Those who were placed in the intermediate ability group liked TTM because of the variety of learning strategies (26 percent). Students in the beginner group liked TTM because of its effectiveness (25 percent).

Table 6.11: Reasons for liking CTM and TTM across ability levels

Subcategory	Advanced		Intermed.		Beginners	
	Freq.	%	Freq.	%	Freq.	%
Like best about CTM						
Variety of sample sentences	11	***28***	15	***36***	13	***33***
Convenient, comfortable, easy, fast	10	***26***	7	17	10	***25***
Effective for understanding	8	21	7	17	9	23
Interesting, enjoyable	7	18	3	7	5	13
Use of technology	3	8	10	***24***	3	8
Total	39	100	***42***	100	40	100
Like best about TTM						
Access to content, focused	6	***29***	6	18	1	5
Easy, fast, less tiring, familiar	4	19	8	24	3	15
Effective for understanding	4	19	6	18	5	***25***
Interesting	3	14	2	6	3	15
Variety of learning strategies	3	14	9	***26***	4	20
Teacher feedback, no need for technology	1	5	3	9	2	10
Consistency	0	0	0	0	2	10
Total	21	100	***34***	100	20	100

Note. Percentage is a function of the total within each method and ability level.

6.4.2 Reasons for not liking CTM and TTM

As shown in Table 6.12, regardless of ability level, students indicated that they did not like CTM because it was tiring and boring. Similarly, regardless of ability level, students indicated that they did not like TTM because it was tiring and difficult.

Table 6.12: Reasons for not liking CTM and TTM across ability levels

Subcategory	Advanced		Intermediate		Beginners	
	Freq.	%	Freq.	%	Freq.	%
Like least about CTM						
Tiring, boring, confusing	***12***	38	***16***	50	***13***	52
Too many sample sentences	8	25	8	25	4	16
Content nonsensical	6	19	7	22	3	12
Specific tasks (i.e., 2 and 3)	4	13	1	3	1	4
Computer delays and unfamiliarity	2	6	0	0	2	8
Inconsistent	0	0	0	0	2	8
Total	***32***	100	***32***	100	25	100
Like least about TTM						
Tiring, boring, confusing	***18***	51	***19***	53	***12***	46
Ineffective for understanding word meanings	7	20	7	19	4	15
Too few sample sentences	5	14	3	8	9	4
Requires a lot of time	3	9	2	6	1	4
Lack of help or guidance	2	6	3	8	0	0
Different process than CTM	0	0	2	6	0	0
Total	35	100	***36***	100	26	100

Note. Percentage is a function of the total within each method and ability level.

6.4.3 Most challenging aspects of CTM and TTM

The findings in Table 6.13 reveal that students who were placed in the advanced (63 percent) and intermediate levels (57 percent) reported that their primary challenge with CTM was that it had multiple sentences and word meanings. However, students who were placed in the beginner level indicated that their primary challenge had to do with computer searches and

problems (42 percent). Advanced students found that they were challenged with the text and context-based learning process of TTM (26 percent). Intermediate students described that they were also challenged both by this context-based process (26 percent) and by the TTM exercises (26 percent). Students placed in the beginner level reported that they found TTM challenging because it provided very few sample sentences (26 percent).

Table 6.13: Challenging aspects of CTM and TTM across levels

Subcategory	Advanced		Intermediate		Beginners	
	Freq.	%	Freq.	%	Freq.	%
Challenging aspects of CTM						
Multiple sample sentences, word meanings	15	***63***	13	***57***	5	26
Computer searches and problems	5	21	5	22	8	***42***
New method of learning	2	8	5	22	5	26
Time to complete task	2	8	0	0	1	5
Total	***24***	100	23	100	19	100
Challenging aspects of TTM						
Text and context-based learning	6	***26***	7	***26***	4	17
Difficult	5	22	5	19	4	17
Positive aspects	5	22	5	19	3	13
Exercises	3	13	7	26	2	9
Too few sample sentences	3	13	3	11	6	***26***
Time to complete task	1	4	0	0	2	9
Tiring, uninteresting	0	0	0	0	2	9
Total	23	100	***27***	100	23	100

Note. Percentage is a function of the total within each method and ability level.

6.4.4 Reasons why CTM and TTM motivated students to learn

As shown in Table 6.14, regardless of ability level, students indicated that the primary reason CTM motivated them to learn more was because it was creative and interesting. Students placed in the intermediate and beginner levels reported that another reason CTM motivated

them to learn more was because it provided a variety of sample sentences. Only one student in the advanced ability level gave an explanation of why TTM motivated them to learn, identifying that the comprehension and reinforcement of word meanings involved in TTM was important. Students placed in the intermediate level indicated that the reasons TTM motivated them to learn more was because its text-based content was easier to read (33 percent) and it was traditional and familiar to them (33 percent). Students placed in the beginner level noted that TTM motivated them to learn because it provided them with fewer sample sentences (67 percent).

Table 6.14: Reasons why CTM and TTM motivated students to learn across levels

Subcategory	Advanced		Intermediate		Beginners	
	Freq.	%	Freq.	%	Freq.	%
Reasons why CTM motivated students to learn						
Creative, innovative, modern (technology)	17	***45***	11	***33***	9	***30***
Comfortable, easy, enjoyable	8	21	7	21	4	13
Variety of sample sentences	7	18	10	***30***	9	***30***
Comprehension, reinforcement of meaning	6	16	3	9	7	23
Faster	0	0	2	6	1	3
Total	***38***	100	33	100	30	100
Reasons why TTM motivated students to learn						
Comprehension, reinforcement of meaning	1	***100***	1	17	1	33
Fewer sample sentences	0	0	0	0	2	***67***
Interesting	0	0	1	17	0	0
Text-based content easier to read	0	0	2	***33***	0	0
Traditional and familiar	0	0	2	***33***	0	0
Total	1	100	***6***	100	3	100

Note. Percentage is a function of the total within each method and ability level.

6.4.5 Reasons why students recommend CTM and TTM to others

The findings in Table 6.15 reveal that the primary reasons advanced ability students chose to recommend CTM to a friend were because it was effective (23 percent of responses) and interesting (20 percent of responses). Students in the intermediate ability level indicated that they would recommend CTM because it was modern (29 percent) and convenient (24 percent). Students in the beginner group stated they would recommend CTM to a friend because it was convenient (37 percent) and effective (30 percent).

Table 6.15: Reasons why students would recommend CTM to others across levels

Subcategory	Advanced		Intermediate		Beginners	
	Freq.	%	Freq.	%	Freq.	%
Effective, easy to comprehend	10	***23***	7	17	9	***30***
Interesting, attractive, challenging	9	***20***	5	12	4	13
Variety of sample sentences	7	16	3	7	3	10
Convenient, easy	7	16	10	***24***	11	***37***
Modern (technology)	6	14	12	***29***	2	7
Enjoyable, fun	4	9	3	7	0	0
Verify results	1	2	1	2	1	3
Personal experience	0	0	1	2	0	0
Total	***44***	100	42	100	30	100

Note. Percentage is a function of the total within each method and ability level.

6.5 Summary of findings

A summary of the findings follows, in which comparisons and contrasts between 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 provide to the OES questions. As will be described, the key findings were (a) all the students liked CTM but not all the students 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.

All the students liked CTM but not all the students liked TTM. The primary reason for liking CTM (as identified by 32 percent of responses) was the variety of sample sentences and the primary reason for liking TTM (as identified by 21 percent of responses) was the variety of learning strategies. Students categorized into the intermediate (36 percent) and beginner (33 percent) levels gave this reason more often than the advanced students (28 percent). This finding is important because teachers usually assume that beginners may get confused 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.

The primary reason for not liking both CTM and TTM was boredom. This was the same for all ability levels. Note further that students indicated that they thought that CTM had too many sample sentences (22 percent) and students did not like that TTM had very few sample sentences (17 percent).

The most challenging aspects of CTM identified by students were dealing with multiple sample sentences and word meanings (51 percent) and problems with computer searches (28 percent). It is worth noting that the challenging aspects of CTM appeared to vary across ability levels. As shown in Table 6.13, the majority of students who were categorized into the advanced level (63 percent) and the majority of students placed into the intermediate level (57 percent) reported that their primary challenge with CTM was that it had multiple sentences and word meanings. However, the majority of students who were categorized into the beginner level indicated that their primary challenge had to do with computer searches and problems (42 percent).

The most challenging aspects of TTM were that it involved text and context-based learning (identified by 23 percent of responses) and it was difficult (19 percent of responses). As with the challenges of CTM, the challenging 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 by26 percent of advanced students. Intermediate students were also challenged by this context based process (26 percent of responses), and by the TTM exercises (26 percent of responses). Students categorized into the beginner level were challenged by TTM because it provided very few sample sentences (26 percent of responses).

Ninety-five percent of the student sample believed that CTM motivated them to learn more; students also provided 101 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 into the 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 percent of participants indicated that TTM motivated them to learn more; only10 total responses for TTM were offered. Students placed into the intermediate level indicated that the reasons TTM motivated them to learn more was because its text-based content was easier to read (33 percent of responses) and it was traditional and familiar to them (33 percent of responses). Students classified into the beginner level noted that TTM motivated them to learn because it provided them with fewer sample sentences (67 percent of beginner participants).

Most of the students indicated that they would recommend CTM to a friend. In contrast, only a minority reported that they would recommend TTM to a friend; these students, however, provided only 1 reason (familiarity) for why they would recommend TTM to a friend. Reasons for recommending CTM to a friend appeared to differ across ability levels. As shown in Table 6.15, the primary reasons that advanced ability students elected to recommend CTM to a friend because it was effective (23 percent of responses given by advanced students) and interesting (20 percent of responses given by advanced level respondents). Students in the intermediate ability level indicated that they would recommend CTM because it was modern (29 percent) and convenient (24 percent). Students in the beginner group stated that they would recommend CTM to a friend because it was convenient (37 percent) and effective (30 percent).

6.6 Discussion of the responses to the OES

In this section, I will reflect on important aspects of the responses introduced in sections 6.3 and 6.4 before moving into a corpus style analysis of those responses in section 6.7. In particular, I will highlight aspects of my students' responses to the OES and draw on relevant research (Parise, 2011; John, 2001; Boulton, 2010; Widdowson, 2000; Merhbi, 2014; Kilgarriff, 2009; Borenić, Marinov, and Salluzzo, 2013; Kessler, 2009; Rapti, 2010; Shyamlee and Phil, 2012; Boulton, 2009b; Gavioli and Aston, 2001; Mukherjee and Rohrbach, 2006; Godwin-Jones, 2008; Bennett, 2010; Dörnyei, 2003) in order to explain why those responses were given and to offer an insight into what teaching and learning directions those responses lead us.

6.6.1 Results within each category

The reasons for liking CTM and TTM, as was shown in section 6.3, show that the positive responses for CTM outnumber the positive responses for TTM. Although it was hypothesized by literature in section 2.4 that the great variety of sample concordances might confuse and discourage students, 32 percent of students were attracted to them. Adding another 22 percent of students who indicated that convenience and the like attracted them to CTM, plus another 20 percent of students who appreciated CTM's effectiveness in aiding understanding, the whole picture of CTM is positive in terms of question 1. However, if the great number of concordances poses a problem to some individual students no matter what ability level they belong to, it might be an option for a teacher to limit the amount of concordance lines permitted in order for the students to perform a more controlled search. This possible perspective will be discussed in the next chapter.

Students' reasons for not liking CTM and TTM, also shown in section 6.3, show that both methods have characteristics liked least by the students with more prominent reasons being (a) boredom or fatigue, (b) amount of sentences, and (c) difficult to understand content. However, fatigue and boredom are more prominent in TTM (as indicated by 51 percent of students) than in CTM (as indicated by 39 percent of students), which means that fewer students found CTM boring or fatiguing. The great amount of concordance lines used in CTM that are meant to help in understanding unknown vocabulary seems to be a good reason for not liking CTM, as offered by 22 percent of student responses. Conversely, too few contextual sentences seem to be a problem in TTM, as indicated by 17 percent of students. Furthermore, students appear to be equally demotivated by content which they do not understand in either method (18 percent of students in CTM and 18 percent of students in TTM); these low percentages show that the content of the Thessaly Corpus in CTM on the one hand and the content of the special education passages in TTM on the other hand demotivated many students. A consideration of the traits of CTM and TTM that motivated or demotivated the student-subjects, as shown in section 6.3, will be helpful in designing a suggested exemplary teaching unit presented in the next chapter and in future teaching units in both the present teaching context and others.

As shown in section 6.3, students gave 121 responses in favor of CTM and 89 against it, and only 75 responses in favor of TTM and 100 against it. This implicit contrast reveals that the students tend to prefer CTM rather than TTM; however, they do not totally reject TTM, which is the learning method they have been exposed to and familiar with for many years. Some of the dislike of CTM is due to the great number of concordance lines on the screen and the potential difficulty of the content. Some research, discussed in section 2.4, is concerned about the effectiveness of the display of an array of concordance examples on the computer screen. For example, Parise (2011: online) observed the reactions of his students when dealing with concordance lines on the screen and expressed his concern about the overwhelming number of lines and the "complexity of the examples" that finally led students to ignore them. John (2001: 188) also expresses his concern about the risk a teacher takes when they expose students to many concordance lines. He states that "the problem with large corpora for language learners, especially beginners and intermediate students, is that

concordances of frequent words can easily become too long and meaningless. This can be very demotivating for the beginner student." This suggests that a smaller number of concordance lines should be set no matter what the level of the students is; as shown in section 6.4, a higher percentage of beginner-level students (33 percent) liked the multiplicity of concordance lines in CTM in contrast to 28 percent of advanced students, suggesting that many beginners were motivated by the wide array of concordance lines on the screen.

The challenging aspects of CTM and TTM, as shown in section 6.3, reveal the potential of the concordance software; in providing the students with an array of concordance sentences containing the target vocabulary, 51 percent of students reported that CTM encouraged their interest. This new element of having tens of example sentences before the screen in a few seconds aroused the interest and stirred the thought of the students in their effort to approach the meaning of the target words.

This research appears to contradict previous findings. Boulton (2010) explored motivation and preferences of students by asking them if they would prefer to explore corpora on their own on their computer rather than via the intermediary of paper-based materials. He reports that his students, who dealt with DDL for first time, exhibited "comparatively little enthusiasm" to try hands-on computer-based DDL; 29 of them expressed no opinion, 21 did not agree, and only 21 agreed (Boulton 2010: 14). In contrast, in section 6.3, I found that the majority of students felt motivated by (a) the technology used in CTM, (b) the comfortableness, and (c) the variety of concordance examples (those three factors were spread around 82 responses in favor of CTM), whereas TTM seems to fall behind in preference (because parallel factors were spread around 6 responses in favor of TTM). One factor may lie in corpus training. Boulton (2010) admits that his students had not had relevant DDL experience before; providing a training session may have inclined his students towards computer-based DDL. The present study would not have been feasible if the students had not been trained on how to use the software and interpret the concordance lines. The training session, described in section 3.6, presented the basics of the concordancer and was geared to the demands of the exercises and the students' needs, assigning them similar tasks to those assigned in the main study. Boulton (2010: 17) observes that "it is not

necessarily the more advanced learners who are keenest to get their hands on the computers." This seems to be confirmed in my study because, for example, in section 6.4 (Table 6.12) we saw that for "computer delays and unfamiliarity" the beginners and the intermediate students identified only two and no reasons, respectively, for liking least about CTM. Also in section 6.4 (Table 6.13), we saw that for the challenging aspect "computer searches and problems" in CTM all three types of student ability level identified only 18 of 63 reasons, or 28 percent. Also, in section 6.4 (Table 6.14), we saw that "innovative technology" is the most popular motivational reason identified by all types of student ability level. Furthermore, as was shown by the students' indications in questionnaire item 12 (Appendix 5.4), 95 percent of all the students of this study responded positively (4 to 6 in the 6-point Likert scale) to the question "The Thessaly Corpus was user-friendly" which reveals that all student levels were keen to use the corpus concordancing software. Finally, this is also confirmed in item 18 (Appendix 5.4) where 84 percent of all the students of this study responded positively to the question "The Thessaly Corpus responded to my requests fast enough" which shows that all three types of student ability level appreciated the fastness of the software.

As Widdowson (2000: 7) states, "it is sometimes assumed to be self-evident that real language is bound to be motivating, but this must depend on whether learners can make it real." My study helped the students make language real because they were motivated by the concordance lines and produced their own written sentences in Task 3. Although the productive task was generally hard to cope with, CTM motivated my students more than TTM in that task as was shown in item 33 (Appendix 5.3) of the motivational questionnaire where only 37 percent of all the students enjoyed making sentences in Task 3 with TTM while 47 percent of them enjoyed making sentences with CTM.

Boulton (2010: 14) also mentions "time-wasting" and "unattractive" as two of his students' criticisms of computer-based DDL and gives an impression that comfort and meaning are at risk probably because CTM takes more time in discovering meaning of unknown vocabulary as contrasted with a dictionary and also because CTM might not attract students should concordance lines be unhelpful as contrasted with direct help from teacher. Merhbi (2014) develops this point, declaring that "our students are technology comfy, not

technology savvy" arguing that students and teachers "are not aware and not well prepared to use technology to support their learning." In contrast, this study appears to show that if proper preparation and training is offered, the results can be positive and encouraging when using technology. This is especially the case with a new type of learning software such as the one used here, which is unknown to many Greek universities. Use of this new teaching method also encourages students; as seen in student comments about motivation, the students seem to trust CTM more than TTM as depicted in section 6.3 whereas TTM seems to be less trusted in terms of reinforcement of meaning and interest.

Finally, as discussed in section 6.3, the reasons why students would recommend CTM to others reveal the 'superiority' of CTM over TTM with convenience (28 percent of students), effectiveness in understanding (26 percent of students), and modern technology (20 percent of students) being the leading reasons. In a similar recommendation question given to a sample of 51 students, but not split in ability levels, Borenić *et al.* (2013: 15) received only three responses which stated that the respondent would not recommend the corpus-based method to other students. Because the student-subjects of the present study received some training in the concordance software and because they wanted to get to know something different from the traditional one, they were eager to recommend this new technology to their friends, perhaps hoping that their friends would be similarly motivated. As Hubbard (in Kessler 2009: 82) states, "learner training is important for successful use of instructional technology." My student-subjects received at least three hours of corpus concordancing training, as described in section 3.6, before using CTM and this is one of the reasons they performed the tasks with success. The student-subjects who participated in my pilot CTM training session pointed out the usefulness of such training and expressed their satisfaction at the end of it when they were briefly interviewed (watch attached DVD of CTM training session and/or read its transcript on the attached CD).

6.6.2 Results across ability levels

Further evidence of how the variety of concordance lines played an important role is the fact that in four of the five qualitative questions, the beginner level students appear to be less negative towards the variety of concordance lines presented than even the advanced students. For example, as was shown in section 6.4, beginner students like variety of concordance examples more than the advanced ones (33 percent of beginner students vs. 28 percent of advanced students). In section 6.4, I show that the beginner level students dislike that variety less than every other level of students (16 percent of beginner students vs. 25 percent of advanced students and 25 percent of intermediate students). Beginner students also report finding the variety of concordance lines offered to be much more motivating (30 percent of beginner students indicate that they were motivated by the variety of concordance lines offered vs. 18 percent of advanced students and 30 percent of intermediate students). Finally, a higher percentage of the beginner level students (10 percent) recommend CTM for its variety of concordance examples than the intermediate students (7 percent). Advanced students were most likely to recommend CTM due to the variety of concordance lines available, with 16 percent of respondents indicating that they would do so. In one case, as was discussed in section 6.4, the percentage of beginner-level students describing the 'challenging' aspects of CTM is low (26 percent of beginner level students vs. 57 percent of intermediate students and 63 percent of advanced students) because of the ambiguity in the wording of the question involving the adjective 'challenging', which I will explain in more detail in section 6.6.3.

Kilgarriff (2009: 5) explores the reasons why he thinks "corpora in the classroom" remains a niche interest: he claims that corpus linguistics does not address motivation, which is the most crucial element in a learning task. He also claims that only some "academically-inclined" students are attracted to concordance lines and that it is often the teacher who feels excited and motivated by the method rather than the students. However, as I discuss in section 6.4 (and in section 6.3), the majority of students of all types of ability level believe CTM is generally motivating and promising. Section 6.4 particularly reveals it is not only advanced students who "hunt" to work out vocabulary but that beginner level students prove to be even more motivated to do the same thing (30% of beginner level students and 18% of advanced students are motivated in terms of searching in the variety of concordance

examples). This is also confirmed in item 20 (Appendix 5.4) of the motivational questionnaire where it was unexpectedly inferred that 74 percent of the beginners, 68 percent of the intermediate students, and 63 percent of the advanced ones did not have difficulties with the multiplicity of concordance lines.

As was shown in section 6.4, the reasons for liking CTM and TTM show that the three levels express similar levels of preference towards CTM. Unexpectedly, in some cases, beginner level students take the lead in highlighting the advantages of CTM and expressing their favor of it. This is significant because teachers may fear losing the interest of their beginner students. This concern is shared by corpus linguistics researchers who have discussed the difficulty of low ability students to understand the arrays of concordance lines. In her PhD thesis, Rapti (2010: 121) states (a) difficulty in understanding KWIC format and in abandoning the traditional way of reading, (b) unknown vocabulary, and (c) student dislike for separate arrays of concordance lines as main problems that low ability level students have. In contrast, as I show in 6.4, all the beginner students reported more reasons for liking best about CTM than about TTM (40 vs. 20) and more reasons for liking least about TTM than about CTM (26 vs. 25); the latter difference being insignificant. Also the beginner students of this study reported more challenging aspects of TTM than of CTM (23 vs. 19) and the same ability level of students provided many more reasons why CTM motivated them to learn more than TTM did (30 vs. 3). Also the beginners gave no reasons why they would recommend TTM to others but gave 30 reasons for recommending CTM.

As to the problem of "unknown vocabulary" that Rapti (2010: 121) poses, this study accepts her argument as was shown in item 15 (Appendix 5.4) where 89 percent of the beginner level students indicated they had some difficulty in using the Thessaly Corpus due to unfamiliar vocabulary on concordance lines. This study also accepts Rapti's (2010: 121) argument about the "separate arrays of concordance lines" problem that beginners have as was shown in item 17 (Appendix 5.4) where 68 percent of the beginner level students indicated they had some difficulty in using the Thessaly Corpus due to cut-off sentences in concordance output. However, when the beginner students of my study were asked about what they liked least about CTM they provided only three responses (of 25) that belonged to

the category of ‘content nonsensical’ which shows that the unknown vocabulary was not the least liked feature of CTM. Furthermore, in item 29 (Appendix 5.3), 84 percent of the beginner level students of this study indicated that, in the future, they will be able to deal with a new but relevant activity and understand unknown words following the CTM. Thus, it seems that, although the problem of separate or cut-off arrays of concordance lines is serious and should be addressed, it does not discourage students from considering multiplicity of concordance lines an advantage as was indicated by the beginner students who reported the variety of concordance lines as their first reason for liking CTM (33 percent of the responses) similarly to the other two ability levels (28 percent by the advanced and 36 percent by the intermediate students).

When also asked about what they liked least about CTM, the beginner students provided only four reasons of 25 (16%), fewer than the advanced who gave eight reasons of 32 (25%) and the intermediate ones who gave eight of 32 (25%), too. Furthermore, when the beginners were asked about the challenging aspects of CTM, the wide array of concordance lines did not appear to have been the greatest challenge for them because they only gave five responses of 19 (26%) about multiplicity of concordance lines while the advanced students posed that problem in 15 responses out 24 (63%) and the intermediate ones did in 13 responses of 23 (57%). Finally, when the beginner students were asked to write reasons why the CTM motivated them to learn, they cited ‘variety of concordance lines’ as their primary reason (equal to the ‘creative technology’ reason) providing 9 relevant responses out 30 (30%), whereas the advanced students cited ‘variety of concordance lines’ as second reason and provided 7 of 38 relevant responses (18%) and the intermediate ones cited that reason also as second best and provided 10 of 33 relevant responses (30%).

However, as also shown in section 6.4, according to the reasons given by the students for not liking CTM and TTM, 52 percent of beginner level students declared that CTM can become boring or tiring, probably due to the appearance of too many concordance lines or nonsensical content or computer delays or inconsistency, etc. Similar responses were given by both the other two levels. I suggest that, when a student is somehow ‘forced’ to answer a question such as ‘tell me what you do not like’, it is likely that the first intuitive response is

about the overwhelming array of concordance lines that appears on the PC screen in fragments of seconds without considering the great opportunity of understanding unknown vocabulary only from just a few concordance examples (of tens of them) or by some more in a more patient manner, if time allows. Furthermore, because the majority of responses do not indicate that a wide variety of concordance lines is a huge problem, there is no urgent need for a teacher to lessen the amount of concordance lines but they can do it if they think that it is necessary to some individual students at hand who would seem to have a problem with it no matter what level they are as also mentioned in the previous section. Alternatively, they might start off their CTM lesson with a more limited number of concordance lines and gradually allow for a less limited number as was also shown by the low percentage of my beginner level students (26%) who indicated, in item 20 (Appendix 5.4) that they had some difficulty in using the Thessaly Corpus due to too many sentences in concordance output.

A similar issue issues when students are invited to respond to the first OES question, 'tell me what you like.' This question yields a great number of responses in favor of the amount of concordance examples because it is something new, it is technological, it is different and it might offer hope to beginners for something different and more effective than the more familiar and already tried teaching method. On the influence of new technology on students who learn foreign languages, Shyamlee and Phil (2012: 151) state that the new technologies develop and spread so fast that their attraction and influence in any form is inevitable. This is evident in my study because the respondents to the first OES question 'tell me what you like about CTM' provided 58 of 121 reasons (nearly 50%) which were related to easy use of technology, fastness, and enjoyability (as was shown in items 14, 18, and 12, respectively, in Appendix 5.4)) and when taking a closer look across ability levels, as shown in section 6.4, the beginner students provided 18 out 40 reasons (46%) related to use of technology, fastness, and enjoyability, appearing to be following closely the advanced students who provided 20 out 39 relevant reasons (52%) and the intermediate students who provided 20 out 42 reasons (48%).

The reasons why students would recommend CTM to others vary across ability levels, as shown in 6.4. Beginner level students are most likely to recommend CTM because

of its convenience and effectiveness (identified by 37 percent and 30 percent of beginner students respectively) followed by interest and variety of sentences (identified by 13 percent and 10 percent of beginner students respectively). Godwin-Jones (2008: 13) believes that CTM is not effective for all learners "but for many motivated students it can provide a means for working with language structures through real world use." The present study seems to prove that all levels of students need something to stir their motivation. They were not predisposed to be motivated as Godwin-Jones implies. For example, a beginner level student might have easily been regarded as not motivated before the present study because according to Oxford (in Philip 2006: 12) they do not exhibit the characteristics of the prototypic "good language learner," as stated in section 2.4; however, CTM increased their motivation and made them make better learning decisions. In the beginner students' eyes, CTM appears to be worth recommending for its (a) convenience, (b) effectiveness, (c) interest, and (d) variety of sentences. To put it more simply, if beginner level students found a friend on their way home after the CTM sessions, they would recommend it to them mainly because of its convenience and effectiveness and less because of its interest and its variety of sentences, which they may believe could cause a problem to their friend. However, if intermediate students were found in this position, they would recommend CTM prioritizing its modern status and convenience and then its effectiveness and interest. Finally, advanced students would recommend CTM to a friend stressing its effectiveness and interest and then its convenience and technology.

6.6.3 Important observations of the responses to the OES

The five qualitative questions outlined in 6.1 appeared to be thought-provoking and, for the most part, clear-cut to the students who partook in this study. However, there did appear to be some ambiguity in the interpretation of question three, which asked students to identify the most challenging aspects of CTM and TTM. It seemed that the meaning of the adjective 'challenging' was not easily understood or it was ambiguously understood by the students. A corpus style analysis of the responses including the KWIC *challenging* revealed that most of the students (36 of 60) regarded it as having a negative sense of something that is 'difficult to

grasp while some of them (13 of 60) understood it as having a positive sense of something which is ‘difficult but encouraging interest and thought’ and the rest of them (11 of 60) did not comment on it at all (see all concordance lines of KWIC *challenging* on the attached CD). The students attempted to clarify the meaning of this adjective but it was hard for me to give a clear and precise response in English and, even when Greek was used, they still were left with the dilemma of how to treat it in the questionnaire. A different adjective should have been chosen in the first place to avoid doubt. However, it was too late at the time to change the wording of the specific question so it was kept and included as one of the caveats of this study.

The variety of concordance lines offered in the CTM was among the traits less liked by students; thus, recommending CTM for other reasons, as shown in sections 6.3 and 6.4, sounds rational. Section 6.3 (Table 6.6) revealed either (a) an agreement, if the students understood the word ‘challenging’ as ‘difficult to grasp’, or (b) a discrepancy, if they understood it as ‘difficult but encouraging interest and thought’ because the variety of concordance lines in section 6.4 does not seem to be a popular reason for recommending CTM (see for instance Table 6.15). The corpus style analysis of the KWIC *challenging*, as described previously, revealed partial agreement with the above mentioned findings. As was shown in section 6.3 (Table 6.8), there is no direct agreement between frequencies for reasons why CTM motivated students and why they would recommend CTM in section 6.4 (Table 6.15) but the reasons given in both tables are similar to one another. Another example is in section 6.3 (Table 6.8) in which students prioritize innovation and technology while in section 6.4 (Table 6.15) students prioritize convenience, which are interconnected because technology has come to make teaching and learning more convenient.

An objection might be raised at this point saying that students have not prioritized effectiveness and variety of sentences in order to make their recommendation because those two features could be considered by teachers more important in a new learning method. To put it simply, teachers usually look deeper when testing a new teaching and learning method by investigating its effectiveness in learning and not so much other external features such as technological comfort and enjoyment. However, it is natural for the students to prioritize

convenience and interesting technology because this is the first feeling a student has after using something like that for the first time. In other words, they use their intuition to acknowledge that the variety of sentences and the effectiveness are not the first elements that will interest their friends in the recommended method (CTM). This is the same intuition that CLT teachers have about CTM sometimes: that it might not become appealing simply because, as Bennett (2010: 3) says, "[c]orpus linguistics is not able to explain why something is the way it is, only tell us what is. To find out why, we, as users of language, use our intuition." However, CTM teachers are teachers and have been using corpora in teaching for a long time; in contrast, the students of this study have just been acquainted with corpora and are not yet expert users of corpora and the CTM. I argue that this is why they stress the characteristics they stress when asked to recommend.

From a psycholinguistic viewpoint, the reason why beginner level students recommended CTM to their friends is that they felt that convenience and effectiveness apply in CTM and would readily attract their friends when talking to them about that new experience. They placed the multiplicity of concordance sentences offered in CTM much lower in importance because they thought that talking to somebody about it would not be so attractive because it is unknown and sounds complex. They also feared that when their friends are faced with multiple concordance sentences they might feel anxious, in the beginning, and might reject their recommendation. In other words, they would never recommend something by emphasizing its weak spots but they would promote or draw attention to the strong spots of that. There is evidence for this in section 6.3 (Table 6.10) where students of all ability levels recommended CTM to others primarily for its convenience (28 reasons), effectiveness for understanding (26 reasons), modernity (20), and interest (18) and minimally for its variety of sample sentences (13). There is also evidence for that across ability levels in section 6.4 (Table 6.15) where, for example, the beginner students provide 30 reasons why they would recommend CTM of which 11 are about its convenience, 9 about effectiveness, 4 about interest, and 2 about its modernity, but only 3 reasons are about the variety of concordance lines.

The students of this study indirectly express their worry that CTM might become tiring without entirely rejecting it, as shown in the rest of the qualitative questions. Such a reaction might be natural because this is the first time they have used this learning method and as Boulton (2009b: 99) says "it certainly requires time and effort, and a little perseverance, but more importantly a willingness to experiment with hands-on concordancing oneself." The same thing happens in TTM as was shown in section 6.4. The students' first response is "tiring," perhaps because it is something they have tried many times before without having worked and therefore made them become frustrated when trying to elicit meaning of unknown vocabulary. Since the student-subjects openly and readily declare what they do not like about each method obviously because they want them to be improved or because they want to be honest research participants, the teacher gains a real picture of what students feel or what motivates them or not and therefore the teacher can adapt their future teaching decisions accordingly.

The psycholinguistic findings of this study agree with Balunda (2009) who states that corpus concordancing impels students to obtain more information about target words than they would be motivated to when investigating words by themselves (see discussion in section 2.4.3). Similar findings about high student motivation, good attitude, and positive reactions towards difficult corpus concordancing tasks were reported by Chang and Kuo (2011), Leńko-Szymańska (in Boulton and Perez-Paredes, 2014) and Shaw (2011) as discussed in section 2.4.3. Positive findings also about self-confidence and sense of encouragement towards autonomous learning experienced with corpus concordancing tasks were further reported by Mansoory and Jafarpour (2014), Ozdemir (2014), Daskalovska (2015), and Tekin (2015) as also discussed in section 2.4.3.

This study argues that a combination between the linguistic, quantitative findings offered in the previous chapter and the qualitative, psycholinguistic findings offered in this chapter can contribute to future teaching decisions at university settings. The next section will develop a corpus style approach to the responses to the OES to show what actually and particularly was expressed by students as depicted in the corpus of written student responses that will be investigated. This will provide more detailed insight into the features that made

students become motivated (or demotivated) by CTM or TTM and offer more evidence for my claims about utilizing CTM in university classroom settings.

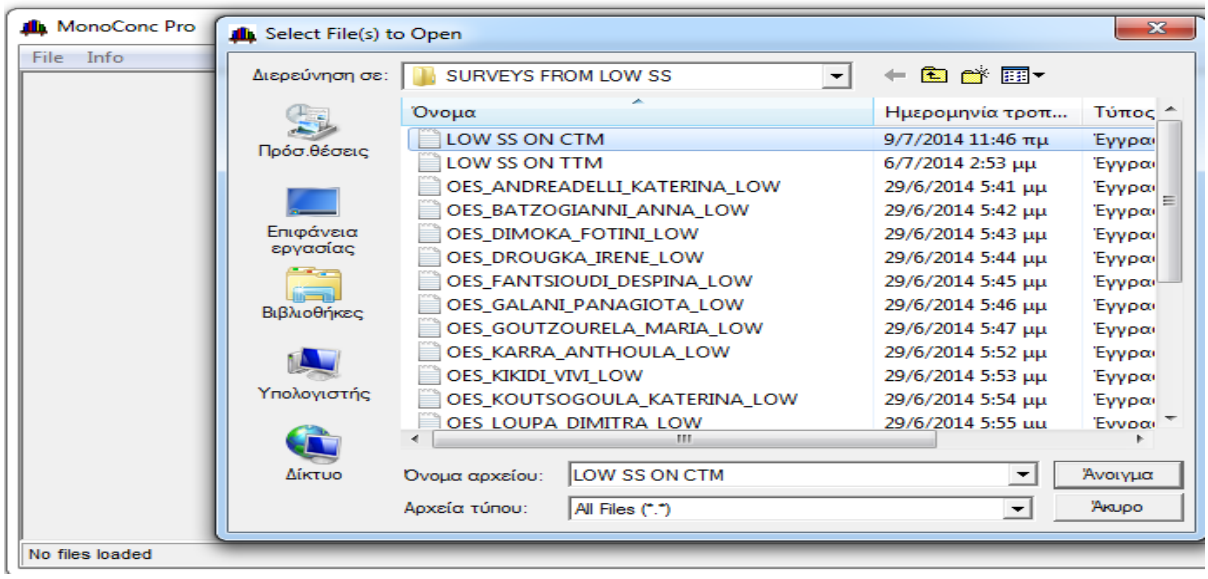
6.7 Corpus style approach to the responses to the OES

A corpus approach of the responses to the OES (qualitative data) offers a deeper insight into the reasons why the students were motivated or demotivated by CTM or TTM. The analysis of student responses and the corpus approach offered in this chapter, and the triangulation in the next chapter will contribute to making research-informed teaching decisions. To carry out 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 in order to be inserted into the MP.2.2 concordancing program used in this study.

6.7.1 Process of conducting corpus analysis

To gain some 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’) with all their opinions about CTM (as shown in Figure 6.1) was inserted.

Figure 6.1: 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 so as to obtain a deeper and 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 so as 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 meaning of target words is within the targets of CTM and TTM and it is important to see how the students relate the two methods with 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 towards CTM and TTM. As described in 3.10, there is literature that supports the idea of scrutinizing individual examples in context (Mair, 1996) and performing a more in-depth analysis and interpretation of authentic language offered by research participants (Hasko, 2011).

6.7.2 Collocates of *not*

To examine why most of the BLSs had a negative opinion about CTM, the KWIC *not* was typed in the concordancing program so as to elicit beginner level students' negative sentences. As shown in Figure 6.2 below, 14 concordance lines were obtained. Frequent collocates appear in red in MP2.2 to help observe what words 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.

Figure 6.2: Fourteen of 14 concordance lines of *not* retrieved with MP2.2 from BLSs' responses about CTM

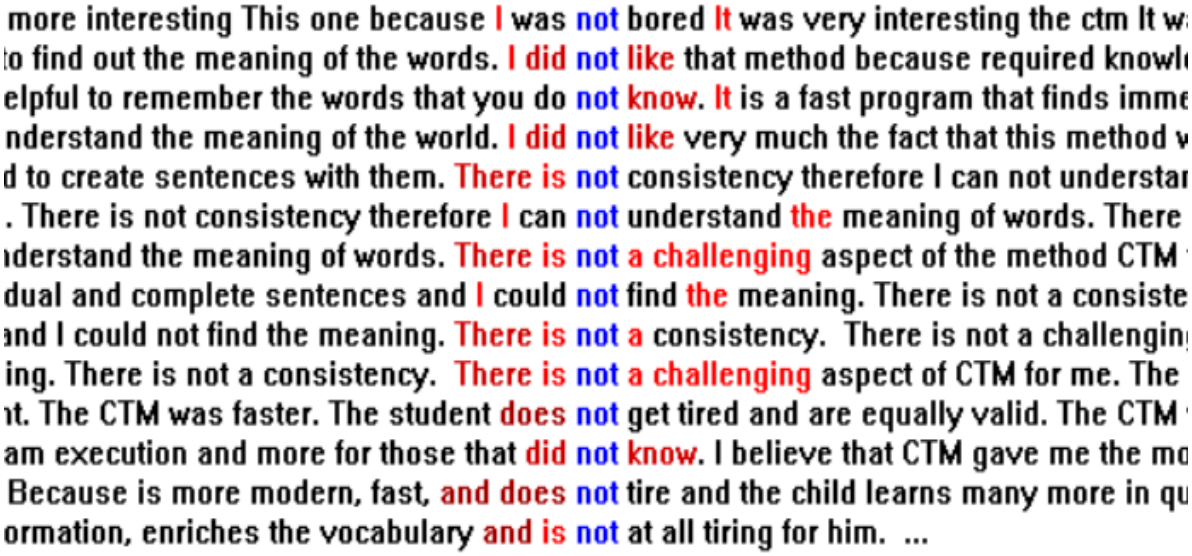
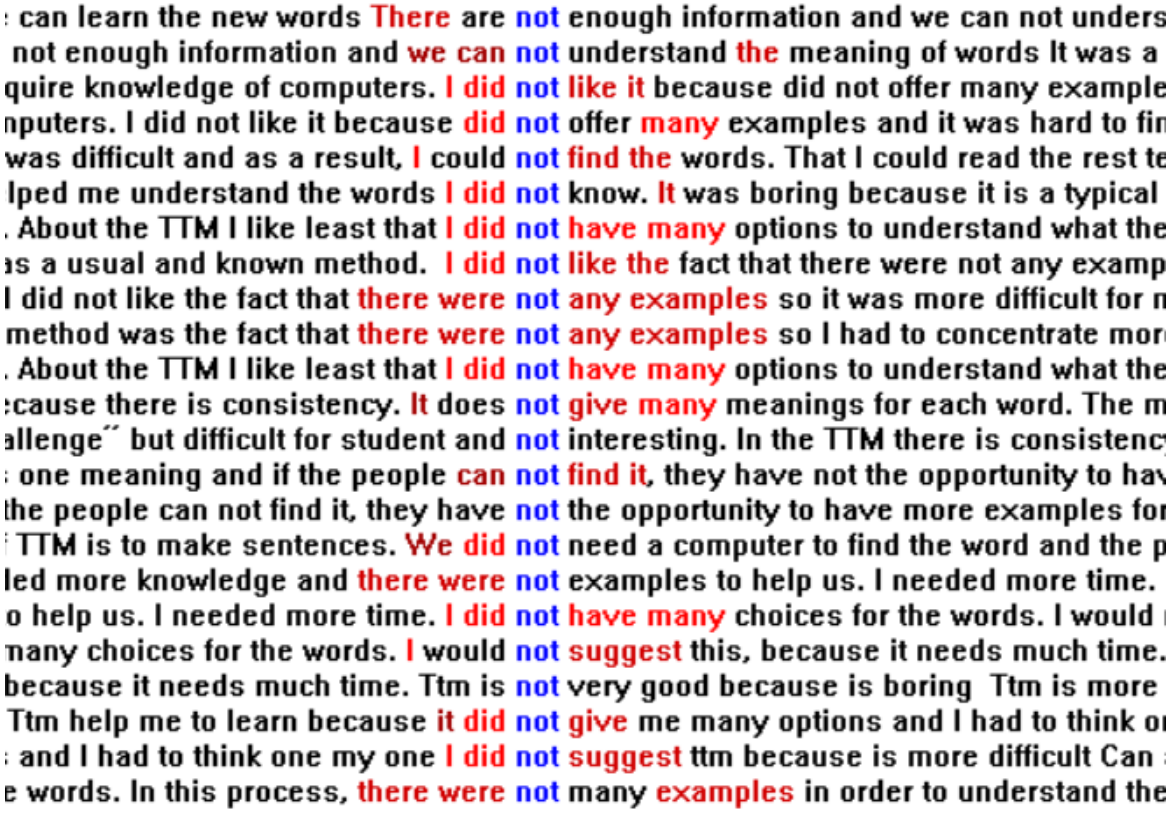


Figure 6.2 offers insight about how the BLSs see CTM. The BLSs used the word 'not' in 14 sentences; however, in 8 of 14 concordance lines (1, 3, 7, 10, 11, 12 13, 14) the word 'not' was used in a positive way such as "not tire", "not bored", "not at all tiring" etc. In the six clearly negative opinions, the BLSs raise issues of consistency of concordance lines and time. Those issues raised help teaching decisions in a future attempt 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 the particular level of students might be suggested, if I understood well from the context of 'consistency.'

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 negative opinions the BLSs had about the use of TTM in order for them to be compared to the students' opinions about CTM. The following concordance lines in Figure 6.3 show BLSs' responses when asked to reflect on TTM:

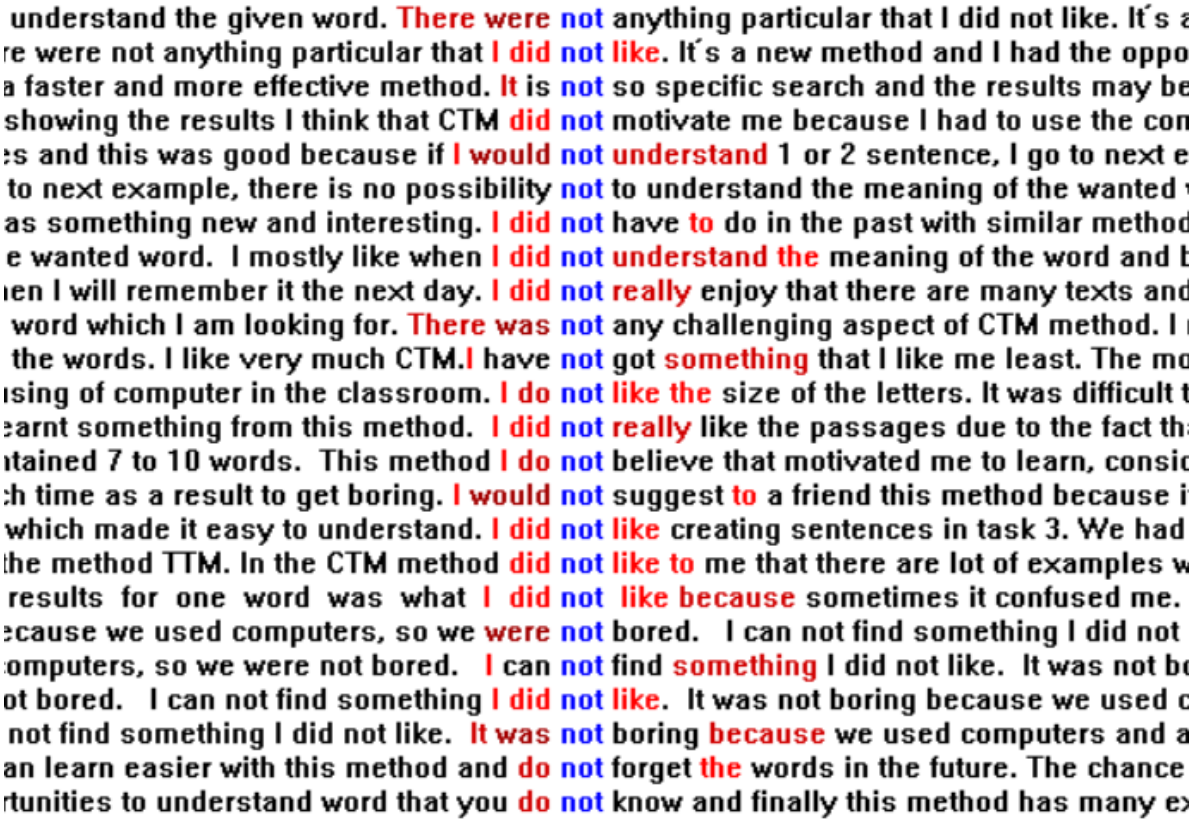
Figure 6.3: Twenty-three of 23 concordance lines of *not* retrieved with MP2.2 from BLSs' responses about TTM



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 raise issues of insufficiency of examples, loss of interest, boredom, and the like.

A similar comparison was performed between the responses of the intermediate level students (ILSs) about CTM and TTM. The following concordance lines in Figure 6.4 show ILS student responses to CTM:

Figure 6.4: Twenty-four of 24 concordance lines of *not* retrieved with MP2.2 from ILSs' responses about CTM



As seen in figure 6.4, ILSs 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 11 clearly negative opinions, the ILSs raise issues of confusion due to the great number of concordance lines and fear of ignorance of the new software.

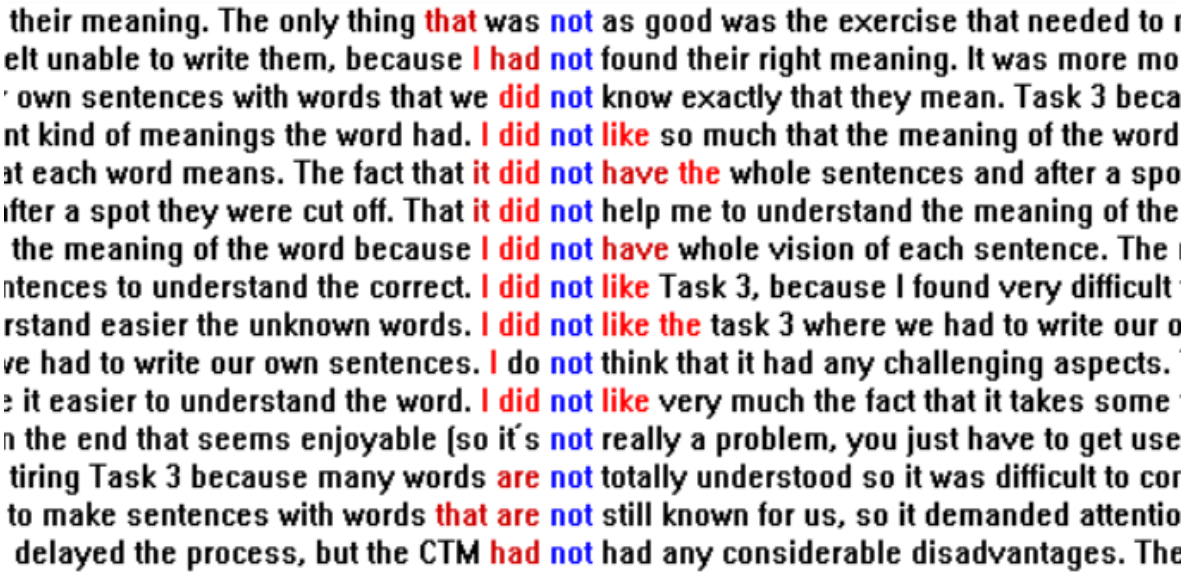
The same search about ILSs' opinions on TTM yielded the following concordance lines, as shown in Figure 6.5:

Figure 6.5: Thirty-three of 33 concordance lines of *not* retrieved with MP2.2 from ILSs' responses about TTM

When discussing TTM, the ILSs used the word 'not' in 33 concordance lines; in 33 of 33 sentences the word 'not' was used in a negative way, such as "not like", "not sure", "not suggest" etc. The ILSs raise issues of dislike, loss of interest, boredom, and the like.

A similar comparison was performed between the responses of the advanced level students (ALSs) about CTM and TTM. The concordance lines in Figure 6.6 show ALS responses to CTM:

Figure 6.6: Fifteen of 15 concordance lines of *not* retrieved with MP2.2 from ALSs' responses about 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;
- Not exact meaning found;
- Not having the whole vision of a sentence (obviously due to their not getting used to the capabilities of the software yet).

The same search about ALSs' opinions on TTM yielded the following concordance lines as shown in Figure 6.7:

Figure 6.7: Thirty-seven of 37 concordance lines of *not* retrieved with MP2.2 from ALSs' responses about 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 raise issues of dislike, unwillingness to recommend TTM, uninteresting approach, and the like.

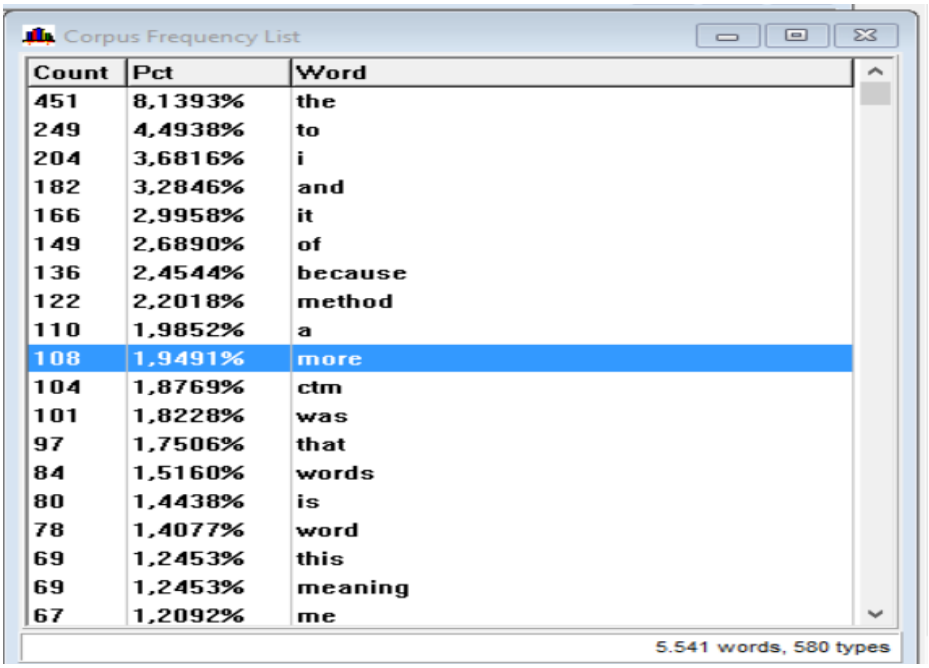
A semantically positive occurrence of the word 'not' was observed in almost half the responses to CTM (24 of 53), whereas a semantically negative occurrence of the word 'not'

was observed in all their responses to TTM (93 of 93). The semantic prosody of the word 'not' is used to express both contentment and frustration in case of CTM but only frustration in case of TTM. Such an observation proves that there is more to meaning than a single word. As Mahlberg (2005: 38) puts it "central is the observation that units of meaning tend to be more than single words and lexical patterns characterize the combinations of words in texts." This supports my argument that the students used the word 'not' in a clearly negative sense when commenting on TTM and not in a clearly negative sense 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.

6.7.3 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 adjectives offered by all students when writing about CTM are shown in Figure 6.8:

Figure 6.8: Results for most frequent adjective retrieved with MP2.2



As figure 6.8 shows, the most frequent adjective was the comparative ‘more’ (108 times). Figure 6.9 summarizes the collocates found in the immediate left and the immediate right positions of *more*, thus indicating the adjectives or nouns that the students preferred to use before and after *more*.

Figure 6.9: Collocates of *more* retrieved with MP2.2

	1-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		

As figure 6.9 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 there was usually something more 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 about CTM. The concordance lines in Figure 6.10 show the student responses to CTM:

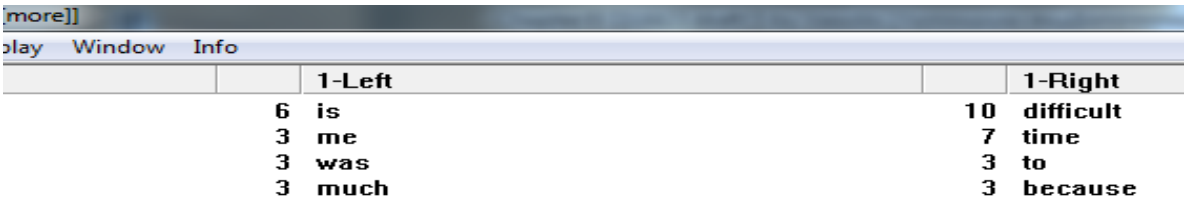
Figure 6.10: Forty of 40 concordance lines of *more* retrieved with MP2.2 from students' responses about CTM

Figure 6.10 shows how the student-subjects used the term 'more' at the sentence level to explain why they considered CTM "more interesting," "more convenient," "more appealing," and the like. For instance, if we look at the first concordance line from the top of Figure 6.10 and the first one from the bottom, we can see how the students explain why they felt CTM has 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 6.10 "…So many examples may drive us to more answers and to get tired until we finish…" The corpus style analysis offers thus a more in-depth picture of what the students were thinking when they used the comparative adjective 'more' (see all 40 concordance lines of *more* in numerical order on the attached CD).

The same searches as shown in Figures 6.9 and 6.10 were carried out using the corpus of opinions offered by the students when writing about TTM. Figure 6.11 summarizes the collocates appearing to its immediate right:

Figure 6.11: Collocates of *more* retrieved with MP2.2



As figure 6.11 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 with CTM, I looked closer at how my students were using the comparative adjective 'more' in the corpus of their responses about TTM. The concordance lines in Figure 6.12 show the student responses to TTM:

Figure 6.12: Thirty-six of 36 concordance lines of *more* retrieved with MP2.2 from students' responses about TTM

As shown in Figure 6.12, the comparative adjective 'more' was used 36 times. A brief look at the immediate right collocates of *more* reveals the students' negative attitude towards TTM because they mostly use the phrases "more difficult," "more time" and the like, which was also calculated in the qualitative analyses as shown in sections 6.3 and 6.4. However, the corpus style analysis, drawn from Figure 6.12, shows how the student-subjects used the term

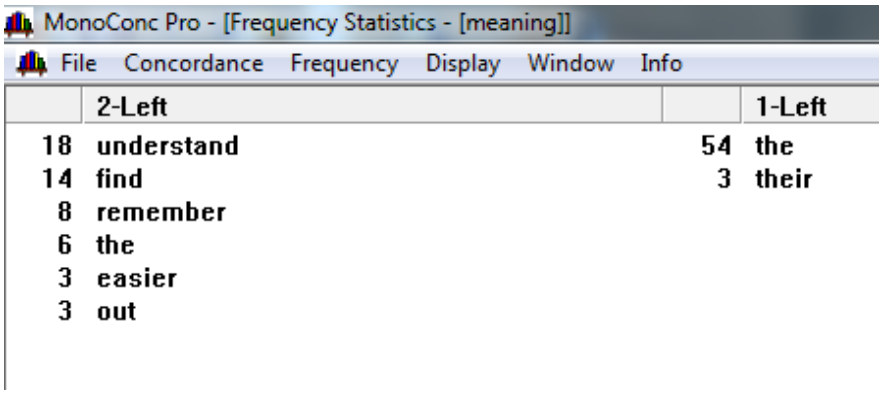
‘more’ at the sentence level to explain why they considered TTM “more difficult,” “more familiar,” and everything. For instance, if we look at the second concordance line from the top of Figure 6.12 “…TTM did not motivate me more because this method not only was less interesting…,” we can see how the student justified his/her feeling that they were not motivated by TTM. They seem to be wondering why TTM would motivate them more and at the same time providing the answer by themselves 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 draw conclusions, we can easily look much closer at each concordance line and discern how and why the students used the term ‘more’ the way they did. This will also be particularly useful when triangulating (in sections 7.2 and 7.3) with the other types of data involved in my research, namely the quantitative data (performance scores in tasks and motivational questionnaire results), the OES responses, and the interview responses in the pilot study. The corpus style analysis offers thus 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 6.10, 6.11, and 6.12 shows that students felt that TTM was more difficult than CTM which generally means that students felt there was something more in the process of learning when using CTM rather than when using TTM.

6.7.4 Collocates of *meaning*

The next most frequent words after ‘more’ offered by all students when writing about CTM was ‘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 meaning of unknown vocabulary across their responses about CTM and TTM. Figure 6.13 shows the immediate left collocates 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’ across their responses about CTM and TTM. The verbs ‘understand’, ‘find’ and ‘remember’ were mostly used by the respondents when commenting on CTM.

Figure 6.13: Collocates of *meaning* retrieved with MP2.2



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 the like. Figure 6.14 shows these words in context:

Figure 6.14: Thirty-six of 69 concordance lines of *meaning* retrieved with MP2.2 from students' responses about CTM

Figure 6.14 further reveals that the phraseology at sentence level used before the above mentioned key phrases in context is positive such as "help," "be surer," "more easy," "funny way," "many sentences given to us," "gives more chances," and the like. This corpus style analysis offers a more qualitative observation of the reasons why the students preferred or not one method from the other. For example, if we look at the first concordance line from the top of Figure 6.14 "…CTM method like to me that you can find easier the meaning of the words…" we can see how the student justifies his/her preference though their syntax is not accurate (see all 69 concordance lines of *meaning* in numerical order on the attached CD).

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 results shown in Figure 6.15:

Figure 6.15: Left collocates of *meaning* retrieved with MP2.2

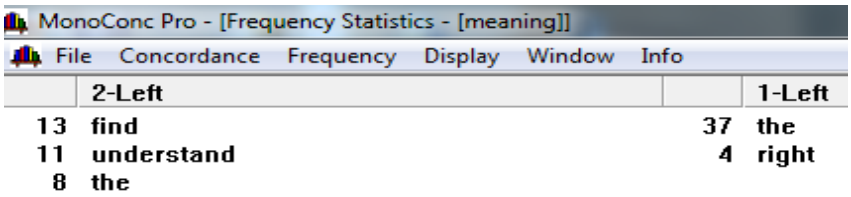
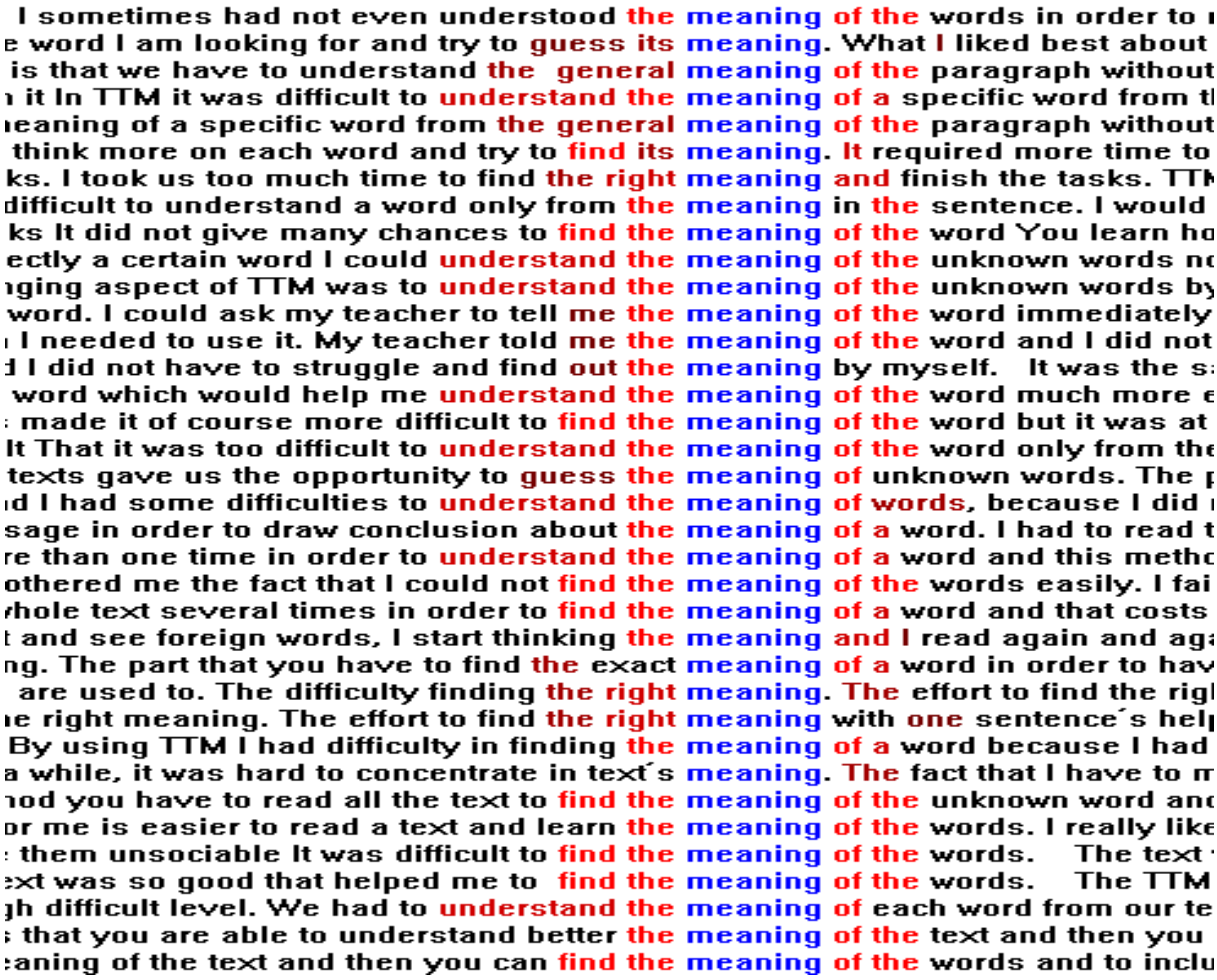


Figure 6.15 shows that the verbs "find" and "understand" were most frequently used. It is worthy of note that the collocate *remember* never preceded the noun *meaning* when the students commented on TTM but it did precede the noun *meaning* eight times when the students commented on CTM (see Figure 6.13). I would argue that the students associate retention of target vocabulary with CTM but not with TTM. This argument is supported by my finding in item 11 "I think I will remember the words any time I meet them in the future" (Appendix 5.3) where 77 percent of all my students responded positively (4 to 6 in the 6-point Likert scale) about CTM and 57 percent of them responded positively about TTM. My findings about association of target vocabulary retention with CTM concurs with the findings from Akbari *et al* (2015) about retention of collocations and from Daskalovska (2015) about better retention of information, as was described in section 2.4. Figure 6.16 shows the phraseology used before the verbs "find" and "understand":

Figure 6.16: Thirty-six of 52 concordance lines of *meaning* retrieved with MP2.2 from students' responses about TTM



As Figure 6.16 shows, the phraseology used before the key phrases "understand the meaning," "find the meaning," "guess the meaning," and the like, 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 6.16, 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 6.16 (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 6.14 shows how differently the students negotiated the meaning of unknown words when using the one method or the other. It appears that when it

comes to CTM the notion of ‘meaning’ is associated with more positive context in the students’ mind (the complete 52 concordance lines of KWIC *meaning* for TTM can be seen on the attached CD).

Table 6.16 shows the next most frequent words the students used. A selective comparison of their appearance across CTM and TTM was also suggested for further research.

Table 6.16: Suggested selective comparison of frequency across CTM and TTM

Word	Frequency of use when writing about CTM	Frequency of use when writing about TTM
interesting	40	12
easier	31	2
easy	28	4
suggest	39	1
motivated	22	4

The corpus style analysis of my students’ responses presented in this section offered insight into aspects that might help formulate teaching recommendations in the future, including insight from the quantitative data analysis in Chapter 5 and the qualitative data analysis presented in sections 6.3, 6.4, 6,5, and 6.6. By addressing the teaching recommendations, teachers can better meet the English language learning needs of their students in university settings.

6.8 Conclusions

This chapter described and analyzed the responses to the OES (qualitative data) of this research, focusing on the categorization processes and student responses (with frequencies). The student responses offered useful reasons why students liked or disliked CTM or CTM and generally exhibited how students approached both teaching methods. A summary of the qualitative findings and my reflections on important aspects of student responses and a corpus style approach to the analysis of the responses were offered.

This chapter addresses the fourth research question, which focused on identifying which aspects of the two methods motivate or demotivate students. As discussed in this chapter, the students of this study liked CTM more than TTM and this applies to all ability levels despite reservations that beginners might dislike corpus concordancing because it might be too difficult to them. The aspects of CTM that motivated students to indicate their preference for it were related to convenience and variety of concordance lines, whereas the aspects that demotivated the students were related to boredom and in fewer cases, the appearance of too many concordance lines. The multiplicity of concordance lines and word meanings offered in the 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 multiplicity of concordance lines, which, on the contrary, was their primary reason for liking CTM, but with computer searches and problems. Students of different abilities identified different challenges when taught using TTM. Intermediate and advanced students identified the most challenging aspect as the context-based learning; beginners found the shortage of sample sentences a challenge. This seems to indicate that beginners did not actually have a problem with multiplicity of concordance lines and instead, thought of them as helpful and useful to them.

Nearly all the students of this study stated that CTM motivated their learning more than TTM did. The aspects of CTM that motivated their learning more had to do with creativity and interest with variety of concordancing lines establishing motivation more to beginners and intermediate students rather than advanced ones. I conclude that all students regarded CTM as something creative and interesting so this allows a teacher to include CTM in their teaching syllabus to render it more creative and interesting. Furthermore, nearly all the students of this study of all ability levels indicated that they would recommend CTM to a friend for several reasons but only few had the same opinion about TTM and would only give one reason why. The aspects that motivated them to prefer suggesting CTM had to do with effectiveness and interest. I argue that CTM seemed to establish itself as something better in the minds of the students, which might be taken into account by a teacher when modifying their teaching syllabus decisions.

The corpus style analysis of my students' responses to the OES provided in-depth findings about why the students preferred the one learning method or the other. When students responded about TTM they used the word 'not' in a clearly negative sense whereas when they responded about CTM they used it not in a clearly negative sense. Deep in their heart, CTM imparted a very positive sense but TTM imparted mixed feelings. Also, when students responded about TTM they used the comparative 'more' mainly to express that it is harder than CTM, whereas when they responded about CTM the used the word 'more' to express that CTM offers more benefits than TTM; and generally the inevitable contrast between the two learning methods in this case, due to the contrasting nature of the word 'more', revealed the supremacy of CTM in the eyes of the students. Furthermore, in the case of the KWIC *meaning*, students clearly associated CTM with better vocabulary retention and greater opportunities for comprehension of meaning than TTM. This revealed their inner feelings about the potential of each method to establish future retention of vocabulary finally rendering CTM as 'the clear winner.'

The next chapter (Chapter 7) presents a triangulation between the quantitative results in Chapter 5 and the qualitative results and the corpus-style analysis findings in this chapter with a view to making necessary future teaching decisions. This triangulation will contribute to creating a suggested teaching unit adapted to the needs of students as defined by the findings of this study in line with the aims defined in section 3.9.

CHAPTER 7 Triangulation of findings and teaching suggestions

7.1 Introduction

In this chapter, I will triangulate my findings from the quantitative (Chapter 5) and qualitative results (Chapter 6). As explained in section 3.3, this process is important in order to validate my interpretations. The responses to the Open-Ended Survey (OES) described in Chapter 6 will help me expand on the quantitative findings (Creswell and Plano Clark, 2007). Because those qualitative responses resulted in an exhaustive qualitative data set, they provided me with extremely interesting and useful quotes that I will use to validate and contextualize the quantitative questionnaire findings. For example, I will triangulate findings about unknown vocabulary, which are drawn from different quantitative and qualitative items such as items 4, 5, 14, 29, and 32 (Appendix 5.3), item 18 (Appendix 5.4), Figures 6.13 to 6.16 (corpus style analysis), Tables 6.3, 6.14, and 6.15 (thematic analysis), and the findings about Task 1 offered in section 5.2 (Table 5.4) to locate convergences and divergences. This kind of concurrent and analytic triangulation will help me cross-validate the analytical findings within my study so that the possible weaknesses of one measurement method can be overcome by another. Both forms of data will be prioritized as much as possible; the data analysis will be separated across ability levels, and the interpretation will involve discussing the extent to which the data converge or triangulate (Hanson, Creswell, Clark, Petska, and Creswell, 2005: 229). This approach to triangulation may obviously be more time-consuming, but it offers stronger evidence for drawing conclusions through the corroboration of the findings (Johnson and Onwuegbuzie, 2004).

It is important to recognize both what the corpora are capable of telling us and the necessity of local, specialized pedagogy. Gavioli and Aston (2001: 239) state that, while not telling us what to teach, "[corpora] can help us make better-informed decisions, and oblige us to motivate those decisions more carefully." Seidlhofer (in Mukherjee and Rohrbach 2006: 219–220) argues that "[t]here are no global solutions to motivational problems, no generally

valid answers and truths. Foreign language pedagogy, and presumably any pedagogy, has to be local, designed for specific learners and settings." Likewise, the preferences and responses of the students of this study will not inform me about what I should teach, but they will help me take decisions on how to teach in order to better motivate my students. To this end, I identified key points of convergence between the quantitative and qualitative results of my study that allowed me to describe key benefits and difficulties my students experienced when using CTM. I will describe the benefits in section 7.2 and the difficulties in section 7.3. The analysis of these benefits and difficulties constituted the basis for the development of a suggested teaching unit to be used by teachers when teaching via CTM, which will be discussed in section 7.4.

7.2 Key student benefits from CTM

According to my findings in sections 5.2 and 5.6 respectively, the mean performance and the mean motivation of my students across the student ability level (advanced, intermediate, and beginner) and across the different types of passage (SP1 and SP2) were better with CTM than with TTM. Simple additional calculations of student performance (above 50% of success) across all tasks and all passages assigned in this study showed that in three out of four linguistic tasks (Tasks 1, 2, and 3), all students performed better with corpus concordancing than with the traditional teaching methodology (see Table 5.4 in section 5.2). A general finding about all types of student ability levels in this study was that they mostly preferred CTM over TTM while working on SP1 and SP2 (see Appendix 5.3, questionnaire item 31).

As discussed in section 6.3, all the students participating in this study liked CTM, but not all the students liked TTM. Nearly all of them stated that CTM motivated their learning more than TTM did (to be elaborated later on). Furthermore, most of the students indicated that they would recommend CTM to a friend, but only a few said that they would recommend TTM. The reasons for this was that students thought that CTM was superior to TTM in terms of convenience, effectiveness in understanding, modern technology, and

attractiveness (in terms of being attracted by the new learning approach). In particular, they cited numerous reasons for being more motivated by CTM with regard to the comprehension of the target vocabulary's meaning; in contrast, they could provide only a few such reasons for TTM.

As shown by the students' responses to the motivational questionnaire items (Appendix 5.3), students of all ability levels felt that CTM helped them improve various types of skills more than TTM did. In particular, they identified CTM (82%) as enhancing their reading skills more than TTM (70%) (item 16, Appendix 5.3) and also appeared to prefer CTM (89%) over TTM (67%) in terms of learning skills improvement (item 18, Appendix 5.3). Student participants also preferred CTM (82%) over TTM (67%) with regard to developing their critical thinking skills (item 2, Appendix 5.3) and problem-solving abilities (CTM 82% vs. TTM 49%) (item 9, Appendix 5.3).

Most participants in this study felt confident in their ability to use CTM for understanding passages (CTM 75% vs. TTM 45%), producing new sentences on their own (CTM 82% vs. TTM 58%), and generally handling similar tasks in the future (CTM 53% vs. TTM 47%) (see items 6, 23, and 28 respectively in Appendix 5.3). These findings concur with those of Ozdemir (2014) and Zohairy (2015), while contradicting the previous work by Meunier (in Granger, Hung, and Petch-Tyson, 2002: 135) and Granath (in Aijmer 2009: 63), who raised issues of student confidence in CTM.

The student's indications about the practicalities of the teaching and learning sessions revealed that the majority of the beginner-, intermediate-, and advance-level students (90%) considered the CTM classroom, a computer lab, more convenient than the TTM classroom (item 1, Appendix 5.3), while considering the TTM classroom more comfortable (90%) than the CTM classroom (85%) (item 15, Appendix 5.3) probably due to the fact that the TTM classroom was not a computer lab but a traditional university classroom with more space than a lab. Convenience and/or easiness of learning materials in general (software, laptops, PCs, and worksheets) was required by all students, but was overwhelmingly prioritized by beginner-level students, especially when recommending it to others (see section 6.4) and in

their OES responses when a corpus style analysis was performed (see concordance lines of *eas** about CTM on the attached CD). Students were also asked to comment on the duration of the lessons (item 27, Appendix 5.3). In the case of TTM, student responses showed that 37% of the beginners needed much more time to read the assigned passage than those in the other two student ability levels (21% of the advanced and 32% of the intermediate students reported the same). Student responses to CTM varied across the different levels; for example, the intermediate students (68%) appeared to disagree with the advanced students (79%) in terms of time convenience. Considering that the intermediate students' total performance in the linguistic tasks was better across teaching methods, was closer to that of the advanced students than anticipated and was even better than the advanced students in individual tasks across SP1 and SP2, it can be inferred that, despite their difficulty, the intermediate students wanted to strive for better scores so they seemed to want more time to do the tasks. The intermediate students' insecurity about their potential is also evident in item 28 (Appendix 5.3), where their degree of confidence appeared to be equal across CTM (50%) and TTM (50%), which means that sometimes they were confident with CTM and at other times with TTM.

This was also evident with respect to student confidence level (items 6 and 23, Appendix 5.3) where the intermediate students appeared less confident or more insecure than students at all other levels in case of both teaching methods (CTM 64%, TTM 36%), while the beginners (CTM 89%, TTM 53%) appeared to be more confident than those in the other two student ability levels (advanced – CTM 74% and TTM 47%). I attribute this to the enthusiasm that beginners proved to have about CTM's novelty, which was expressed through their learning method preferences and motivation indications across the methods (as described in section 6.3). My finding about the effect of CTM's novelty on my student's motivation converges with the findings in previous research (Benavides, 2015; Chang and Kuo, 2011; Daskalovska, 2015).

This study also revealed that more advanced (89%) and intermediate students (91%) than beginner students (68%) were in favor of corpus consultation when learning vocabulary (item 5, Appendix 5.4). This tendency also appeared in the performance results of Task 1

where students were assigned to discover the meaning of the target vocabulary through CTM (see results for Tasks 1–4 in section 5.2, Table 5.4). A key finding of this study was that, in the opinion of all my students, CTM was highly associated with the retention of target vocabulary (CTM 77% vs. TTM 57%) (item 11, Appendix 5.3) in concurrence with my corpus style analysis findings (section 6.7), the pilot students' testimonials from the corpus concordancing training session (see attached DVD or read its transcript on the attached CD), and in line with Akbari *et al* (2015), Daskalovska (2015), Li (2015), Chan and Liou (2005), and Shaw (2011), who argue that Data Driven Learning may effectively help students remember new vocabulary. The majority of students (92%) felt that by working through CTM, they would be much more capable of dealing with new and similar linguistic tasks, and comprehend target vocabulary in the future (item 29, Appendix 5.3).

As shown in section 5.8, the students of this study preferred the multiplicity of sentences offered in CTM, in spite of the fact that this is the most novel and perhaps hardest part and in contrast to previous research that reports it as a serious demotivational feature of using corpora in language learning (Mansoory and Jafarpour, 2014; Zohairy, 2015). This finding was supported by the students' identification of the variety of sample sentences as the primary reason for them liking CTM and the secondary reason for them being motivated by it (discussed in more detail in section 6.3). This is also in line with my finding in item 20 (Appendix 5.4) where a small proportion of all the students (19 out of 60; 31.67%) agreed that they had difficulty using the Thessaly Corpus due to the presence of too many sentences in the concordance output. It also seems that the issue of separate or cut-off arrays of concordance lines, which was raised by the beginner students (68%) (item 17, Appendix 5.4) and the advanced students (corpus style analysis, section 6.7, Figure 6.6), did not discourage all students from considering the number of concordance lines an advantage. Hence, it appears that most students preferred longer and a great variety of concordance lines (more than 80 characters).

In agreement with Chen *et al.* (2015) about CTM's potential to motivate students to produce better language, I found, in Task 3, that my students were motivated more by CTM (47%) than by TTM (37%) (item 33, Appendix 5.3) although that productive task was

generally hard to cope with (see Table 5.4 in section 5.2). This was also in agreement with my finding in item 23 (Appendix 5.3), where students from all levels indicated that they felt highly confident about producing relevant sentences on their own via CTM in the future (CTM 82% vs. TTM 58%) and with my finding in section 6.3 that CTM's potential for creativity was the leading reason why students became more motivated by CTM than by TTM.

My study also found that the compilation of the Thessaly Corpus (TC) was highly satisfactory (items 13, 9, and 4, Appendix 5.4), and highly motivational in terms of its perceived value, given that 22 of 30 students across all levels notched between 4 to 6 on the Likert scale (Appendix 5.6). Additionally, an overwhelming proportion of all my students indicated that the TC provided interesting content (88%) (item 7, Appendix 5.4), which was easy for them to find (85%) (item 11, Appendix 5.4), and that it provided personalized learning support (78%) (item 16, Appendix 5.4). CTM's superiority over TTM in terms of student performance proved the relevance and appropriateness of the corpus collected and utilized. This was also shown by student indications in item 4 (Appendix 5.4), where the vast majority of students (85%) responded that they felt they had learned more than they used to. The broad appeal of the TC and the keenness of the students of this study to use it were also demonstrated by the fact that an overwhelming proportion of all my students (95%) indicated that the TC was user-friendly (item 12, Appendix 5.4). A great majority of the students (95%) regarded the TC's operation as stable (item 1, Appendix 5.4) and a strong majority of students (86%) indicated that it exactly fitted their needs (item 2, Appendix 5.4). Furthermore, the TC proved to be easily accessible as indicated by a huge majority of students (93%) (item 14, Appendix 5.4); students indicated that this was the first and foremost reason why they would recommend CTM to friends and the second most frequent reason why they liked it (section 6.3).

Key to this project's success was the training that students received on how to use the corpus and the software. The vast majority of them (91%) were highly satisfied with the training they had received prior to using the TC for the assigned tasks (item 10, Appendix 5.4). This finding was confirmed by the participants of my pilot CTM training session who

pointed out the usefulness of such training and expressed their satisfaction at the end of it when they were briefly interviewed (watch the oral interview part of the attached CTM training DVD or read its video transcript on the attached CD) with the only exception that they stressed the need for some more time available for training; this concurs with previous research about the need for sufficient training (Benavides, 2015; Leńko-Szymańska, 2014; Marza, 2014; Shaw, 2011).

Overall, this study showed that along with being openly in favor of inclusion of corpus consultation within a learning syllabus, majority of my students (87%) also indicated that CTM was easy to follow (item 10, Appendix 5.3), thereby concurring with the assertions of Mansoory and Jafarpour (2014) who regard corpus concordancing as a creative and interesting teaching approach that a teacher should include in their syllabus. Next, I will describe the specific benefits experienced by the advanced students of this study.

7.2.1 Advanced students

This study revealed various key benefits experienced by the advanced learners. One of the key findings about this student ability level, as shown in section 5.2, was that the difference in their mean performance across CTM and TTM was substantial. Stressing its effectiveness and capacity to induce interest, the group of advanced level students provided more reasons for being motivated by CTM and offered more reasons for recommending CTM to friends than those from the two other ability levels, as shown in section 6.4. Furthermore, 84% of them felt that the way the CTM was taught was a better aid to learning (item 3, Appendix 5.3).

A very large majority of the advanced students (89%) recognized the successful compilation of the TC and its potential to make them feel that they had learned more than they used to (item 4, Appendix 5.4). The idea also of a new English language teaching syllabus that would include the TC was favored by an overwhelming majority of my advanced students (95%) (item 3, Appendix 5.4).

My study showed that the advanced students scored above 50% of success in Tasks 1, 2, and 3 (out of 4) using CTM rather than TTM (see Table 5.4 in section 5.2). For example, in Task 2, nearly all my advanced students (18 out of 19) scored above 50% of success. With regard to Task 3, which was a totally productive task, a large majority of the advanced students indicated that the CTM lesson (84% and 79% in items 20 and 23 respectively) had made them much more productive (item 20, Appendix 5.3) and confident of being able to produce relevant sentences on their own in the future (item 23, Appendix 5.3) than the TTM lesson (68% and 53% in items 20 and 23 respectively). This study further showed that the advanced students' performance scores in Tasks 1, 2, and 3 were consistently higher with SP2 than with SP1 across both methods, with the partial exception of Task 2, where an equal number of advanced students scored above 50% with both SP1 and SP2. The students' performance was reflected in their motivation; a great number of advanced students indicated that they enjoyed filling in the sentences in Task 2 more with CTM (68%) than with TTM (37%) (item 7, Appendix 5.3).

It must be further noted that all my advanced students (19 out of 19) indicated that the CTM tasks were helpful for learning the meaning of unknown vocabulary (item 5, Appendix 5.3) and that the CTM activities (79%) were more helpful than the TTM activities (58%), particularly for learning the usage of vocabulary (item 13, Appendix 5.3). Furthermore, a great number of advanced students (14 out of 19) indicated they would remember the vocabulary assigned in the CTM tasks better than the one assigned via TTM (10 of 19) (item 11, Appendix 5.3). An overwhelming number of them indicated that they would be able to perform new but relevant activities and understand unknown words using CTM approaches (95%) rather than using TTM (58%) (item 29, Appendix 5.3) and that they acquired new vocabulary much more in the CTM lesson (95%) than in the TTM lesson (63%) (item 14, Appendix 5.3). A huge section of the advanced students (95%) appeared to need more help to completely understand words dealt with in the TTM lesson (item 4, Appendix 5.3); however, I argue that the fact that they wanted more assistance via TTM implicitly reveals their preference of CTM because of the sense of autonomy it may have encouraged in them (c.f. Daskalovska, 2015; Leńko-Szymańska, 2014; Mansoory and Jafarpour, 2014; Ozdemir, 2014; Shaw, 2011; Tekin, 2015; Wu, 2015; Zohairy, 2015). By reversing the indications of

my advanced students in item 28 (Appendix 5.3), I found that a high proportion of my students (74%) felt confident enough to handle similar tasks in the future.

This study further showed that an overwhelming majority of the advanced level students indicated CTM (89%) as being far better than TTM (47%) in terms of application of problem-solving skills, which made their learning easier (item 9, Appendix 5.3) in concurrence with their indications in item 18 (Appendix 5.3), where they had cited very strong preference for CTM (89%) to help improve their learning skills. This was supported by my corpus style findings within the advanced students' responses about CTM to the OES when I typed in the search string *learn** and retrieved 29 relevant concordance lines to observe how the advanced students had used the word *learn* in context (see the 29 concordance lines of *learn** about CTM on the attached CD). As was shown in the concordance output, all 29 sentences with the search string *learn** were positive, meaning that this student level associated CTM with more and/or better learning. I also performed the same exact search within the advanced students' responses about TTM and discovered that in 4 out of 6 concordance lines, the search string *learn** had a negative sense at the sentence level and hinted that TTM did not contribute to more and/or better learning as much as CTM did (see the 6 concordance lines of *learn** about TTM on the attached CD). This strong preference was also unanimously confirmed by their responses to the OES where all the advanced students wrote that they would recommend CTM to a friend for a number of reasons (section 6.4). Next, I will describe specific benefits experienced by the intermediate students of this study.

7.2.2 Intermediate students

This study revealed various benefits experienced by the intermediate learners. One of the key findings about intermediate students, as shown in section 5.2, was that there was a substantial difference in their mean performance across CTM and TTM. An overwhelming majority of the intermediate students (21 out of 22) indicated that the CTM class experience had helped them improve their reading skills (item 16, Appendix 5.3) and that the way the CTM lesson

had been taught was a very good aid to learning (20 of 22) (item 3, Appendix 5.3). Intermediate students (59%) showed a deeper feeling of mistrust about TTM than the students from other levels (advanced 68% and beginners 79%), as demonstrated in their responses to item 30 (Appendix 5.3) where they appear to be the most distrustful students concerning the potential of TTM lessons to make learning more interesting than CTM.

As was shown in section 6.4, the intermediate students declared they would recommend CTM to friends, prioritizing its modern status and convenience, which shows the CTM lesson contributed to their enjoyment and satisfaction and was a generally approachable method to them. This was confirmed by the striking finding that a huge majority of the intermediate students (91%) indicated that they had most enjoyed working with the CTM passage (item 31, Appendix 5.3), while they were the least satisfied (47%) with the TTM passage. This finding also converged with my corpus style findings within the intermediate students' responses about CTM to the OES when I typed in the search string *eas** and retrieved 23 relevant concordance lines to observe how the intermediate students used the word *easy* in context to draw conclusions about the two learning methods (see the 23 concordance lines of *eas** about CTM on the attached CD). As was shown in the concordance output, all 23 sentences with the search string *eas** were positive, meaning that this student level associated CTM with ease or convenience. I also performed the same search within the intermediate students' responses about TTM and discovered that those students had expressed a positive opinion in terms TTM's convenience only in 5 out of 7 concordance lines with the search string *eas** (see the 7 concordance lines of *eas** about TTM on the attached CD).

One of the most important findings was the intermediate students' belief that CTM would help them remember vocabulary better than TTM would; they appeared to be well ahead of the students from the other two levels in this aspect and identified CTM (82%) as being far superior to TTM (55%) (item 11, Appendix 5.3). As with the advanced learners (95%), the intermediate students (95%) appeared to feel certain that they would be able to deal with new but relevant activities and understand unknown words following CTM rather than TTM (item 29, Appendix 5.3).

This study found that the intermediate level students achieved high overall performance compared to those from the other student levels and this applied to each individual task (see performance scores above 50% in section 5.2, Table 5.4). It also appears that they performed much better with SP2 than with SP1 regardless of the method (section 5.2). This finding was also supported by their motivation indications. In item 31 (Appendix 5.3), the majority of the intermediate students (91%) indicated that they had enjoyed working with the passage when CTM was involved but less than half of the sample (45%) said that they had enjoyed working with the passage when taught through TTM. The greatest difference in performance between CTM and TTM across teaching methods appeared with Task 3 for the intermediate students. Out of 20 intermediate students, 11 scored above 50% in Task 3 when taught with CTM whereas only three scored above 50% in Task 3 when taught with TTM.

My study also found that the intermediate students (91%) were enthusiastic supporters of using the TC in learning vocabulary (item 5, Appendix 5.4) while only a few of them (32%) indicated they found it hard to use the TC due to the presence of too many concordance lines (item 20, Appendix 5.4). Additionally, a large proportion of them (86%) indicated that the TC provided content that exactly fitted their needs (item 2, Appendix 5.4). The vast majority of my intermediate students (82%) felt good about the idea of a new university syllabus that would include the TC (item 3, Appendix 5.4). This observation was also confirmed by the high motivational value they attributed to the TC (section 5.2).

I also found that the overwhelming majority of the intermediate students (82%) indicated that the CTM tasks were helpful for learning the meaning of unknown vocabulary (item 5, Appendix 5.3), concurring with Balunda (2009), Shaw (2011), Chen *et al.* (2015), Ozdemir (2014), and Leńko-Szymańska (2014), while all the intermediate students indicated that CTM was helpful for learning the usage of vocabulary (item 13, Appendix 5.3). Furthermore, the intermediate students felt much less need for the synonyms of some unknown words with CTM (64%) than with TTM (82%). They also felt this need significantly less than the other two student levels (item 32, Appendix 5.3). Referring to item

14 (Appendix 5.3), the intermediate students (95%) indicated that they received new words with more ease in the CTM lesson than with the TTM lesson.

Overwhelming indications in favor of CTM and against TTM were also provided by the intermediate students in items 2, 9, and 16 (Appendix 5.3) where my intermediate level students indicated that the CTM tasks required critical thinking (86%) and application of problem-solving (91%) and reading skills (95%), which made their learning easier than with TTM. With regard to the application of skills, the most striking indication by intermediate students appeared in item 18 (Appendix 5.3) where all of them (22 out of 22) indicated that the CTM class experience helped them improve their learning skills. I conclude that, across all student levels, the intermediate students felt their skills developing with CTM the most, thereby emphasizing the difference between CTM and TTM. Next, I will describe specific benefits experienced by the beginner students.

7.2.3 Beginner students

This study revealed various key benefits experienced by the beginner learners. One of the key findings about beginner students, as shown in section 5.2, was that the difference in their mean performance across CTM and TTM was not substantial. Their overall performance in the linguistic tasks proved slightly better with CTM than with TTM. This finding partially contradicts Flowerdew's (2009) claim that only the most advanced learners can exploit corpus concordancing in an effective way, since it proved that my beginner learners improved their learning more with CTM than with TTM, although their improvement was not as marked as that of the other two student levels in this study.

The motivational aspect of my beginner level students provided a clear picture of their preferences between CTM and TTM. In spite of the fact that the beginners' performance scores were lower than those of the other two ability levels, their motivation ratings were high compared to the performance scores and usually similar to the motivation ratings of the other two ability levels; this was in contrast to previous research (Sah, 2015)

that defines low student ability level as one of the key demotivational characteristics in the corpus teaching methodology. As shown in section 6.4, they provided numerous reasons for being motivated by CTM but only few reasons for being motivated by TTM. The most common motivational reasons included the variety of sample sentences and the use of modern technology. The latter reason also concurs with reasons observed in previous research (Benavides, 2015; Mansoory and Jafarpour, 2014; Tekin, 2015; Wu, 2015). The variety of sample sentences offered in CTM was also their primary reason for liking CTM along with its convenience and effectiveness in aiding understanding.

A great majority of the beginner students indicated they would remember vocabulary better with CTM (74%) than with TTM (63%) (item 11, Appendix 5.3) and that CTM (84%) would better enable them to deal with new but relevant tasks and understand unknown vocabulary than TTM (68%) (item 29, Appendix 5.3). They also reported CTM's effectiveness for aiding comprehension as one of the top three reasons for them liking it (section 6.4). Thus, despite them having had a hard time, they did not seem to be discouraged or losing their interest. This finding disputes Gilmore's (2009) claim that low ability learners have lower preference for CTM than other student levels. In particular, as discussed in section 6.4, it was not only advanced students who had to "hunt" to work out unknown vocabulary; beginner level students (74%) proved to be even more motivated to do the same thing than the advanced students (63%) (item 20, Appendix 5.4, by reversing the findings).

The beginners indicated that their reading, learning, and problem-solving skills were much better developed with SP1 via CTM and with SP2 via TTM (items 16, 18, and 9, respectively, Appendix 5.3), a difference which was also confirmed by their performance scores of above 50% in Tasks 1–4 (see Table 5.4 in section 5.2). This difference revealed their different reactions and attitudes towards each passage separately. SP1 was about autism and SP2 was about dyslexia. The participants of this study, who were first year university students, were familiar with dyslexia from having studied it in their first semester, whereas autism was a subject that they were to be taught in their second year; this might have been the reason for them finding the second passage easier. Another explanation might be that the target vocabulary of the first passage was somehow harder than that of the second passage.

Given that SP1 was about autism and SP2 about dyslexia, I conclude that the beginner students preferred CTM in order to work out the meaning of a more difficult passage, such as SP1, whereas they preferred TTM to work out a less difficult passage, such as SP2. From this, I infer that beginner students trusted CTM more than TTM when they were confronted with a difficult passage. Furthermore, they indicated that they felt more confident about their productive skills with CTM (items 6, 20, and 23, Appendix 5.3). This finding agrees with that of Sah (2015) and disagrees with that of Kennedy and Miceli (2010), who considered corpus concordancing tasks as productive and rewarding only for intermediate and advanced learners.

As shown in section 6.4, the beginner students reported more challenging aspects of TTM than of CTM; however, they provided many more reasons why CTM motivated them to learn than they did for TTM. One of these reasons was how CTM had enabled to handle relevant tasks in the future. In terms of discovering different meanings of the given words (item 35, Appendix 5.3) they showed the same level of indications for CTM as the advanced learners (79%), which shows the beginner students' awareness of CTM's great potential to help them discover the different meanings of the assigned words.

As was also shown in section 6.4, the beginners indicated that CTM's convenience was their leading reason for recommending it to a friend. A very strong majority of them (89%) indicated that the CTM learning materials were more convenient than the TTM ones (63%) (item 19, Appendix 5.3). As was also shown in section 6.4, for the beginner level students, the effectiveness of CTM was the second most frequent reason for them recommending it to friends. This concurs with the finding in item 8 (Appendix 5.4), where the beginners took the lead (89%) in indicating the CTM lessons as more effective than the lessons they used to have. In addition, a large proportion of beginners (84%) indicated that the TC provided content that exactly fitted their needs (item 2, Appendix 5.4).

According to the findings in item 5 (Appendix 5.3), a great number of beginners (95%) felt that CTM tasks were more helpful for learning meaning of unknown vocabulary. It must be further noted that the beginners had very high scores in both methods in that item

(CTM 95%, TTM 74%), closely following the advanced students (CTM 100%, TTM 42%), and leaving the intermediate students far behind (CTM 82%, TTM 45%). More specific findings about vocabulary were obtained in item 13 (Appendix 5.3), where the dominant majority of the beginners indicated that CTM (89%) was more helpful than TTM (74%) for learning the usage of vocabulary and in item 14 (Appendix 5.3), where a wide majority of the beginners (89%) prioritized CTM because they felt that it helped them understand new words introduced in the lesson the most. It is worth noting, however, that the beginner students (79%) showed greater approval of TTM in general than all the other levels of students (advanced 63% and intermediate 73%), which means that the beginners benefited from both methods, but mostly from CTM. As with the advanced students, the great proportion of my beginner students indicated that the CTM tasks (79%) required critical thinking which made their learning easier than the TTM tasks did (74%); however, the number of students indicating that both methods required critical thinking was very high (item 2, Appendix 5.3). In terms of the development of problem-solving skills, the beginners rated the two teaching methods almost equally (CTM 63%, TTM 58%), but the other two student levels placed CTM much higher (advanced 89%, intermediate 91%) in item 9 (Appendix 5.3).

Overall, in the eyes of the beginner students, CTM (89%) made learning more interesting than TTM (79%) (item 30, Appendix 5.3). They appeared even more interested than the advanced and intermediate students. Apart from their interest in working with CTM, a high proportion of the beginners (74%) indicated that they enjoyed working with the passages using CTM (item 31, Appendix 5.3). However, while beginner students indicated that they found CTM interesting and enjoyable, this was not the most popular reason for them liking it or recommending it to other students. Instead, as discussed in section 6.4, the beginners' most popular reasons were the number of concordance lines provided and the convenience of the method. Furthermore, the CTM lesson was indicated as being very satisfactory by the majority of the beginner students (95%), as compared to the other two student levels (advanced 89%, intermediate 82%) (item 8, Appendix 5.3). A large number of the beginners (84%) indicated some balance between CTM and TTM as a good aid to learning with respect to the way the lesson was taught (item 3, Appendix 5.3) and with respect to their wish to participate in other similar lessons (74%) (item 12, Appendix 5.3).

Last but not least, this study showed that the biggest majority of the beginner level students (95%) felt good about the idea of a new syllabus which would include the Thessaly Corpus (item 3, Appendix 5.4). In the next section, I will describe areas of difficulty experienced by all the students of my study.

7.3 Key student difficulties with CTM

This study revealed various key difficulties experienced by all learners. As was shown in section 6.3, the main reasons students provided for being challenged by CTM included dealing with multiple sample sentences, word meanings, and problems through computer searches. However, the number of concordance lines was the top reason for them finding CTM interesting. This was also evident in item 30 (Appendix 5.3), where the largest proportion of students indicated that the CTM lesson (85%) made learning more interesting than the TTM lesson (67%). Furthermore, as was shown in section 6.3, the students of this study indirectly expressed their worry that CTM might become tiring without entirely rejecting it. Fatigue or boredom can sometimes be an issue in CTM, although, as this research identifies, it is largely an issue in TTM, as was shown in section 6.4 where students provided reasons for liking TTM the least.

What is noteworthy is that when students worked with SP2, no significant differences were found in comparing the students' indications across the two teaching methods involved in this study (CTM 73% vs. TTM 70%) (item 31, Appendix 5.3). This means that my students liked working with SP2 using either CTM or TTM, whereas they strongly preferred CTM when working with SP1 (CTM 83% vs. TTM 37%). I found analogous differences in item 6 (Appendix 5.3), where students indicated their confidence in their abilities as they used the passages across teaching methods (CTM 75% vs. TTM 45%). Working with SP1 via CTM made the students feel far more confident in their abilities than working with it via TTM, whereas working with SP2 made no substantial differences in their confidence across the methods. This variation between method preferences across SP1 and SP2 converges with the mean student performance by type of passage (SP1, SP2), which is presented in section

5.2 (Table 5.3) and with the student performance scores of above 50% in Tasks 1–4 presented in section 5.2 (Table 5.4). I argue that although SP1 was, from a practical standpoint, more difficult for my students than SP2, all student levels prioritized or preferred CTM for working with it. This remarkable finding about SP1 was also confirmed in item 18 (Appendix 5.3), where 29 out of 30 students indicated CTM as a better method for improving their learning skills, whereas only 16 out of 30 students indicated TTM as a better method for the same purpose (see the SP1 column). The total student preference across type of method and type of passage indicated a great number of students in favor of CTM over TTM.

From a practical point of view, I conclude that the context that appeared in the passages when students used the TTM tasks did not help my students understand the meaning of the target vocabulary whereas the concordance lines provided to students during the CTM tasks were helpful enough for the students to comprehend the meaning of unknown words and, as a result, resulted in faster and more effective responses to the students' lexical requests; this is supported by their strong indications about the TC (84%) in item 18 (Appendix 5.4). However, a key difficulty emerged from the findings of this study. All student levels (70%) indicated that they found it difficult to handle the cut-off sentences in the concordance output (item 17, Appendix 5.4). This led me to conclude that it was not the number of concordance lines that troubled most of the students, but the shortened length of those lines. Finally, this study found that there were variations in the success of Task 4, where all the students had low scores (see Table 5.4 in section 5.2). This shows that, in Task 4, CTM was not more effective than TTM and vice versa. This variation should be taken into account for future teaching decisions concerning this type of task, as will be explained in section 7.4. Next, I will describe specific difficulties experienced by the advanced students of this study.

7.3.1 Advanced students

This study revealed some key difficulties for the advanced students. The large number of concordance lines and word meanings offered in CTM were identified by advanced students

as the most challenging aspects of CTM, although the total number of reasons they provided for that difficulty was far less than the number of reasons they provided for liking and being motivated by CTM, and recommending it to others (section 6.4).

It appeared that Task 4 was a difficult task for the advanced students across both CTM and TTM because only four out of nineteen advanced students achieved more than 50% of success (see Table 5.4 in section 5.2). Despite their low performance, more advanced students performed better with SP1 via CTM and with SP2 via TTM. As was previously mentioned, TTM worked a little better on SP2 and CTM worked much better on SP1. The advanced students' difficulty with Task 4 across teaching method and type of passage was also confirmed by their responses (item 34, Appendix 5.3), where the students generally indicated more difficulty with CTM (53%) than with TTM (37%), However, the differences between the two methods across SP1 and SP2 were not substantial. Differences between the two methods with regard to Task 4 were also shown in item 35 (Appendix 5.3), where 79% of the advanced students indicated that they could better discover the different meanings of the given word via CTM than with TTM (74%), and in item 28 (Appendix 5.3), where more advanced students (42%) indicated that they would not feel confident enough to handle similar tasks in the future using TTM than CTM (26%). The low number of students asserting this across the teaching methods reveals that there was some general difficulty in performing the tasks of this study, but that there was better confidence with CTM.

Out of the 19 advanced students, 11 indicated some difficulty in using the TC due to unfamiliar vocabulary within the concordance lines (item 15, Appendix 5.4). Similarly, the advanced students (68%) had some difficulty in using the TC due to cut-off sentences in the concordance output, as they indicated in item 17 (Appendix 5.4). Finally, an overwhelming majority of them (89%) indicated that the TC should be used in learning vocabulary (item 5, Appendix 5.4), which was also confirmed by the high motivational value they ascribed to it (section 5.2, Table 5.4). Next, I will describe specific difficulties experienced by the intermediate students of this study.

7.3.2 Intermediate students

This study also revealed some key difficulties for the intermediate level students. As was shown in section 6.4, they identified the number of concordance lines offered in the CTM as its most difficult aspect; however, instead of this being their principal reason for not liking it, it was actually the major reason for them liking it and the second most popular reason for them being motivated by it.

A smaller proportion of intermediate students (27%) enjoyed making sentences in Task 3 via CTM than those from the other two ability levels (item 33, Appendix 5.3). This finding agrees with that of Kennedy and Miceli (2010) and disagrees with that of Chang and Kuo (2011), who found that intermediate level students had high motivation and were pleased with the cognitively demanding corpus concordancing tasks.

Almost half the intermediate students appeared to have low motivation in Task 4 (CTM vs. online dictionary), since they found it hard to deal with that task using either method (CTM 41% vs. TTM 36%). A little more than half the total sample of students (53%) preferred CTM for this task and a little less than half of them preferred TTM (45%) (item 34, Appendix 5.3). I also found that exactly half the sample of intermediate students (50%) did not feel confident enough to handle similar tasks in the future by using CTM and the other half (50%) did not feel confident about using TTM either (item 28, Appendix 5.3). It seems that they were not certain which of the two methods would provide them with more confidence in performing similar tasks in the future.

In terms of the type of passage and the four linguistic tasks of this study, the intermediate students encountered difficulties with SP1 using CTM, but they performed less well using TTM for the same passage (see Table 5.4 in section 5.2). With regard to SP2, the difference between CTM and TTM was not that great, but the general inclination was towards CTM with variations according to task type. This was also partially confirmed by

their success of above 50% in Task 4, which was marginally better than the advanced students' performance and far better than that of the beginners (see Table 5.4 in section 5.2).

This study found that a smaller majority of intermediate students needed more help to totally understand words dealt with in the CTM lesson (82%) while a slightly higher number of them needed more help to understand words dealt with in the TTM lesson (86%) (item 4, Appendix 5.3). This shows that while they felt they needed slightly more help with TTM than with CTM, they still required more teacher support in general. This difficulty in their understanding word meanings in CTM was also shown in their responses in section 6.4, where they indicated that the presence of multiple sample sentences and word meanings was the primary reason for them being challenged by CTM. This also converges with the finding in item 15 (Appendix 5.4), where a high proportion of intermediate students (73%) indicated they had some difficulty in using the TC due to unfamiliar vocabulary on the concordance lines and with the finding that the same proportion (73%) of them had some difficulty in using the TC due to cut-off sentences in the concordance output (item 17, Appendix 5.4). However, far less than half the sample of intermediate students (32%) indicated that the number of sentences in the TC was not a difficulty (item 20, Appendix 5.4) and that they felt more confident with CTM (64%) than with TTM (36%) in their abilities to use the assigned passage (item 6, Appendix 5.3). Next, I will describe specific difficulties experienced by the beginner students of this study.

7.3.3 Beginner students

This study also revealed some key difficulties for the beginner level students. As was shown in section 5.2, the beginners performed better with CTM than with TTM, but they never performed better than the advanced and intermediate students while using CTM. This finding is in disagreement with Momeni (2015), who found that corpus concordancing enhanced the vocabulary learning of lower language ability students more than that of the advanced students. It also disagrees with Chan and Liou's (2005) finding that the low-level group made much more improvement than the high-level group after online concordancing instruction.

One of the key difficulties for the beginner students was their low performance scores in Task 4. The total sample of beginners had below 50% of success with CTM in Task 4, while only three out of nineteen beginner participants attained above 50% of success with TTM (see Table 5.4 in section 5.2). Although their performance scores were generally high across teaching methods and task types, they performed better with SP2 using either learning method than with SP1. It is worth noting that in Tasks 1, 2, and 3, no beginner achieved above 50% of success with SP1 using TTM. However, they performed a lot better with SP2 using TTM. In Tasks 1 and 3, they performed better than the intermediate students and in Task 1 with SP2, they performed equally well.

This study also found that the main difficulty indicated by beginners was the computer searches and problems (section 6.4), although computer unfamiliarity was not one of their most popular reasons for not liking CTM (as also shown in section 6.4). Although this difficulty was not faced by all beginner students, it should be addressed by a teacher, as will be explained in section 7.4. A further difficulty indicated by a majority of beginners (68%) was cut-off sentences (item 17, Appendix 5.4). This finding concurs with Rapti (2010), who highlighted the problem of "separate arrays of concordance lines" for beginner students when they perform corpus concordancing activities.

The findings of this study showed that the vast majority of beginners (89%) felt that they had some difficulty in using the TC due to unfamiliar vocabulary in the concordance lines (item 15, Appendix 5.4). This finding was in line with Gardner (2007) and Sun (2003), who recognized that lower level students might be intimidated when having to use corpus data due to their less extensive vocabularies. Nearly half the sample of beginner students (53%) indicated that they had enjoyed filling in the sentences in Task 2 with CTM (item 7, Appendix 5.3), though they were less in number than the other two levels (advanced 68%, intermediate 55%). A striking finding here is that they enjoyed performing Task 2 with SP1 using CTM (7 out of 10) and the same task with SP2 using TTM (7 out of 10). This reveals that the beginners preferred CTM in order to deal with a more difficult passage such as SP1.

More than half the number of beginners (58%) further indicated that they enjoyed making sentences in Task 3 using CTM (item 33, Appendix 5.3), but 47% of them indicated that they enjoyed using TTM in Task 3, compared to the other student types (advanced 26%, intermediate 36%). It is striking again that the beginners preferred doing Task 3 with SP1 using CTM and the same task with SP2 using TTM, and that the same thing happened with items 23, 28, and 34 (Appendix 5.3), thus reaffirming my claim that with a difficult passage, CTM is more useful than TTM.

A further difficulty experienced by a little more than half the beginners almost equally across all the learning methods was that they did not feel confident enough to handle similar tasks in the future (item 28, Appendix 5.3), although TTM took a close lead over CTM (TTM 68% vs. CTM 63%). I also found that a greater proportion of the beginners (79%) felt the need to ask for synonyms of some unknown words when using TTM and a slightly smaller proportion (74%) felt that need when using CTM (item 32, Appendix 5.3). From a practical standpoint, TTM tasks made students need more help through teacher provision of synonyms of unknown words than CTM did. The same applied to each of the other student types. This shows that most of my beginner students felt more autonomous in understanding vocabulary while using CTM because 74% of them stated they needed less help with the lesson when using CTM.

My study found that a substantial proportion of beginners (68%) suggested that the TC should be used in learning vocabulary (item 5, Appendix 5.4), ascribing high motivational value to it (section 5.2, Table 5.4). While this proportion is much smaller than those of the other two student types (advanced 89%, intermediate 91%), it suggests that they did wish to use the TC in learning vocabulary, but that they were more cautious than the other student levels. The same 74% of beginners who said that CTM improved their reading skills also said that TTM improved their reading skills (item 16, Appendix 5.3); however, the overall preference across the student ability levels with regard to improvement of reading skills was for CTM (82%) rather than for TTM (70%).

According to the findings of my study, a high proportion of beginners (79%) indicated that the lesson made them much more productive when using TTM and a slightly smaller proportion (74%) indicated that they preferred CTM (item 20, Appendix 5.3). However, the proportion of beginners who preferred CTM was fairly large for such a new learning method. In their response to item 33 (Appendix 5.3), more beginners found CTM (58%) more enjoyable than TTM (47%) for producing sentences in Task 3. Also, according to my finding in item 23 (Appendix 5.3), 79% of the beginner students indicated that they felt much more confident to produce relevant sentences on their own in the future with CTM and 58% with TTM, thus contradicting my finding in item 20 (Appendix 5.3). This apparent contradiction is reconciled if we take into account their low performance in Task 3 (making sentences) on one hand and their general high motivation with the CTM approach on the other. It is worth noting that an equal number of advanced students indicated the same and that the students favoring CTM were more than those favoring TTM. Slightly more than half the beginners (58%) indicated that the CTM lesson did not meet their learning needs (item 24, Appendix 5.3), which could be explained by their initial perception that they would not do well with a new method such as CTM – as has been proposed in previous research (Wu, 2015). Alternatively, they might have simply felt or guessed that they had not performed well in Tasks 1–4 and had therefore concluded that the CTM lesson did not meet their learning needs. However, this finding does not concur with the performance findings about my beginners mentioned earlier, whose performance in CTM proved better than in TTM. Finally, a high proportion of beginners (79%) indicated that they would recommend TTM to others while a slightly smaller proportion of them (74%) said that they would recommend CTM to others (item 26, Appendix 5.3). However, the difference was insubstantial and, as shown in section 6.4, the beginner students did not provide any reasons for recommending TTM to others.

In the next section, I will suggest a teaching unit to be used in similar learning settings based on the benefits and difficulties of CTM described in sections 7.2 and 7.3. The teaching unit is non-exhaustive but it could be adopted by teachers with local variations.

7.4 Suggested teaching unit based on overall findings

Drawing on the above described benefits and difficulties my students experienced in CTM and TTM, I will offer an indicative but non-exhaustive exemplary teaching unit. This unit would consist of the following components (A, B, C, D, and E):

A. Electronic corpus concordancing training program

In this component, students are introduced to the corpus concordancing software so that they are ready to participate in CTM lessons in the future without having problems how to operate the software and how to make the most of the capabilities of it. Computer searches that can be difficult in CTM as reported by beginner students (section 7.3), should be tackled by more student training in using the corpus concordancing software. Therefore, any teaching unit using CTM must be preceded by extensive training on electronic corpus concordancing until a teacher ascertains that even the weakest student understands how the software works. It takes time but doing so addresses anticipated problems (watch sample training session on the attached DVD or read its transcript on the attached CD).

Session 1
1.1 Teaching students how the software works in class (no less than 3 hours)
1.2 Assigning students homework tasks on software functioning (optional)
Session 2
2.1 Teaching students how to investigate meanings of words (2-3 hours)
2.2 Assigning students homework tasks investigating meaning of words
Note: Although my main research did not indicate any need for adjusting the software to a maximum number of search hits because the majority of the student-subjects were happy with the number of concordance lines, I would advise that an optimum number of search hits should be set on an optional basis and only for training purposes. My advice is based on the training session of my pilot study where some students expressed their need for a controlled

number of search hits. Also, I suggest that concordance lines of at least 90 characters should be assigned to students as shown in section 7.2.

The format of Component A with all its sessions is based on

(a) the realization that students needed more time in order to become familiar with the CTM software (section 7.3),
(b) the finding that students needed more context around the KWIC (section 7.2),
(c) recommendation from the teacher that students should practice the software at home,
(d) pilot study observations about maximum number of search hits for training purposes only.

Therefore, an initially controlled but gradually extended number of search hits are suggested. The necessity for such action was realized at the initial corpus concordancing training session during the pilot study in students' oral responses in the training video as described in Chapter 4 (watch attached video to this thesis).

Student responses in the training video were particularly useful in ascertaining how many concordance lines students were able to analyze during training. Beginner level student 2 (Eleni) stated that out of 317 concordance lines with the target word she felt comfortable examining some 30 to 35 concordance lines in order for her to identify the meaning of the target word (please refer to the video at 00:55:50 and at 1:14:30). In the same video, beginner level student 1 (Charoun) observed that he needed more than 20 concordance lines in order for him to understand the meaning of the target word and that he needed more time to understand that new technology. He noted that, although the process of exploring meaning was difficult for him, he felt it was better than simply resorting to a dictionary, (please see the video at 1:02:32 and at 1:22:05). Similarly, intermediate level student 2 (Efstratia) stated that the software was a little impersonal and that she needed more time with the teacher-instructor to learn its potential (watch video at 1:17:04). She also felt comfortable studying 15-20 concordance lines to understand the meaning of a target word (watch video at

00:42:50). Finally, intermediate level student 1 (Alexandra) noted that she felt comfortable studying 30 concordance lines so as to understand a target word's meaning (00:40:33). The advanced students generally had no problem with the amount of concordance lines. This study is not the only one which accepts the necessity for more CTM training needed in advance. In a similar corpus-based study, Charles (2012) obtained student responses which expressed difficulty in finding answers to their own language queries when using corpus concordancing. Therefore, she recognizes that the fact "her students had a maximum of only 6 h[ours] of corpus instruction underlines the amount of practice needed and the difficulty of learning how to formulate useful queries and interpret corpus data" (Charles 2012: 98) in line with previous research described in section 7.2. My study devoted insufficient time duration for the training sessions, too, as was shown in section 7.3, hence my decision to assign more time for students to get used to working on the TC adequately.

B. Reading comprehension task (Task 1)

This task asks students to use an electronic corpus concordancer and the Thessaly Corpus in order to explore the meaning(s) of target vocabulary in an administered reading passage relevant to their field of study. The task examines the ability of students to discover meanings of unknown words by using corpus concordancing.

B1. Students read whole text and identify target vocabulary that is underlined in the passage. The length of text depends on availability of time but generally passages (or articles) should be administered in whole because students need to have a coherent text in order to make the most of it.

B2. Students use CTM to work out the meaning of target words in English or in their mother tongue.

Component B is based on findings about Task 1 and about 'unknown vocabulary' drawn from the questionnaire items. Performance was overall better with CTM and, despite the fact that fatigue was reported as a challenging element of that method, it was not proved

that the fatigue was due to the length of SP1 or SP2. To ascertain this via a corpus style analysis, I typed the search string *tir** in MP2.2 concordancer to retrieve derivatives of *tire* such as *tiring, tired*, etc. My purpose was to investigate the deeper reason why fatigue was reported. I found that fatigue was never attributed to length of passage but primarily to eye strain (6 of 17 concordance lines), too many sentences (4 of 17 concordance lines), and undefined reasons (3 of 17), whereas the rest of the concordance lines (4 of 17) were positive usually having the word *not* to the immediate left of the KWIC (see the 17 concordance lines of the search string *tir** on the attached CD). I did not decide to reduce the set number of concordance lines in the software because multiplicity of concordance lines was indicated as an asset by beginners (section 7.2).

C. Gap-filling task (Task 2)

This task asks students to fill in the gaps of separate sentences in order to improve their learning of vocabulary through context. This exercise focuses also on lemmas so as to improve the use of their inflected forms. Its duration depends on time availability.

C1. Students fill in the gaps using given words to choose from after investigating their meaning in the electronic corpus concordancer provided by teacher.

C2. After filling in all the gaps, students should be given corpus exercises asking them to distinguish between inflections. If they still have not thought out and written correct inflected forms of some target words, they can check with the aid of their teacher if they have filled in the correct inflected forms of the lemmas offered in the first place. Teacher aid should be limited to only confirm correct answers orally or challenge the wrong answers so that students try again.
Note: It is suggested that dictionaries not be used during this task because students have already found lots of information on the target vocabulary in task B.

The format of Component C is derived primarily from the finding that students benefitted more from CTM than from TTM in order to complete the fill-in-the-gap task. As

shown in section 7.2, students displayed better performance in that type of task when using CTM and they felt confident with CTM in handling Task 2. Secondly, Component C is developed to focus on the inflected forms of the lemmas, with particular focus on the different meanings of the same lemmas. For example, while students were successful in finding the correct word to fill the gap (such as the word 'defy'), they sometimes struggled to produce the accurate inflected form (such as "defies"). By using fill-in-the-gap exercises utilizing different forms of the same lemma, Component C increases students' awareness of this phenomenon.

D. Productive task (Task 3)

This task exploits the students' receptive vocabulary from the two previous tasks and develops students' ability to use individual words correctly when they write full sentences to acquire productive vocabulary. This is done by asking them to consult concordance lines that contain target words and produce their own sentences by using the target words in them.

D1. Students consult concordance lines to make their own sentences using the unknown vocabulary assigned in the previous tasks by their teacher.

D2. Students write their sentences alone (or in pairs). With the help of their teacher, they check if they have written their sentences in an accurate way and correct accordingly.
Note: In this task, it is suggested that dictionaries not be used because the students already have an impression of what the target words may mean from when they were working on them in Tasks 1 and 2 and because most of the findings in this study indicated that advanced and intermediate students felt they were more productive by performing this type of task with CTM. As a result, advanced and intermediate students should only have access to concordance lines. In the case of beginner students, I suggest that concordance lines should primarily be used but if the beginners find it hard to produce sentences with the assigned words, a monolingual dictionary should be allowed or teacher help should be administered in the form of synonyms for the target words. The teacher must discourage students from

copying concordance lines verbatim from the program. Sentences thought out by students can be provided in written or oral form according to teaching target.

Component D1 emerges from the finding that CTM offered more help than TTM to the students in their effort to produce own sentences as also mentioned above. As demonstrated in section 7.2, students produced more of their own correct sentences when using CTM rather than when using TTM. Students reported that CTM was useful when creating their own sentences as shown in their responses to the open-ended questionnaire, their indications in the Likert scale questionnaire, and when commenting on CTM in the relevant training video (watch the attached DVD or read its transcript on the attached CD). In the case of beginners, because my finding in one item described in section 7.3 indicated that TTM made the beginners feel slightly more productive, a teacher may allow the use of a monolingual dictionary. The option of allowing pairs of students to work together did not stem directly from the findings of this study but from previous research (Ozdemir, 2014; Tekin, 2015) presented in section 2.4.

Component D2 is based on my decision in section 3.2 to define ‘correct sentences’ as (a) correct in terms of grammar and syntax and (b) semantically plausible. Component D is grounded on my observation in both my pilot and main studies that students were able to produce semantically effective sentences with the help of CTM but the final product was sometimes syntactically or grammatically inaccurate. For example, while searching the word ‘provision’ in CTM and trying to produce their own sentence, a student wrote “in our camp they will come provisions.” While that sentence is semantically closer to the Greek syntax because it conveys the meaning that provisions will be carried to the camp and therefore indicates that the student understood the meaning of the word, it is syntactically problematic according to English syntax because although it seems it does not violate the common order of subject–verb–object (SVO) in a sentence structure where the subject comes first, the verb second, and the object third, the student replaces “provisions” with “they” as the subject of the sentence. To accept a student sentence as correct, therefore, I would expect sentences like “our school will be supplied with provisions” or “provisions will be supplied to our school” would be totally correct. Component D addresses this by allowing students to check if they

have written their sentences not only with the right word in terms of meaning but also with the correct inflected form of that word in terms of syntax.

E. Multiple meanings task (Task 4)

This task aims to help students practice determining the various meanings of unknown words in context.

E1. Students consult concordance lines that include the assigned target words to guess different meanings of the assigned words. If they do not manage to guess the meaning of all the target words, the teacher gives them concordance lines of the target words that were not guessed (80-90 characters around KWIC). If they still do not guess the meanings, the teacher gives them the same number of concordance lines but with double the number of characters (160 -180).

E2. Students compare E1 findings of meanings with those in a monolingual dictionary in order to confirm findings and/or add extra meanings (as part of a mixed-method approach).

Component E is based primarily on my finding in section 7.3 that CTM was slightly more helpful than TTM in my students' effort to locate different meanings or uses of single unknown words. For example, when looking up the adjective 'dorsal' in the online dictionary (Appendix 3.6, Task 4), students found only one use, whereas when looking it up in the corpus they found multiple uses of it and, as a result, they developed a broader picture of its use in discourse with more than one meaning. Similarly, in the case of the noun 'caveat' (Appendix 3.1, Task 4) the online dictionary provided students with only two uses whereas the corpus offered far more uses of that word. My decision to gradually increase the number of characters around KWIC stems from my finding described in section 7.2 that students needed longer concordance lines no matter the number of the lines supplied.

Secondly, Component E stems from my findings described in section 7.3 and the ones described in my pilot study chapter (Chapter 4). According to those findings, there were

variations in the success of Task 4 where the students had low scores meaning that sometimes CTM proved more useful and other times TTM did. As a result, I recommended that students should use concordance lines and a monolingual dictionary together. This decision is based on the observation in both my pilot and main studies that concordance lines and monolingual dictionaries could function together in a fruitful way by complementing one another. For example, in the case of the unknown words 'provision' (Appendix 3.2, Task 4) and 'pervasive,' (Appendix 3.2, Task 4) the online dictionary offered equal or even better help because its examples were more concentrated and succinct whereas the relevant concordance lines happened to be more general and helped less than the dictionary. The approach of combining corpus concordancing with traditional materials (e.g. dictionaries) is also in line with Chambers, 2005; Balunda, 2009; Marza, 2014; Varley, 2009; Chambers *et al.*2011; and Römer, 2011.

7.5 Conclusion

In this chapter, I described points of convergence between my quantitative and qualitative findings through key benefits and difficulties my students experienced when using CTM. I also suggested an exemplary teaching unit based on findings.

This study showed that a substantial number of hours (no less than three) should be devoted to training students to operate the corpus concordancing program. If training is sufficient, then any student of any ability level might benefit. Multiple concordance lines should be allowed by the teacher when students use CTM but the length of concordance lines should be increased up to no less than 90 characters around KWIC. This approach is recommended because it was shown in this study that all students found the initially set number of characters insufficient.

My research demonstrates that multiple meanings of target words can be explored via CTM, independent of the teacher and dictionaries and in line with previous research that highlighted the element of exploration beyond the traditional way in corpus teaching (Chang

and Kuo, 2011; Marza, 2014; Benavides, 2015; Tekin, 2015). However, as this study showed, it is good practice to confirm student definitions of words with a monolingual dictionary, especially when the concordance lines offered are too general and potentially unhelpful enough and the student might find it difficult to trace multiple meanings of a target word as also pinpointed by previous research (Mansoory and Jafarpour, 2014; Sah, 2015; Benavides, 2015; Zohairy, 2015; Tekin, 2015; Chen *et al.* 2015).

Dictionary use should be carefully considered when students have to produce their own sentences by searching target words. I argue that they should be discouraged to use dictionaries but encouraged to make the most of concordance lines. One of my key findings when examining student responses to the open-ended survey was that most students indicated that they found the program more useful than the passages when asked to produce new sentences. However, it is crucial that students are discouraged from copying whole concordance lines verbatim. This entails checking, on the part of teacher, to see if any student was seduced into picking the easy way out.

My research finally demonstrates that teaching English at university level via corpus concordancing meets the competency criteria of “critical thinking” and “student autonomy” defined by BALEAP (2008: 3) because all types of students in this study developed their critical skills and autonomy to a greater extent by utilizing CTM than by TTM, as was shown in sections 7.2 and 7.3. The final chapter (Chapter 8) will present generalizable features of the suggested approach as well as unforeseen features of this research. It will finally offer ideas for relevant future work.

CHAPTER 8 Conclusion

8.1 Introduction

The final chapter of this thesis describes the major findings of this research in section 8.2 and generalizable features of my suggested teaching approach in section 8.3. Unforeseen features and suggested future research are offered in section 8.4 while some further comments are made in section 8.5.

8.2 Major findings

The following major findings emerged from this thesis. CTM proved more effective than TTM in the performance tasks at all levels of student ability, which means that teachers of English at university level can exploit CTM to help students improve their vocabulary acquisition strategies. Student general motivation is a mediator in terms of the relationship between the method and student performance.

Firstly, the introduction of CTM in the syllabus of university students offers more effective learning opportunities and experiences to them when dealing with specialized unknown vocabulary in texts relevant to their field of study.

Second, CTM generally offers better learning experiences to students of all ability levels with some adaptations described in section 5.8. In spite of the fact that the beginners' performance scores were lower than those of the other two ability levels, their motivation ratings were higher compared to the performance scores and usually similar to the motivation ratings of the other two ability levels. Thus, despite their having a hard time, they do not seem to be discouraged. This allows a teacher at university level to introduce CTM to even beginner level students.

Third, CTM motivates university students more effectively than the existing traditional learning method; a university teacher may wish to exploit the higher potential of CTM to interest students to enhance the motivational level of his/her classroom. This study showed that CTM can open new teaching and learning horizons in university contexts in Greece and other countries. Utilization of corpus concordancing tools to cover local learning needs can make learning different, effective, and interesting. CTM may also provide an opportunity for teachers and students at university level to create their own small and flexible corpora to suit their particular subject-matter needs.

8.3 Generalizable features of the suggested approach

The recommended CTM approach contains features that can be generalized as an approach that can be applied to other teaching contexts in Greece and in relevant teaching settings of other countries, namely universities and/or colleges which have English language institutes or departments teaching English for Academic/Specific Purposes (EAP/ESP), English as a Foreign/Second Language (EFL/ESL) or English to Speakers of Other Languages (ESOL). This section describes components of the suggested teaching unit offered in section 7.4 which can be generalized and explains which components cannot be generalized but can be adapted according to local circumstances and/or needs.

Component A, the corpus concordancing training program, as a whole, can be generalized across various teaching settings by maintaining the suggested structure of sessions 1 and 2. However, both the duration of the training program and the content of the corpus in use cannot be generalized and must be adapted to the local context. In this study, the Thessaly Corpus (TC) was constructed and used. It consists of three portions: (a) 10 million words of general English, (b) 10 million words of general-academic English, and (c) 10 million words of English about Special Education, Disabilities, Medicine, Impairments, etc., because the students of the present research study are to become teachers to pupils with physical and intellectual disabilities. Although portions (a) and (b) of the TC can remain in any other teaching context, portion (c) must be adapted to the discipline that the particular

students study. For example, if there is a case in which students study history and archaeology, the teacher must collect a corpus of texts compiled of articles from those academic fields. The local corpus will therefore be representative of the specific teaching and learning situation without having to change portions (a) and (b). If the same teacher of English teaches in more than one department or school of the same academic institution, they can keep the same corpus and only modify portion (c) accordingly.

Component B, the reading comprehension task, can be generalized across various teaching contexts following the structure presented in stages B1 and B2. The features of component B that will be adapted are (a) the content of the text to be read, which must be relevant to the discipline of the students being taught, (b) the duration of activity and length of text, and (c) the decision of the particular teacher according to local circumstances to combine CTM and TTM or teach using CTM only.

Component C, the gap-filling exercise, can be generalized across teaching and learning settings by using stages C1 and C2 as described in the suggested teaching unit. Any adaptations relate only to local circumstances, such as availability of time, duration, the number of words to be inserted in the blanks, etc.

Component D, the productive task, can be generalized by using stages D1 and D2. Adaptations may involve (a) having students write the sentences or produce them orally, and (b) allowing them to work in pairs due to the tough nature of the activity itself. In D2, teachers must check to see whether students are copying sentences from concordance lines verbatim. This must be discouraged and students must be cautioned against doing so in the first place. What must be encouraged is paraphrasing already existing concordance lines and original, student-produced sentences containing the investigated word(s).

Component E, the multiple meanings task, can be generalized by following stages E1 and E2. However, phase E2 is open to adaptations contingent upon (a) the extent to which the particular teacher wishes to add monolingual dictionary or teacher intervention, and (b) the local teaching and learning targets as affected by the ability level of students, availability of dictionaries, other technicalities, etc.

8.4 Unforeseen features and suggested future work

After the end of this research, there are some features that could not have been foreseen in the first place merely because previous teaching experience had led to some indicative conclusions or certain expectations. This section will present some prior assumptions made by the researcher and actual student responses in section 8.4.1 and some recommendations for relevant future study will be stated in section 8.4.2.

8.4.1 Prior teaching assumptions and subsequent outcomes

There had been prior assumptions in the present research about possible outcomes and reactions by my students. I had thought the introductory program training sessions would be sufficient in terms of time management, difficulty, and adaptability; however, the training sessions offered before the main study did not prove to be sufficient for all participating students because few students had unforeseen difficulties managing the software.

I had thought the texts used in this study (SP1, SP2) would make the difference between CTM and TTM clear; however, only the first text (SP1) made the difference between methods clear. Student responses to the second text (SP2) did not exhibit the expected superiority of CTM. While the general tendency remains in favor of CTM, this led to the recognition that more types of text, particularly passages whose content is totally unknown to students, are needed in order for safer conclusions to be drawn.

When formulating the second hypothesis (the effect of teaching method on student performance would vary across ability levels), I thought the beginner level students would lack the competitiveness advanced and intermediate students usually exhibit in such classroom situations, and, as a result, struggle to cope; however; all types of students benefitted to some extent from CTM. When formulating the third hypothesis (to what extent motivation would moderate performance), I thought that the participants would display

relatively low levels of motivation because the sample of the study comprised mixed ability students; I assumed that intermediate and beginner level students would not be motivated enough due to language barriers. However, the questionnaire and survey findings proved that there were high levels of motivation among all levels of student ability.

I initially thought that not all sixty students of this study would like CTM; however, according to the qualitative findings, all 60 students expressed preference for CTM for its convenience and ease. I initially expected that intermediate and beginner ability level students would state that they liked the variety of concordance lines fewer times than the advanced students; however, they indicated that they liked the variety of concordance lines more times 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 they dealt with CTM so they had a positive attitude towards the latter method, whereas advanced students might have felt more confident with either teaching method and more reserved.

It was initially expected that the students would have no problem understanding the OES questions; however, the adjective ‘challenging’ in Question 3 caused slight confusion. The problem should have been observed in the pilot study so as to be avoided in the main study. However, two reasons are likely to have been involved in this case, (a) the student sample of the pilot study was too small to allow observation of the problem, and (b) it was not predicted that the relevant question could cause confusion in the main study and, as a result, was not focused on.

In Question 5 of the open-ended survey, I had assumed that students would offer reasons why they would recommend CTM and why they would recommend TTM; instead, while all students had various reasons for recommending CTM, only three students who recommended TTM provided only one reason for that recommendation.

8.4.2 Suggested future work

Ideas about relevant and promising future work emerged during the course of this study. One promising idea is gathering digital data from students while they work on corpus concordancing programs. Tracking exactly what is going on in the computer while a student uses corpus concordancing could be useful to linguists: having insight into how students react and respond to or handle the electronic corpus at hand might help a CTM practitioner to discover problems and needs so as to make appropriate teaching decisions. Researchers such as Alharbi (2012), Park (2012), Römer (2011), Perez-Paredes, Sanchez-Tornel, Calero, and Jimenez (2011), Perez-Paredes, Sanchez-Tornel, and Calero (2012), and Park and Kinginger (2010) have explored and more or less proved that student tracking when using CTM contributes to research, particularly when exploring the validity of results. For instance, the present research would benefit from the use of such tracking because it would investigate the students' actions while interacting with the Thessaly Corpus and further corroborate the findings, consequently improving training sessions and teaching decisions.

The difference between pair work and individual student work when using CTM is another area for future research because it would examine the effectiveness of pair work in CTM. In this study, students worked individually but there were times when the students proposed that they should work with a colleague. This direction of potential research is influenced by an article written by Storch (2005), which compared texts written by pairs with those written by individual students, and explored the nature of the writing processes discernible in the pair talk. The study also elicited the learners' reflections on the experience of collaborative writing, finding that pairs produced shorter but better texts in terms of task fulfillment, grammatical accuracy, and complexity. However, Storch's teaching approach was not corpus-supported so it would certainly be interesting to see, in an analogous comparison in a CTM teaching context, if individual students would be equally or more effective than pairs given that CTM provides lots of support to individual learners as shown in the present study. Furthermore, it would be useful to explore the effects of pairing students of different ability levels – for example, an advanced student would be placed together with a beginner –when using CTM and investigating the consequences for either type of student.

Future relevant work building on this study is to include a third group of students who would be assigned the same CTM and TTM tasks as in this research but who would receive

no training at all. This would enable the researcher to investigate results when no preparatory teaching is involved, and, in doing so, test what the students can achieve when given only the materials (context from concordance examples versus context from the passages themselves) without previous teacher intervention to train students. Would the distinction between 'good' and 'bad' students be present here? In this case, if the one method or the other proves more successful, would it be worth applying it to the teaching situation at hand? A perceptive relevant source is Nation and Chung (2009), who reflect on how vocabulary knowledge and growth should be assessed via the use of appropriate electronic corpora.

The potential of university students to utilize online corpora that are relevant to their discipline is an idea that deserves to be explored. This was inspired by an article by Sha (2010), who conducted a comparison between Google and the British National Corpus as corpus search engines. Would, for instance, a corpus of medical articles drawn from e-journals or Google be effective when used by medical students? The use of CTM in highly specialized fields also requires further attention: for example, exploiting electronic corpora to translate highly specialized medical vocabulary. Due to the extreme specificity of medical vocabulary, it may be difficult for a student to work on a corpus of medical words. It would be worth exploring to what extent a bilingual dictionary would be necessary in this case and, of course, how effective a medical corpus might be in helping students translate medical words. The idea was inspired by Varantola (2003), whose book explores several ways of building and using appropriate corpora in translation teaching for the benefit of teachers and learners alike and provides a rich source of inspiration for other researchers and practitioners concerned with corpora in translator education. For further medical corpus mining, a useful introductory source is Wilbur, Rzhetsky, and Shatkay (2006), who report the results of their research on attributes of biomedical text that have enough generality to transcend the limits of a narrow subject area, while encouraging practical mining of text for factual information.

Investigation of extra mediators, such as IQ, EQ, mood, etc., in addition to motivation that was observed in the present research, can be useful because researchers have recently realized that emotional quotient, for example, plays a significant role when students perform language tasks (Pishghadam, 2009; Rouhani, 2013). To what extent such a mediator variable would influence the results of such research? If it plays a role, how can it be measured and

what action can be taken to consider it, too? This idea was inspired by an interesting relevant article written by Gupta (2014) who addressed the importance of emotional intelligence for students in today's context. Gupta stated that enhancing emotional intelligence enables students to be better able to balance their emotions with logic and use them towards the betterment of performance. Thus, how could emotional intelligence be a means for students to perform better? Would their intrinsic motivation and emotional quotient serve as crucial factors? Answers to such questions can prove useful when teachers and/or researchers plan teaching units so research of this type is promising.

8.5 Contribution of the study

This study contributes to the theory of corpus linguistics because it fulfills four essential elements of contribution to it, namely (a) the 'what', (b) the 'how', (c) the 'why', and the 'context'. The 'what' involves a new or different combination of variables or factors (method, level, performance, motivation) logically regarded as explanatory of the CTM vs. TTM contrast. The 'how' entails demonstrating the way those variables are interrelated or connected with one another (e.g., if or how student motivation explains better student performance). The 'why' involves explaining why the above variables were selected and also why my colleagues should consider the particular representation of my research results as trustworthy. Last but not least, the 'context' entails defining clearly three essential elements such as 'who' (who are involved in the study), 'where' (the venues where it is conducted), and 'when' (time arrangements); but most importantly the 'context' implies showing the extent to which these research results can be generalized (as described in section 8.3).

A policy contribution of the present study is that it provides me with evidence to encourage my university authorities to allow syllabus modifications and provide funding for subscription to online corpora and/or corpus concordancers as well as corpus linguistics e-journals. Finally, a teaching practice contribution of my study is that it enables me to disseminate the corpus concordancing training program and the teaching methodology to

ESP/EAP colleagues of other universities by organizing training seminars or presenting in relevant conferences.

8.6 Final comments

This research used the MP2.2 concordancing tool for the linguistic tasks to be performed by my students. For fairness, I must explain that this tool was used because I was more familiar with this type of concordancers than with other also well-known types. What type of tool a teacher may or should use is not an important issue as long as they become entirely familiarized with it before utilizing it in class and, most importantly, organize extensive training for students. The same applies to online corpus concordancers now that they are offered for free online use or with some subscription. All of them have pros and cons and it is certainly not within the range of this study to comment on them, but as long as teachers and students become used to utilizing the concordancers they can be very useful to everyone. It is up to students to choose by themselves what concordancer they would use if they like the learning approach and decide to perform their own searches. A teacher's duty is only to provide the initial training steps to their students; students should then be allowed to 'fly with their wings' and have their freedom of choice because:

> "Your choices are your only freedom" ---Lailah Gifty Akita.

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APPENDICES

Appendix 1.1: Webpage extract from Aristotle University of Thessaloniki

Retrieved from http://www.lance.auth.gr/en/aim

Appendix 1.2: Mission of the foreign languages program

Retrieved from http://www.uth.gr/lang/index-en.htm

Appendix 1.3: Structure and content of my course in study guide 2015-16

Study Guide of the Department of Special Education, University of Thessaly

Outline of English Language Course (English 1)

Course Code	Credits	Student workload / semester	Course level
FL1	*4*	*100-120 hrs*	---
Year of study	Semester	Type of course	Teaching method
1st	*1st*	*Compulsory*	*Multimedia lecture*
Hrs / week	Hrs / semester	Prerequisites	Language
3	*39*	*None*	*English*

Instructor: Vassilis Argyroulis

Rank: Special Teaching Staff – English Instructor

Office: Delmouzos Building, 1st floor, Office of Foreign Languages

Tel. and email address: 002421074684 vargi@uth.gr

Objectives of the course and expected learning outcomes: the objective of this course is to familiarize students with English passages about Special Education and develop their skills through reading, audiovisual, and other types of activities in English so that they are able to comprehend English written and oral discourse relative to their specialty. In particular, students are taught English terminology that is related to their field of study through current, authentic English passages about domains such as learning difficulties, education, education for disabled people, psychoeducation, teaching methodology, behavioral disorders, educational psychology, sociology, etc.

Indicative but non-exhaustive course content:

- 'Exceptionality' and special education
- Sports and disabilities
- Dyslexia: a problem or not?

Retrieved and translated in English from http://www.sed.uth.gr/images/webdocs/news/os15-16.pdf

Appendix 1.4: Greek courses studied along with the English course

1st Year (detailed description of the courses)

1st Semester (winter)

Compulsory Courses

1. Introduction to ICT Applications
2. Introduction to Ecology
3. Introduction to the Education of deaf and hard of hearing Children
4. Learning Disabilities
5. Foreign Language I

Elective Courses

1. Pathogenesis of handicap
2. Introduction to Special Education
3. Introduction to Linguistics
4. Introduction to Sociology
5. Clinical Child Neuropsychology
6. The role of play in children's learning

2nd Semester (spring)

Compulsory Courses

1. Clinical Psychology: Psychological Problems of Childhood
2. An Introduction to the Education of People with Visual Impairments
3. Intellectual Disability
4. The Spectrum of Autism
5. Foreign Language II

Elective Courses

1. Greek language
2. Assessment and Special Education
3. Health Education
4. Biological Bases of Development
5. Cognitive Development
6. Language development of deaf children

Retrieved from http://www.sed.uth.gr/index.php/gr/english/undergraduate-studies

Appendix 2.1: Focal characteristics of studies since 2003

Abbreviations: EC=explicit comparison between DDL and non-DDL, IC=implicit comparison between DDL and non-DDL, AL= advanced level, IL= intermediate level, LL=low level, TIS=teacher intervention suggested, PT=placement test used, SS=small sample, x = applicable, - = not applicable

Studies	EC	IC	AL	IL	LL	TIS	PT	SS
Sun 2003	x	-	x	-	-	x	x	x
Sun &Wang 2003	-	x	-	-	-	-	-	-
Gaskell and Cobb 2004	-	x	-	x	-	x	-	x
Chambers 2005	-	x	-	-	-	x	-	x
Chan & Liou 2005	-	x	x	-	x	x	-	-
Cresswell 2007	x	-	x	-	-	x	-	-
Philip 2007	x	-	-	-	-	-	-	-
Johns et al 2008	-	x	-	-	-	x	-	x
Chang & Sun 2009	x	-	-	-	-	x	-	x
Breyer 2009	-	x	-	-	-	x	-	x
Flowerdew 2009	-	x	-	-	-	x	-	-
Boulton 2009	x	-	-	-	x	x	x	-
Gilmore 2009	-	x	-	x	-	-	-	-
Varley 2009	-	x	-	-	-	x	-	x
Kennedy & Miceli 2010	x	-	-	x	-	-	-	x
Zhang 2010	-	x	-	-	-	x	-	-
Römer 2011	-	x	-	-	-	-	-	-
Phoocharoensil 2012	-	x	-	-	-	-	-	x
Barrera 2013	-	x	-	-	x	-	-	x
Boulton & Tyne 2013	-	x	-	-	-	-	-	-
Jafarpour et al. 2013	x	-	-	-	-	-	x	-
Kayaoglou 2013	x	-	x	-	-	x	-	x
Yunus & Awab 2014	x	-	x	x	-	x	x	-
Akbari et al 2015	x	-	-	x	-	-	x	-
Fuentes 2015	x	-	-	-	-	-	x	-
Momeni 2015	x	-	-	x	-	-	x	-
Sah 2015	x	-	-	x	-	x	-	x
Wu 2015	x	-	-	-	x	x	x	x

Appendix 2.2: DDL motivational factors in 15 recent studies

Abbreviations: IMK= Impulsion for More Knowledge, EBT= Exploration Beyond Tradition, PR= Plentiful Resources, SLA= SLA=Scaffolding learner autonomy, AD= Authentic data, ANC=Accurate & Native-like Competence, NA=Novelty of Approach, BR=Better Retention, TU=Technology use, CO=Co-operation, PT=Portable teacher, LS=Learning Styles, √=reporting both explicitly and implicitly

Studies	DDL motivational factors											
	IMK	EBT	PR	SLA	AD	ANC	NA	BR	TU	CO	PT	LS
Balunda 2009	√		√			√						
Chang & Kuo 2011		√	√				√					
Shaw 2011	√		√	√				√				
Leńko-Szymańska 2014	√		√	√								
Mansoory & Jafarpour 2014				√					√			
Ozdemir 2014	√		√	√						√		
Marza 2014		√										
Wu 2015				√		√			√			
Sah 2015			√			√						
Benavides 2015		√				√	√		√			
Chen et al. 2015	√	√	√									
Daskalovska 2015			√	√			√	√				
Li 2015					√			√				
Tekin 2015		√		√	√				√	√	√	
Zohairy 2015				√	√							√

Appendix 2.3: DDL demotivational factors in 15 recent studies.

Abbreviations: CS=Context searching, IT=Inadequate training, HW= Heavy Workload, CD=Confusing & Difficult, US=Unavailable Software, MD=Mutual distrust, AP=Anxiety of Performance, LL=Low Level, MRD=Monotonous Data Repetition, LIM=Lack of Intrinsic Motivation.

Studies	DDL demotivational factors									
	CS	IT	HW	CD	US	MD	AP	LL	MDR	LIM
Balunda 2009	√									
Chang & Kuo 2011										
Shaw 2011		√								
Leńko-Szymańska 2014		√								
Mansoory & Jafarpour 2014			√	√						
Ozdemir 2014										
Marza 2014		√			√					
Wu 2015						√	√			
Sah 2015				√				√	√	
Benavides 2015		√		√						
Chen et al. 2015				√						√
Daskalovska 2015										
Li 2015										
Tekin 2015				√						
Zohairy 2015			√	√	√					

Appendix 2.4: Learning foci of recent corpus teaching studies

Studies (2003-2015)	Writing	Reading	Speaking	Collocations	Grammar	Vocabulary
Sun 2003					√	
Sun & Wang 2003				√		
Gaskell and Cobb 2004					√	
Chambers 2005	√					
Chan & Liou 2005				√		
Gardner 2007						√
Cresswell 2007	√					
Philip 2007	√					
Johns et al. 2008	√					
Balunda 2009						√
Boulton 2009					√	
Breyer 2009					√	
Gilmore 2009	√					
Chang & Sun 2009				√		
Varley 2009					√	
Kennedy & Miceli 2010	√					
Zhang 2010				√		

Chambers et al. 2011						√
Chang and Kuo 2011	√					
Phoocharoensil 2012					√	
Barrera 2013			√			
Jafarpour et al. 2013				√		
Mansoory & Jafarpour 2014					√	
Marza 2014				√		
Ozdemir 2014				√		
Yunus & Awab 2014					√	
Akbari et al. 2015		√				
Benavides 2015					√	
Chen et al 2015	√					
Daskalovska 2015				√		
Momeni 2015						√
Sah 2015					√	
Shaw 2015						√
Tekin 2015						√
Wu 2015				√		
Zohairy 2015					√	

Appendix 3.1: Worksheet 2 for use with TTM and SP1

Linguistic Tasks

Stage: _____

Reading Comprehension of Specialized Passage 1 (SP1).

Read SP1 in the handout. Then look at the 10 words given below and write their possible meaning in English or Greek (the 10 words are in bold and underlined in the text).

SP1

European Journal of Special Needs Education (by S. Parsons, A. Lewis and J. Ellins)

The views and experiences of parents of children with autistic spectrum disorder about educational provision: comparisons with parents of children with other disabilities from an online survey.

In a recent review of educational provision for children and young people with special educational needs (SEN) in England by the House of Commons Education and Skills Committee1 (2006), children with autistic spectrum disorder (ASD) were singled out as being in especial need of attention:

Children with Autism Spectrum Disorder (ASD), and social, emotional or behavioural difficulties (SEBD) provide an excellent example of where the old Warnock framework is out of date and where significant cracks exist in the system to the **detriment** of those who fall between them. Far more important, however, is the frustration and upset caused to parents and families by the failure of the system to meet the needs of these children. This needs most urgent resolution. (House of Commons Education and Skills Committee 2006, 18, para. 43).

In its evidence to the Committee, the UK National Autistic Society reported that over 50% of parents of children with ASD were unhappy with their child's current school placement; the same report also states that there are more appeals to the SEN and Disability Tribunal in England about ASD than other disability or SEN (Batten et al. 2006). In addition, high-profile media coverage of comments from parents – such as Maria Hutchings during the UK Election Campaign 2005, who was concerned about the closure of her autistic son's special school and confronted the Prime Minister during a live television broadcast – have placed a spotlight on provision for autistic children and young people. Such concerns were also reflected in the setting up (2000) of the All-Party Parliamentary Group on Autism, which has been very active in political **lobbying** on behalf of children with ASD (for example, Balls (2008). The implication is that the profound social and communication difficulties experienced by children with ASD and the widespread lack of understanding about the condition causes **disproportionate** difficulty for parents of children with ASD in finding appropriate and supportive educational provision for their children compared with families with children with other disabilities.

However, as Whitaker (2007) points out, surveys of parents via parent organisations are likely to highlight greater dissatisfaction with educational provision as this may be one of the reasons for joining a campaigning organisation in the first place. To seek a wider range of views, Whitaker (2007) conducted a postal survey of parents of

children with ASD in one local authority in England, with a specific focus on satisfaction with **mainstream** educational provision (published since we undertook our study). Sixty-one per cent (out of 172 respondents) said they were satisfied or very satisfied, providing a more positive overall picture than that suggested by the UK National Autistic Society. This appears to be more in line with the generally high satisfaction levels about educational **provision** for children with SEN reported in the research literature in both the USA and the United Kingdom (Lewis et al. 2006; O'Connor, McConkey, and Hartrop 2005; McConkey et al. 2004; Crawford and Simonoff 2003; Palmer et al. 2001; Bennett, Lee, and Leuke 1998; Male 1998; Hewson and Sisson 1996; Robertson et al. 1996; Bartlett and Dean 1988; Dawson and Kierney 1988). The main trend is that most parents of children based in either special or mainstream settings were satisfied with the current school placement for their child and favoured their current form of provision over an alternative.

There were, however, important **caveats** in Whitaker's (2007) results: 39% of respondents – a substantial minority – expressed dissatisfaction with mainstream educational provision for their children with ASD. A key factor in such dissatisfaction was the extent to which the school and staff understood the nature of the condition and the individual child's difficulties and needs. The willingness of the school to listen to parents' views and respond flexibly to the child's needs was also correlated with satisfaction. In addition, many of the parents who expressed current satisfaction had also experienced difficulties or concerns about previous schools or classes and identified areas of provision in need of improvement, especially in relation to social skills education. Similar results were found in Canada by Starr, Foy, and Cramer (2001), who surveyed 69 parents of children with **pervasive** developmental disorder (which includes children with ASD) attending a range of educational settings; between one-third and one-half of the group expressed some concerns about their child's progress, especially in relation to social and life schools, as well as a lack of teacher knowledge about their child's condition. Tissot and Evans (2006), reporting on a postal survey of parents of autistic children in the United Kingdom, also noted that whilst a majority of children were being educated in parents' first choice of provision (79% of 738 respondents) and were happy with this (70%), the situation appeared to be **underpinned** by preceding periods of substantial frustration and stress for families, often due to ongoing battles with the local authority. This survey focused primarily on experiences of securing educational provision and so does not tell us a great deal about satisfaction with current provision, which is the focus of the present study.

These findings suggest that there could be particular challenges faced by parents of children with ASD compared with parents of children with other SEN or disabilities. That is not to say that parents of children with non-ASD-related difficulties do not also experience challenges in the education system, but that the specific challenges may be different and, possibly, disability or condition specific (Hodapp, Freeman, and Kasari 1998). Kasari et al. (1999) considered this directly and compared the views of parents of children with ASD and those with children with Down syndrome on questions relating to **inclusive** education in the USA. The groups differed markedly, with over one-half of the parents of children with ASD **favouring** specialised provision, whilst parents of children with Down syndrome largely preferred inclusive settings because of the important perceived advantages of being able to mix and study with non-disabled peers. In particular, parents of children with autism were especially keen that teachers were equipped with specialised teaching skills and knowledge in

relation to ASD, in agreement with the findings of Whitaker (2007), Starr and colleagues (2001, 2006) and Tissot and Evans (2006). However, the two groups did not differ on satisfaction measures, with both groups rating this reasonably high. This suggests that satisfaction measures need to be unpicked so that different aspects of provision are considered.

Words:

detriment = ……

lobbying = …….

disproportionate= …….

mainstream = …….....

provision…….

caveats = ……..

pervasive=…….....

underpinned=……

inclusive = ……. ……

favouring = ……

TASK 2: Fill in the gapped sentences using the words below in any suitable form and the SP1 (Specialized Passage 1) provided in a handout:

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

When I was a little boy, I remember myself ……. my mother over my father to ask for money because my father was stricter.

In Greece, a ..... amount of money is spent on buying arms compared to the small number of its population.

There is a serious …….. in this study, which complicates the explanation of the findings.

The smell of burning oil was so ..... that I opened the window to get fresh air.

A couple in their midforties running their own business, Mr. and Mrs. Swift didn't know what their retirement ……. had achieved to date and felt insecure about their future.

Before attending this specialized school, Mike had attended another school which was …….. and offered him personal assistance.

All children, no matter how heavily disabled, can be included in regular schools with no …….. to themselves or other students, if the conditions are right.

People with visual disabilities must continue …….. Government for changes to the law about accessibility to public transport.

The extent to which autistic children are effectively included in …….. classes depends on a number of key factors.

The professor tried to use examples to …….. his theory.

TASK 3: Make your own sentences using the 10 words given below and the SP1 (Specialized Passage 1) provided in a handout. The 10 words are underlined in the text.

detriment =……...

…….

lobby (verb) = …….

…….

disproportionate = ……...

……..

provision = ……..

……

mainstream = …….....

…….

caveats = …….

…….

pervasive = …….....

……..

underpin = ……...

……..

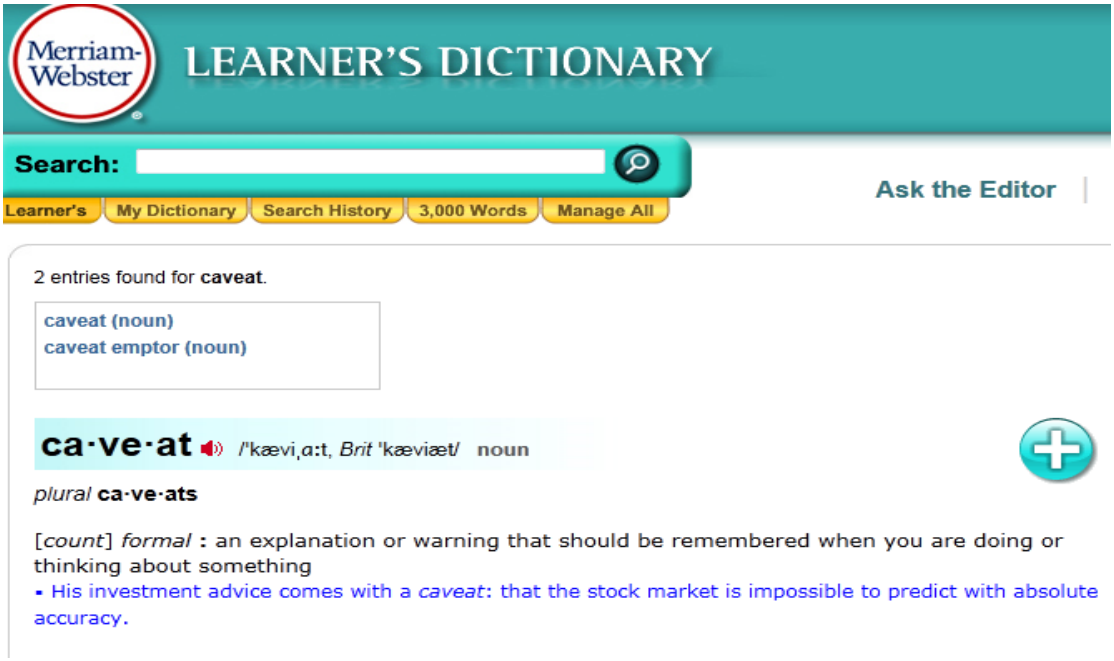
inclusive = ……. …….

……..

favour (verb) = ……

……..

TASK 4: Underline (or put an X in the square next to) the meaning(s) of *caveat*. Wrong meanings count against your score. The Specialized Passage 1 and the on-line dictionary entry provided can help you:



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 TTM motivational questionnaire (Parts I and II) given to them by the teacher (see questionnaire in Appendix 3.4)

Appendix 3.2: Worksheet 1 for use with CTM and SP1
Linguistic Tasks Stage:

TASK 1: Reading Comprehension of Specialized Passage 1 (same passage as in Appendix 3.2)

Read SP1 in the handout. Then look at the 10 words given (same as the ones in Appendix 3.1) 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 (same as the ones in Appendix 3.1) 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 (same as the ones in Appendix 3.1) 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 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 I, and its output O, ...
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, 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 (see the questionnaire in Appendix 3.3)

Appendix 3.3: 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 

Appendix 3.4: Motivational questionnaire about TTM (Part I)

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

Appendix 3.5: Worksheet 3 for use with CTM and SP2

Linguistic Tasks Stage:

TASK 1: Reading Comprehension of Specialized Passage 2 (SP2).
Read SP2 in the handout. Then look at the 10 words given below 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).

Developmental dyslexia (specific reading difficulties) is the most common and extensively studied form of learning disability. However, a failure to agree on a single working definition for the condition reflects the differing perspectives of educationalists, psychologists and neurobiologists and the complexity of issues involved at a behavioural, **cognitive** and biological level.

The Phonological Processing Deficit (PPD) hypothesis remains the most influential theory to explain developmental dyslexia at a cognitive level. An impressive amount of empirical data has been collected over the past 30 years which indicates that dyslexic children have difficulties in establishing, and later in accessing, adequate phonological representations (Snowling, 1998).

It has been consistently shown that dyslexic children perform poorly on a range of tests involving phonological skills such as rhyme awareness (MacLean, Bryant and Bradley, 1987), reading and repeating nonsense words (Rack, Snowling and Olson, 1992; Snowling, 1981), rapid naming of a sequence of familiar pictures (Denckla and Rudel, 1976), the ability to **segment** words into their individual sounds (Bruck, 1992; Snowling et al., 1986), awareness of alliteration (Bryant et al., 1990), verbal repetition (Brady, Poggie and Rapal, 1989) and verbal naming (Katz, Shankweiler and Liberman, 1981; Snowling, van Wagtendonk and Stafford, 1988). Phonological memory has also been identified as a source of impairment (Snowling and Hulme, 1989). Dyslexic individuals demonstrate reduced memory **span** for letter strings (Hollogan and Johnston, 1988), unrelated word strings (Beech and Awaida, 1991), words in a sentence (Wiig and Semel, 1976) and strings of digits (Spring, 1976).

Neurophysiological and neuroimaging evidence supports the PPD hypothesis. Variations have been identified in the language-related areas of the brains of dyslexic compared with non-dyslexic populations (Galaburda, 1989; Larsen et al., 1990; Paulesu et al., 1996). However, not all studies show the same pattern of results and some research suggests that sex, age and handedness of subjects may account for **discrepancies** between findings (Schultz et al., 1994).

Nevertheless, the PPD hypothesis has inspired phonological-based interventions, which form the foundation of current conventional intervention programmes within the education system (Hatcher, Hulme and Ellis, 1994). However, while it is widely recognized that **impairments** in phonological aspects of language are involved in dyslexia, there is disagreement as to whether children with dyslexia suffer from more than phonological problems. A range of non-phonological **deficits** has been identified. For example, problems with visual processing (Eden et al., 1996), reduced information processing speed (Denckla and Rudel, 1976; Wolf, 1991), motor skill

difficulties (Rudel, 1985), deficits in time estimation (Nicolson, Fawcett and Dean, 1995) and deficits in automatization skills (Nicolson and Fawcett, 1990). As the PPD hypothesis has its biological basis in proposed deficits (differences) in the language areas of the brain (Paulesu et al., 1996), it provides no obvious link to the brain systems thought to be involved with these observed non-phonological deficits.

Alternative theories have begun to emerge which implicate different regions of the brain and which, if supported, suggest the need for a different approach to intervention. Some of these approaches have received much media attention and have been hailed as potential 'cures'. Perhaps the most prominent of these claims relates to the use of tinted lenses (see Whiteley and Smith, 2001) and the implementation of exercise regimes (e.g. McPhillips, Hepper and Mulhern, 2000). While the scientific community would dispute any claim for a 'cure' for dyslexia, this paper addresses the question of whether or not research findings from a range of scientific disciplines offer any theoretical basis to support the use of specific exercise regimes to **ameliorate** the symptoms of dyslexia. The focus is on the potential role of the cerebellar and **vestibular** regions of the brain in understanding developmental dyslexia and the potential links to the use of exercise-based intervention.

The cerebellum, one of the first structures to evolve in the **vertebrate** nervous system, is located at the rear of the brain above the brainstem and, in primates, it is almost completely covered by the occipital lobes of the cerebral hemispheres (Thompson, 1993). In humans, the neocerebellum, the most recent region of the cerebellar cortex to evolve, is interconnected with the most recently evolved association areas of the cerebral cortex. Although the cerebellum makes up only 10 per cent of the brain's mass, it contains more than 50 per cent of its neurons and receives sensory information from all parts of the body, including the vestibular system of the inner ear. It has been recognized for many decades that the cerebellum is involved in the coordination of muscular activity, especially that required for balance and the fluidity of movement. It is involved in the timing and feedback correction of voluntary movement (Wickens, 2000), and it serves to keep functions steady around a homeostatic baseline (Leggio et al., 2000). The cerebellum is activated during learning and becomes more active as the complexity of a task increases (Bower, 1997; Fabbro, 2000). It has also been implicated in the formation and storage of memory traces for 'skilled response' learning (Thompson et al., 1998).

Leiner, Leiner and Dow (1989) proposed, however, that the role of the cerebellum might not be limited to the motor domain. **Primate** studies have found that dorsal parts of the prefrontal cortex, known to be important for functions such as working memory and visuo-spatial attention, can potentially be influenced by activity in the cerebellum (Middleton and Strick, 2001, reported in Ramnani and Miall, 2001). Furthermore, clinical studies of patients with cerebellar dysfunction and neuroimaging studies are now providing evidence that the cerebellum is involved not just in the coordination and automatization of motor activity, but also in the regulation of cognitive functioning, including the cognitive skills essential for reading.

Words:

cognitive = ……....

segment = …….

span = ……

discrepancies = …….

impairments = ……

deficits = ……

ameliorate=…….

vertebrate=……..

vestibular = …….

primate = ……

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

cognitive, segment (verb), span, discrepancies, impairments, deficits, ameliorate, vertebrate, vestibular, primate

1) …… disorders are completely missed or ignored in the great majority of head injury cases.

2) When meetings involve a lot of participants, there are usually many …… of opinion between the people involved.

3) Children's ……..ability can be affected by mother's exposure to polluted atmosphere.

4) She ……. her essay by making the necessary corrections and changes to words.

5) A snake is a ……. because it has a complete skeleton including skull, spine and ribs.

6) Many children with Down Syndrome have …… in their working memory.

7) The professor decided to ……. the project into three parts so that more students are involved and more time is devoted to it.

8) Scientists of all nationalities should cooperate in order to promote the conservation of all ……. species.

9) Most of the reliable information about the length of the life …… of animals comes from zoos, where animals live under almost ideal conditions.

10) Public awareness about children with visual …… should be increased so that they are accepted by society.

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:

cognitive = ……...

……..

segment (verb) = ……..

……..

span = …….....

……..

discrepancies = ……

……..

impairments = …….....

……..

deficits = ……..

……..

ameliorate = …….....

……..

vertebrate =……...

……..

vestibular = ……..

……..

primate = …….

……..

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

1. ... een cardiac deceleration and the Pe. However, the **dorsal** ACC also seems to be related to cardiovascular ac...
2. ... although some have argued that there is also some **dorsal** activation (Claeys et al. 2004). The pattern of r...
3. ... are undefined, discontinuous AERs, and additional **dorsal** AERs.11 Therefore it is suggested that ventrally...
4. ... ue to a more tightly integrated network among the **dorsal** and ventral streams in their visual system (Hanse ...
5. ... cessing requirements and therefore did not assess **dorsal** and ventral functioning at the same level of neur...
6. ... pears to depict the organization of the limb into **dorsal** and ventral domains. In other words, the default ...
7. ... ating structure forms at the boundary between the **dorsal** and ventral ectoderm (Niswander, 2003). It become
8. ... d co-morbid language impairment show a deficit in **dorsal** and ventral stream tasks only in high noise condi...
9. ... ing the prefrontal cortex, which consisted of its **dorsal** and orbital subregions, was adapted from Gur and...
10. ... in the dorsolateral funculus and terminate in the **dorsal** and ventral horns of the spinal cord. Activation ...
11. ... o two specialized processing pathways, namely the **dorsal** and ventral streams (Milner and Goodale 1995). Th
12. ... discussed with respect to the involvement of the **dorsal** and ventral pathways in developmental disorders. ...
13. ... to an abnormality in the interaction between the **dorsal** and ventral systems in those populations. Imaging ...
14. ... nsidered to be controlled by different pathways – **dorsal** and ventral, respectively (Passingham et al., 200 ...
15. ... s, radiatio optica, V1, subcortical areas: e. g. **dorsal** and ventral stream) are counted among the phenom...
16. ... n of the limbs with foot pads present on both the **dorsal** and ventral surfaces. <figure/>Wnt7a is restricte...
17. ... two dipoles, one in the right and one in the left **dorsal** aspects of the superior temporal gyrus, pointing ...
18. ... nd the cerebellum, away from the dorsal. from the **dorsal** brain stem? S6: yeah (xx) S7: pons. okay so ...
19. ... s with the internal vertebral branch of the first **dorsal** branch of the carotid artery. For this reason, th...
20. ... nesis, (such as neuroepithelial cell survival and **dorsal** CNS patterning), organogenesis (such as the eye) ...
21. ... al processes, such as the late development of the **dorsal** CNS, (although the exact role it plays here is le ...
22. ... acts ascending in it which can be classified into **Dorsal** Column - This is the largest tract in the spinal ...
23. ... biects held in the hand by touch alone - due to a **dorsal** column lesion originating in the contralateral pa...
24. ...] Morita, I., Keith, M.W., & Kanno, T. (2007). **Dorsal** column stimulation for persistent vegetative stat...
25. ... in temporal, inferior-frontal, and fronto-central **dorsal** cortices were sparked by the stimuli, sometimes e...
26. ... nd the error potentials remains unclear. Both the **dorsal** (Critchley et al., 2003; Gianaros, Van der Veen & ...
27. ... ral surfaces. <figure/>Wnt7a is restricted to the **dorsal** ectoderm by the transcription factor Engrailed1 (...
28. ... It is induced by WNT7a a protein expressed in the **dorsal** ectoderm, but unlike other Wnt proteins discussed...
29. ... a, a member of the Wnt family is expressed in the **dorsal** ectoderm, suggesting that it may play a role (Par ...
30. ... dorso-ventral pattern. Indeed, the removal of the **dorsal** ectoderm or the loss of Wnt7a by gene targeting c...
31. ... represses R-fng expression, restricting it to the **dorsal** ectoderm, creating a 'R-fng boundary' and resulti...
32. ... mesoderm, seen in figure 11.14 This suggests that **dorsal** expression of Wnt7a in the ectoderm induces dorsa
33. ... orsal expression of Wnt7a in the ectoderm induces **dorsal** expression of Lmx1 in the mesoderm, which gives t...
34. ... hout Ξ²-catenin dependent activity to specify the **dorsal** fate. It is also required for maintenance of Shh...
35. ... e. SU-m: are you serious? S1: right and the **dorsal** fin is deeply notched. what family is that? SU...
36. ... p the adipose fin, or maybe a little piece of the **dorsal** fin or the anal fin. usually not, whi- or or the ...

Meaning 1: Relating to the pregnancy of sea mammals ☐

Meaning 2: Belonging to or on or near the back surface of an animal or organ ☐

Meaning 3: Relating to the front entrance or entry of a building ☐

Meaning 4: (biology) Facing away from the axis of an organ or organism ☐

Meaning 5: Belonging to the feet of an animal ☐

Meaning 6: (Botany) Of or on the outer surface or back of an organ ☐

Meaning 7: Relating to the act of offering a gift or present ☐

Meaning 8: Having delicious smell and taste in foods served ☐

Meaning 9: A psychological problem which causes suffering ☐

Meaning 10: Relating to the development of windsurfing skills ☐

Questionnaire Stage Students fill in the CTM motivational questionnaire (Parts I, II, and III) given by the teacher (see the questionnaire in Appendix 3.3)

Appendix 3.6: Worksheet 4 for use with TTM and SP2

Linguistic Tasks Stage:

TASK 1: Reading Comprehension of Specialized Passage 2 (SP2 is the same as the one in Appendix 3.5).

Read SP2 in the handout. Then look at the 10 words given (same as the ones in Appendix 3.5) and write their possible meaning in English or Greek (the 10 words are in bold and underlined in the text).

TASK 2: Fill in the gapped sentences (same as the ones in Appendix 3.5) using the words below in any suitable form and the SP2 (Specialized Passage 2) provided in a handout:

cognitive, segment (verb), span, discrepancies, impairments, deficits, ameliorate, vertebrate, vestibular, primate

TASK 3: Make your own sentences using the 10 words given (same as the ones in Appendix 3.5) and the SP2 (Specialized Passage 2) provided in a handout. The 10 words are underlined in the text.

TASK 4: Underline (or put an X in the square next to) the meaning(s) of *dorsal*. Wrong meanings count against your score. The Specialized Passage 2 and the on-line dictionary entry provided can help you:

Meaning 1: Relating to the pregnancy of sea mammals ☐

Meaning 2: Belonging to or on or near the back surface of an animal or organ ☐

Meaning 3: Relating to the front entrance or entry of a building ☐

Meaning 4: (Biology) Facing away from the axis of an organ or organism ☐

Meaning 5: Belonging to the feet of an animal ☐

Meaning 6: (Botany) Of or on the outer surface or back of an organ ☐

Meaning 7: Relating to the act of offering a gift or present ☐

Meaning 8: Having delicious smell and taste in foods served ☐

Meaning 9: A psychological problem which causes suffering ☐

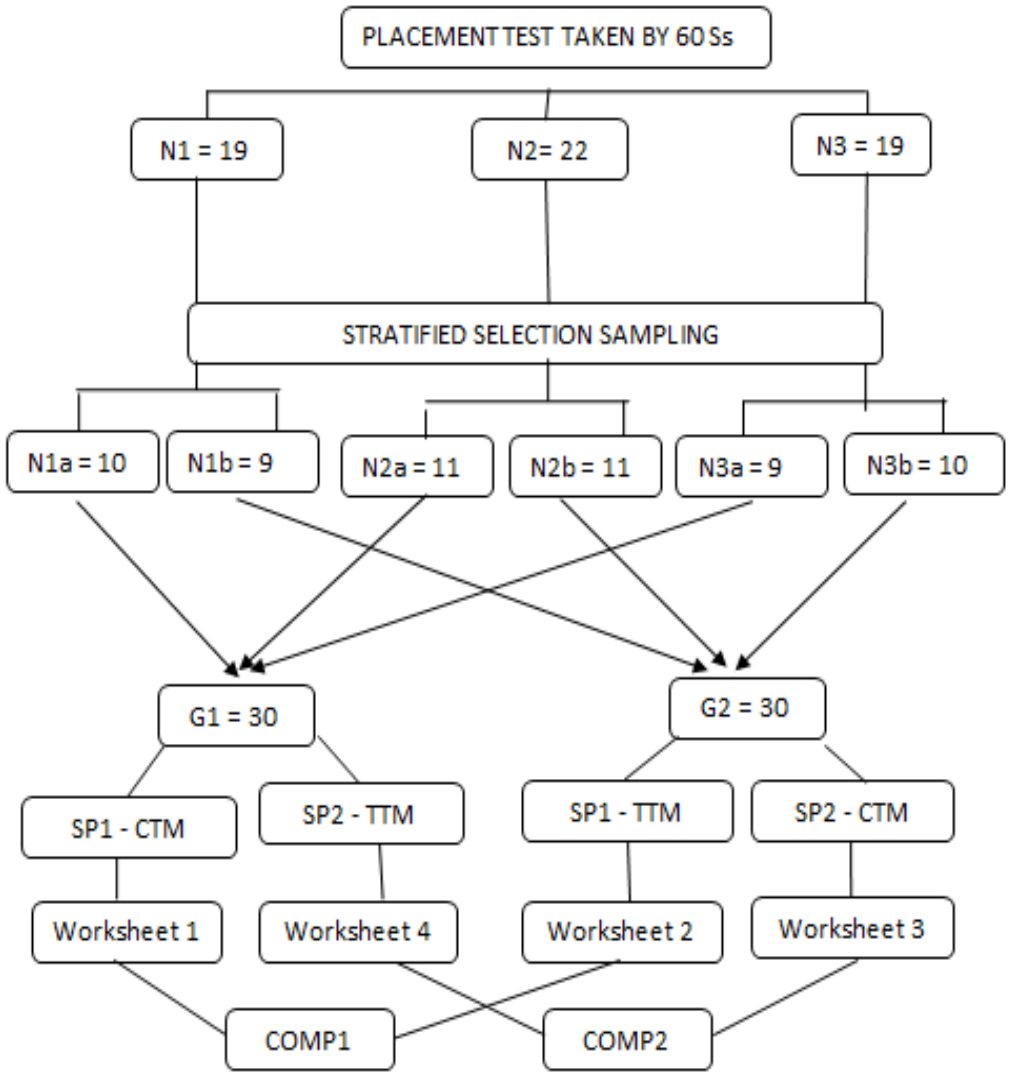
Meaning 10: Relating to the development of windsurfing skills ☐

Questionnaire

Stage St

udents fill in the TTM motivational questionnaire (Parts I and II) given by the teacher (see the questionnaire in Appendix 3.4)

Appendix 3.7: Diagram of level placement and teaching stages



N1= BLSs (beginner level students), N2= ILSs (intermediate), N3= ALSs (advanced)

G1 = Group 1 of students, G2 = Group 2 of students

N1a=BLSs who join Group 1, N2a=ILSs who join Group1, N3a=ALSs who join Group 1

N1b= BLSs who join Group 2, N2b=ILSs who join Group 2, N3b=ALSs who join Group 2

SP1 = Specialized Passage 1, SP2= Specialized Passage 2

CTM= Corpus Teaching Method, TTM= Traditional Teaching Method

COMP1= Comparison using same passage, different methods, different student groups

COMP2= Comparison using same passage, different methods, different student groups

Appendix 3.8: Evaluation of the Thessaly Corpus design

CRITERION 1. The contents of a corpus should be selected without regard for the language they contain, but according to their communicative function in the community in which they arise.	
YES √	NO
COMMENT: Similar texts with the texts of the Thessaly Corpus are assigned to Ss by their Greek professors to translate or summarize.	
CRITERION 2. Corpus builders should strive to make their corpus as representative as possible of the language from which it is chosen.	
YES √	NO
COMMENT: It is the type of English language studied by the participants of this research.	
CRITERION 3. The mode of the text, whether the language originates in speech or writing, or perhaps nowadays in electronic mode.	
YES √	NO
COMMENT: In an electronic mode.	
CRITERION 4. The type of text for example if written, whether a book, a journal, a notice or a letter.	
YES √	NO
COMMENT: E-journals and texts from various websites.	
CRITERION 5. The domain of the text for example whether academic or popular.	
YES √	NO
COMMENT: Specific-academic, general-academic, and popular.	
CRITERION 6. The language or languages or language varieties of the corpus.	
YES √	NO
COMMENT: English (British, American, and International).	
CRITERION 7. The location of the texts for example (the English of) UK or Australia.	
YES √	NO
COMMENT: English spoken and written in UK, USA, and internationally.	

CRITERION 8. The date of the texts.	
YES √	NO
COMMENT: Mainly from 1990 to the beginning of the 2010's.	
CRITERION 9. Criteria for determining the structure of a corpus should be small in number, clearly separate from each other, and efficient as a group in delineating a corpus that is representative of the language or variety under examination.	
YES √	NO
COMMENT: 19 basic criteria are involved in the present evaluation.	
CRITERION 10. Any information about a text other than the alphanumeric string of its words and punctuation should be stored separately from the plain text and merged when required in applications.	
YES	NO √
COMMENT: Not stored separately at this point.	
CRITERION 11. Samples of language for a corpus should wherever possible consist of entire documents or transcriptions of complete speech events, or should get as close to this target as possible. This means that samples will differ substantially in size.	
YES √	NO
COMMENT: The samples of language involved are (a) whole scientific articles from e-journals, (b) entire texts from websites, (c) whole stories (novels or fiction), and (d) newspaper articles.	

CRITERION 12 Decide on the structural criteria that you will use to build the corpus, and apply them to create a framework for the principal corpus components.	
YES √	NO
COMMENT: Three principal kinds of corpora of analogous size are selected to make up all TC. A specialized one, a general-academic one and a general one.	

CRITERION 14. The corpus builder should retain representativeness and balance. While these are not precisely definable and attainable goals, they must be used to guide the design of a corpus and the selection of its components.	
YES √	NO
COMMENT: Selection of 3 types of content is representative of the Ss' study material. Balance is kept by allocating similar amount of words to each one of the three sub-corpora (almost 10 million words each to form approximately a 30-million corpus in total). Only a small piece of the same text (some 30 thousand words) was accidentally inserted twice in the whole Thessaly Corpus but this does not seriously affect the balance and the mechanics of the software.	
CRITERION 15. Any control of subject matter in a corpus should be imposed by the use of external, and not internal, criteria.	
YES √	NO
COMMENT: Predominant external criterion is that the subject-matter of the Ss is special education, pedagogy, academia, general education and the like.	
CRITERION 16. The more you can gather, the clearer and more accurate will be the picture that you get of the language.	
YES √	NO
COMMENT: The amount of 30 million words is sufficient for this research.	
CRITERION 17. Specialized corpora do not have to be very large in size.	
YES √	NO
COMMENT: The sub-corpus of special education, for instance, is around 10 million words. It is not too large and not too small, either.	
CRITERION 18. A corpus should aim for homogeneity in its components while maintaining adequate coverage, and rogue texts should be avoided.	
YES √	NO
COMMENT: There is a high degree of homogeneity in the sub-corpus of special education whereas homogeneity in the other two is in a lower degree.	
CRITERION 19. How does the corpus design relate to the purpose of the research?	
YES √	NO
COMMENT: The purpose of the research is the development of English for Specific/Academic Purposes teaching units in Greek Tertiary Education via the use of an electronic corpus such as the Thessaly Corpus. TC is designed in a way that relates to the actual study need of the Ss to contextualize and elicit the meaning of unknown specialized words relevant to their field of study.	

Appendix 3.9: The corpus concordancing training sessions

SESSION 1: Getting to know how the software functions (based on Barlow, 2003)

Materials provided to each student: personal computer (provided by the university or own), MP 2.2 corpus concordancing software (provided by teacher), Thessaly Corpus .txt files (provided by teacher)

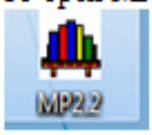
Aim: to familiarize SSs with the corpus concordancer MP 2.2 in order to search for words or phrases.

Time: three hours

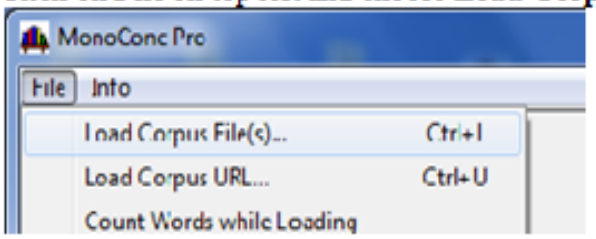
TASK 1: Loading the Thessaly Corpus in the MP 2.2 concordancer

To make the Thessaly Corpus text files available for processing by MP 2.2 you need to take the following steps:

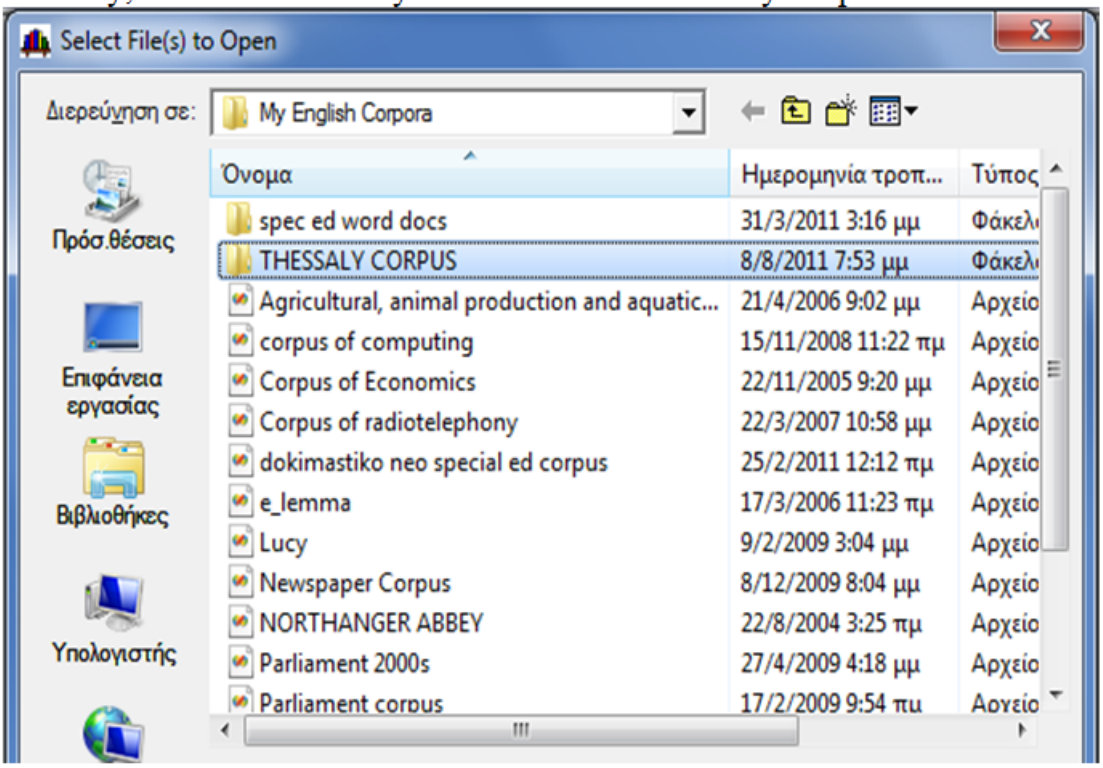
To open MP 2.2, double-click on its icon on your screen.



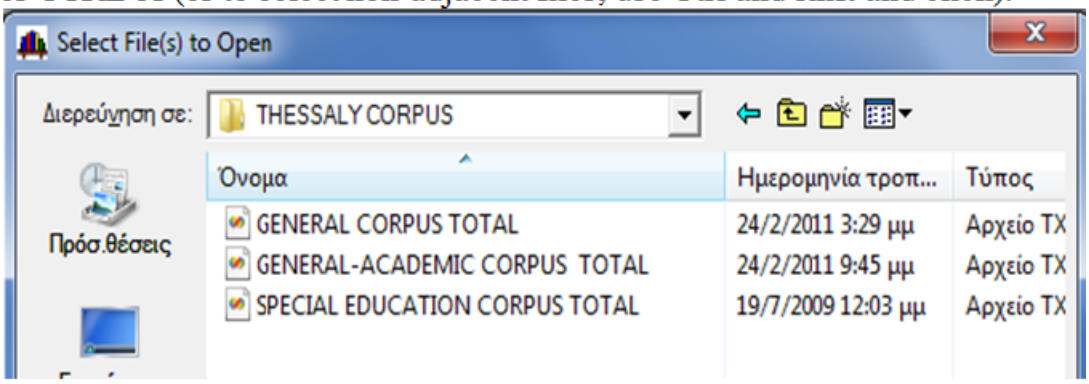
Click on **File** on top left and choose **Load Corpus File(s)** from the menu.



When the Windows dialogue box appears with the contents of the current directory, select the directory that leads to the Thessaly Corpus file.



When the Thessaly Corpus file name appears in the directory, use the mouse to click on it to select it. To select several files, use the shift and cursor keys, or CTRL-A (or to select non-adjacent files, use Ctrl and shift and click).

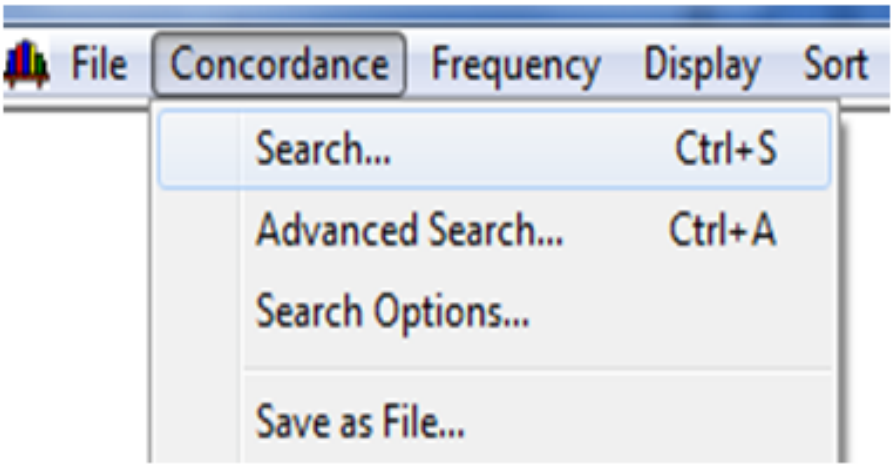


Click on OPEN to load the selected files into MP 2.2 to have them available for searching.
Students are allowed some time to repeat taking the above steps in order to familiarize themselves with MP 2.2

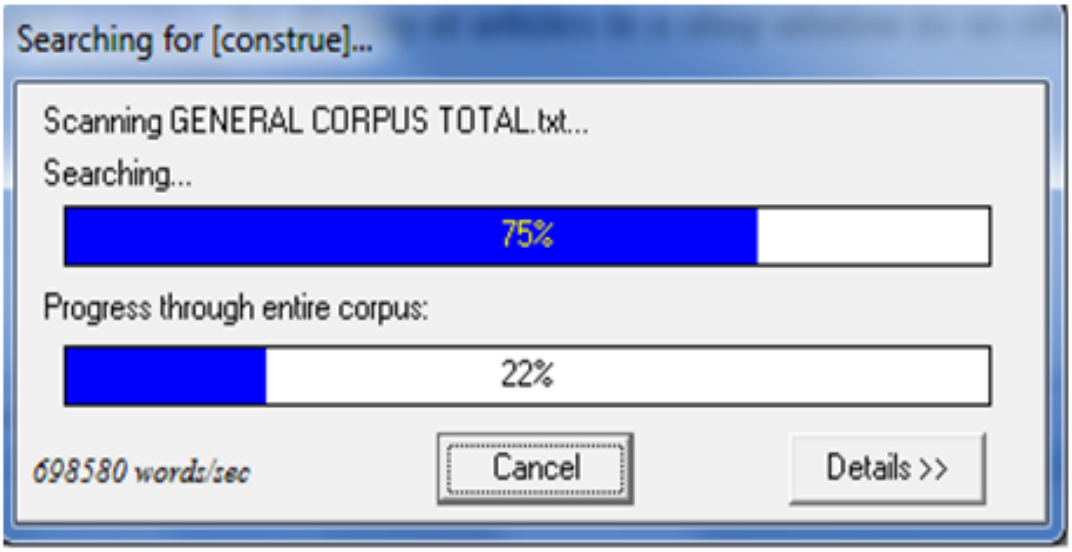
TASK 2: Performing a simple text search for words and phrases in MP 2.2

To simply search for words or phrases in MP 2.2 you need to take the following steps:

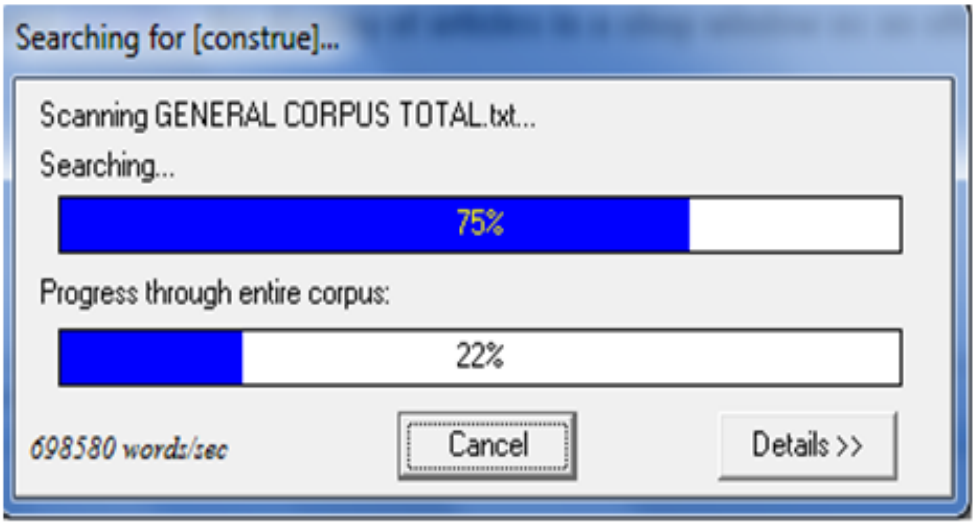
For example, to search for all the instances of the base form *construe,* select **Search** from the **Concordance** menu.



In the text box at the top of the dialogue box that appears type in the search term **construe** and click on **OK** (or press **Enter**). As you can see, the program works through the Thessaly Corpus texts looking for the word **construe**.



In the text box at the top of the dialogue box that appears type in the search term **construe** and click on **OK** (or press **Enter**). As you can see, the program works through the Thessaly Corpus texts looking for the word **construe**.



The results flood in rapidly in a concordance results window (see results below) and the sentences are there for you to examine them so as for example to observe which words frequently follow **construe**. Read each example in turn and work out its sense. Do not use a dictionary, but make notes on the meanings.

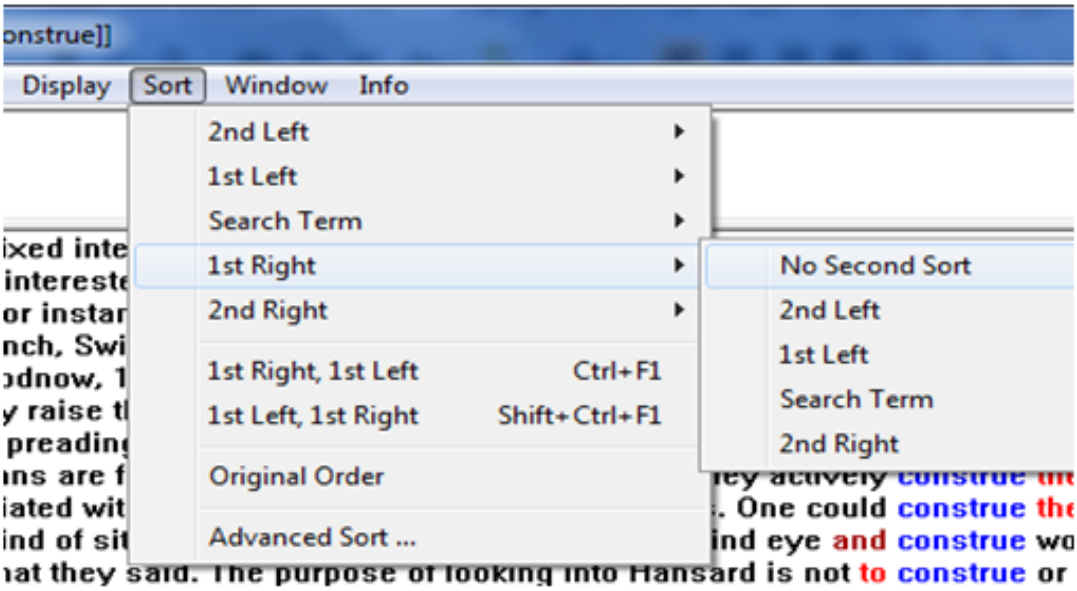
UK residence? It was logical to construe the phrase ´intending to settle´
im. That's not what you want to construe, is it? <SP>MCCURRY:</SP> N
ss and Egyptian legal systems construe the display of goods in a shop
s><+_Egyptian> legal systems construe the display of articles in a sho
s have focused on how children construe authority interactions and how
rent study explores how pupils construe their teachers´ authority; which
ther do not notice or do not construe as bullying. Thus, because
ngs and therefore they actively construe the world around them by maki
his contemporaries. One could construe the motivation behind Clare's
should not turn a blind eye and construe words in the way that they can
f looking into Hansard is not to construe or criticise the words used by
e of those involved are likely to construe as belonging to a private dom
he contra preferentum rule, and construe it in Laura's favour anyway, ag
to see how the various groups construe the same scenario and issues
rmation on how other countries construe injury and whether this ground
tum rule, that the courts should construe each term narrowly against the
nerally the case that courts will construe national law in conformity with

Students are allowed some time to repeat taking the above steps in order to familiarize themselves with MP 2.2

TASK 3: Sorting the instances to find word associations

Once the search is ended, then you can find out which words are associated with **construe** by sorting the instances so that they are in alphabetical order of the word following the search term **construe.** To do this, take the following steps:

Maximize the concordance results window and, from the **Sort** menu on top of it, select 1ST RIGHT.



The program then immediately rearranges the concordance lines to give a more revealing view of the search results (see results below) so that you can see which word(s) follow **construe** with what frequency.

mean spontaneously i would not construe one side and the other side
of looking into Hansard is not to construe or criticise the words used b
hildren. Apparently she does not construe social researchers as types
viss and Egyptian legal systems construe the display of goods in a sh
y our assumptions have come to construe the way we perceive, unders
ied consent? While we could not construe the subjects as partners in r
y our assumptions have come to construe the way we perceive, unders
it UK residence? It was logical to construe the phrase ´intending to sett
ins><+_Egyptian> legal systems construe the display of articles in a s
nding, because we automatically construe the world through that frame
eings and therefore they actively construe the world around them by m
ig to see how the various groups construe the same scenario and issu
m not very clear about, w- how to construe the rationalists. okay now, s
d his contemporaries. One could construe the motivation behind Clare'
urrent study explores how pupils construe their teachers´ authority; wh
s should not turn a blind eye and construe words in the way that they c

Do the same as above and this time select 1ST LEFT to see the words that precede the search term **construe** (see results below). If you scroll fairly quickly through the concordance results, you will discover that the visual patterning created by several identical words surrounding the search word will be striking enough to catch your eye.

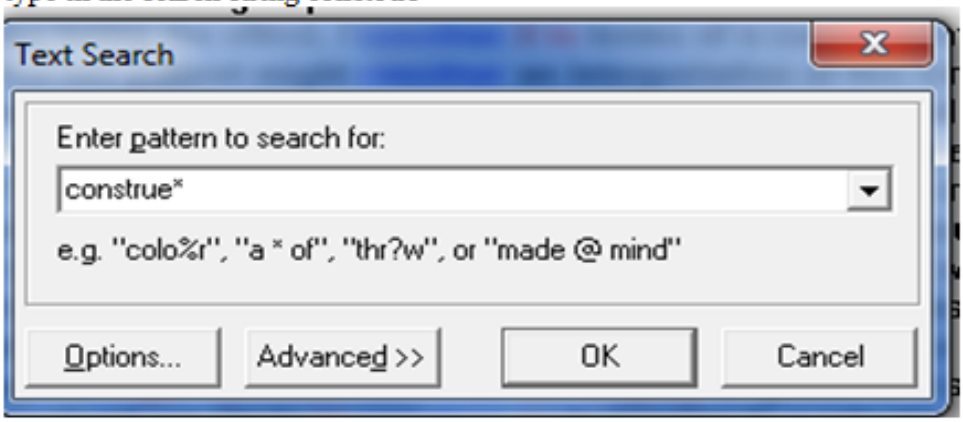
study explores how pupils construe their teachers´ authority; which
rule, that the courts should construe each term narrowly against the
_Egyptian> legal systems construe the display of articles in a sho
nd Egyptian legal systems construe the display of goods in a shop
hose involved are likely to construe as belonging to a private doma
ing a prior interpretation to construe a new or revised interpretation
ing a prior interpretation to construe a new or revised interpretation
very clear about, w- how to construe the rationalists. okay now, sup
assumptions have come to construe the way we perceive, understa
sely because it is willing to construe itself and reconstrue itself, alte
king into Hansard is not to construe or criticise the words used by t
esidence? It was logical to construe the phrase ´intending to settle´
assumptions have come to construe the way we perceive, understa
That's not what you want to construe, is it? <SP>MCCURRY:</SP> N
lly the case that courts will construe national law in conformity with

Students are allowed some time to repeat taking the above steps in order to familiarize themselves with MP 2.2

TASK 4: Searching for parts of words by using the wildcard character * (asterisk)

With the concordance results window again, you can get a better result if you could search for all exemplars of the lemma **construe**: **construe**, **construes**, **construing**, **construed**, etc. To do this, you need to make use of the wildcard character * (asterisk) in the following way:

In the **Concordance** menu select **Search**. When the **Text Search** window appears, type in the search string **construe***



It will find words that derive from **construe** (see results below)

Golden Rule - The courts construes the statute as a whole to give
ention. But this has to be construed very strictly and used only in
ontemporaries. One could construe the motivation behind Clare's
ld not turn a blind eye and construe words in the way that they can
cing into Hansard is not to construe or criticise the words used by
ire the enactment is to be construed in accordance with the interpr
le if penal statute is to be construed. <fnote>Ibid. pp.25-26 </fnote>
is asserted when "food is construed as a cultural artefact and empl
ose involved are likely to construe as belonging to a private dom
rliament would want to be construed from the word 'road'. They rec
n, this would probably be construed as common assault, the maxi

Do the same as above and this time select 1ST LEFT to see the words that precede the search term **construe*** (see results below).

SESSION 2: Getting to know how to investigate meanings of words (based on Sinclair, 2003)

Materials provided to each student: personal computer (provided by the university or own), MP 2.2 corpus concordancing software (provided by teacher), Thessaly Corpus .txt files (provided by teacher).

Aim: to familiarize Ss with investigating meanings of words and understanding how meanings are shown.

Time: three hours

TASK 1: Investigating the meaning(s) of the word *trim*

1. Type in the search term *trim* and click on OK (or press Enter).

2. Sort it 1ST RIGHT to see what usually follows it.

Shostak has been able to trim her research to a manageable size,
lgets. If planners intend to trim hospital budgets and reallocate sta
e <LAUGH> S4: if you just trim it a little bit fix this S1: that's right s
ms. But we really ought to trim it some. <SP>SEELEY:</SP> Okay.
diesel, in either of its two trim levels, is the most desirable of the
ıu men seen anything of a trim little craft, manned by four pretty gi
lace in the Green Forest a trim little bird flew up from the ground, h
lollie, eyeing critically the trim little boat in which they had had so
ıe of those holes. It was a trim little head with a very small bill and
e staring and wondering a trim little head appeared at the entrance
the Tree Swallow and his trim little wife, and the doorway of their
ıoberly dressed but rather trim little fellow, a very little larger than
ıe of the water was a slim, trim little bird with fairly long legs, a lon
/ren, and was as slim and trim looking as any bird of Peter's acqu

3. Read each example that appears in your active window and work out its sense if you can. Make notes on the meanings by grouping them together wherever you can.

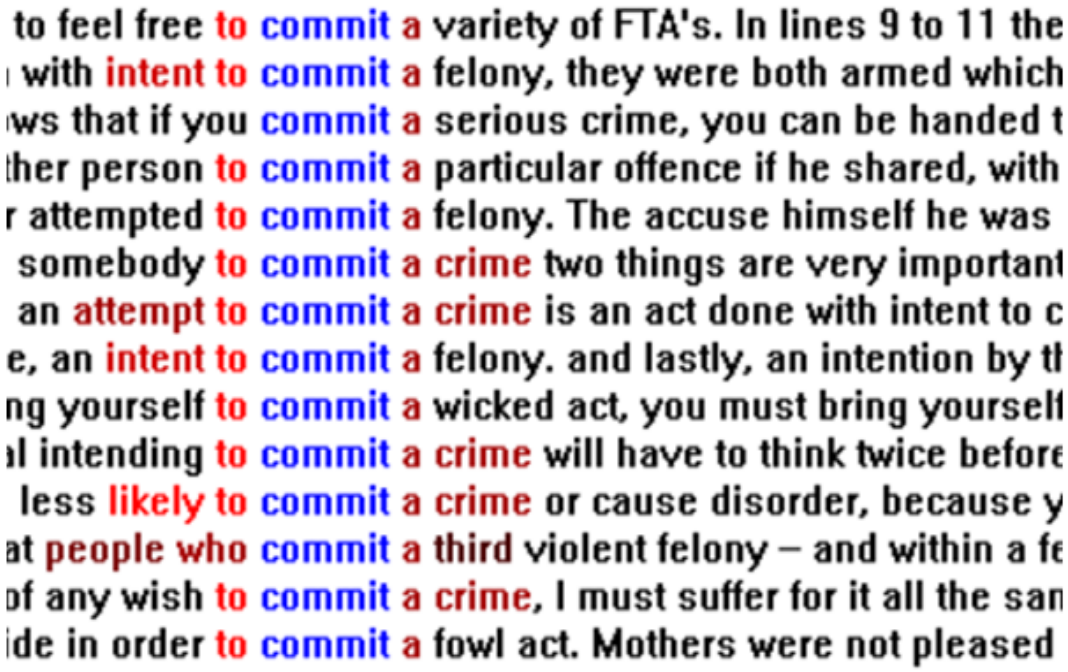
4. Pick out and state what the largest group of meaning is.

5. What word classes are found in this group?

TASK 2: Exploring the coselection of words by asking the question: What sort of things do we usually commit?

1. Type in the search term *commit* and click on ok (or ENTER).

2. Sort it 1ST RIGHT to see what usually follows it.

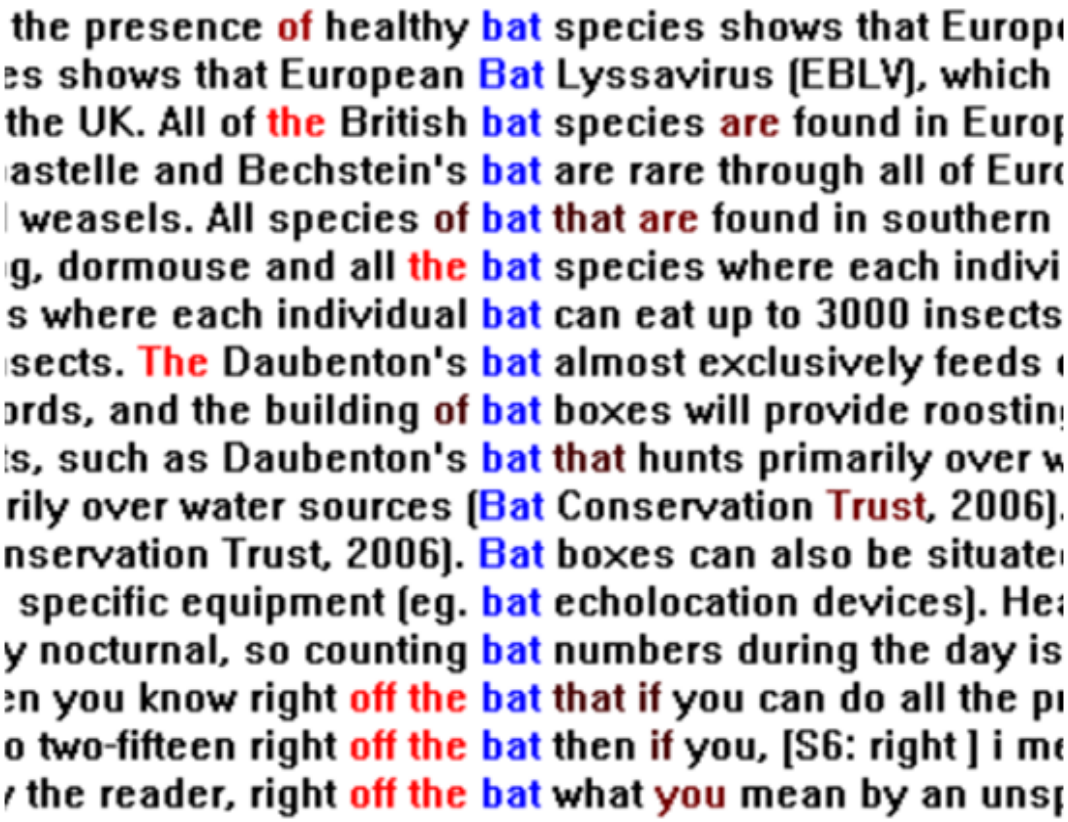


3. Study the first 40 examples that appear in the active window. Look at the words that follow after the verb *commit* and locate the object. What do we often *commit*?

4. What is the common characteristic or flavor that all those objects after *commit* share? Please, report.

TASK 3: Exploring words whose meanings are quite different.

1. Type in the KWIC *bat* and click on ok (or ENTER).



2. Study the first 35 examples. Do you find instances of quite different meanings? How many different meanings do you identify?

3. After identifying the first meaning, please, examine the left cotext, particularly the word immediately to the left. Is there evidence of a special selection or a regular choice here?

4. After identifying the second meaning, can you tell if the one meaning is more frequent than the other?

Appendix 3.10: Frequency of the target words in the Thessaly Corpus

Specialized passage 1

detriment= 123 lobbying = 101 disproportionate= 195

likely= 3839 mainstream = 3235

caveats = 45 pervasive= 811 underpinned= 80

inclusive = 3750 favouring = 84

Specialized passage 2

cognitive = 8410 segment = 665 span = 640

discrepancies = 404 impairments = 3048

deficits = 2890 ameliorate= 79 vertebrate= 53

vestibular = 84 primate = 189

Appendix 3.11: Word knowledge pretest (pilot study)

Your name: ……

In the following table, please, indicate A, B, or C with a tick (√), according to the statement that applies to you.

A= I don't know the word

B= I understand the word when I hear or see it in a sentence, but I don't know how to use it in my own speaking or writing

C= I know this word and can use it in my own speaking and writing

WORD *	**A**	**B**	**C**
detriment			
lobbying			
disproportionate			
likely			
mainstream			
caveats			
pervasive			
underpinned			
inclusive			
vertebrate			
vestibular			
primate			
knolls			

* All the assigned words can be seen in Appendices 3.1, 3,2, 3.5, 3.6 (Tasks 1, 2, or 3)

Appendix 3.12: Open-Ended Survey questions

Please, answer the following open-ended questions writing as much as you wish:

Question 1:

What did you like best about the CTM and the TTM?

.....

.....

Question 2:

What did you like least about the CTM and the TTM?

.....

.....

Question 3:

What were the most challenging aspects of each method?

.....

.....

Question 4:

Which method do you believe motivated you more to learn and why?

.....

.....

Question 5:

Which one of the two methods would you suggest a friend and why?

.....

.....

Appendix 4.1: Pilot study tasks and pilot Open Ended Survey

Worksheet 1 for Specialized Passage 1 via Traditional Teaching Method

TASK 1: Reading Comprehension of Specialized Text

Read the passage. Then look at the ten words given and write their possible meaning in English or Greek (the words are in bold and underlined in the text).

European Journal of Special Needs Education (by S. Parsons, A. Lewis & J. Ellins)

The views and experiences of parents of children with autistic spectrum disorder about educational provision: comparisons with parents of children with other disabilities from an online survey.

In a recent review of educational provision for children and young people with special educational needs (SEN) in England by the House of Commons Education and Skills Committee1 (2006), children with autistic spectrum disorder (ASD) were singled out as being in especial need of attention:

Children with Autism Spectrum Disorder (ASD), and social, emotional or behavioural difficulties (SEBD) provide an excellent example of where the old Warnock framework is out of date and where significant cracks exist in the system to the **detriment** of those who fall between them. Far more important, however, is the frustration and upset caused to parents and families by the failure of the system to meet the needs of these children. This needs most urgent resolution. (House of Commons Education and Skills Committee 2006, 18, para. 43).

In its evidence to the Committee, the UK National Autistic Society reported that over 50% of parents of children with ASD were unhappy with their child's current school placement; the same report also states that there are more appeals to the SEN and Disability Tribunal in England about ASD than other disability or SEN (Batten et al. 2006). In addition, high-profile media coverage of comments from parents – such as Maria Hutchings during the UK Election Campaign 2005, who was concerned about the closure of her autistic son's special school and confronted the Prime Minister during a live television broadcast – have placed a spotlight on provision for autistic children and young people. Such concerns were also reflected in the setting up (2000) of the All-Party Parliamentary Group on Autism, which has been very active in political **lobbying** on behalf of children with ASD (for example, Balls 2008). The implication is that the profound social and communication difficulties experienced by children with ASD and the widespread lack of understanding about the condition causes **disproportionate** difficulty for parents of children with ASD in finding appropriate and supportive educational provision for their children compared with families with children with other disabilities.

However, as Whitaker (2007) points out, surveys of parents via parent organisations are likely to highlight greater dissatisfaction with educational provision as this may be one of the reasons for joining a campaigning organisation in the first place. To seek a wider range of views, Whitaker (2007) conducted a postal survey of parents of children with ASD in one local authority in England, with a specific focus on satisfaction with **mainstream** educational provision (published since we undertook our study). Sixty-one per cent (out of 172 respondents) said they were satisfied or very satisfied, providing a more positive overall picture than that suggested by the UK

National Autistic Society. This appears to be more in line with the generally high satisfaction levels about educational **provision** for children with SEN reported in the research literature in both the USA and the United Kingdom (Lewis et al. 2006; O'Connor, McConkey, and Hartrop 2005; McConkey et al. 2004; Crawford and Simonoff 2003; Palmer et al. 2001; Bennett, Lee, and Leuke 1998; Male 1998; Hewson and Sisson 1996; Robertson et al. 1996; Bartlett and Dean 1988; Dawson and Kierney 1988). The main trend is that most parents of children based in either special or mainstream settings were satisfied with the current school placement for their child and favoured their current form of provision over an alternative.

There were, however, important **caveats** in Whitaker's (2007) results: 39% of respondents – a substantial minority – expressed dissatisfaction with mainstream educational provision for their children with ASD. A key factor in such dissatisfaction was the extent to which the school and staff understood the nature of the condition and the individual child's difficulties and needs. The willingness of the school to listen to parents' views and respond flexibly to the child's needs was also correlated with satisfaction. In addition, many of the parents who expressed current satisfaction had also experienced difficulties or concerns about previous schools or classes and identified areas of provision in need of improvement, especially in relation to social skills education. Similar results were found in Canada by Starr, Foy, and Cramer (2001), who surveyed 69 parents of children with **pervasive** developmental disorder (which includes children with ASD) attending a range of educational settings; between one-third and one-half of the group expressed some concerns about their child's progress, especially in relation to social and life schools, as well as a lack of teacher knowledge about their child's condition. Tissot and Evans (2006), reporting on a postal survey of parents of autistic children in the United Kingdom, also noted that whilst a majority of children were being educated in parents' first choice of provision (79% of 738 respondents) and were happy with this (70%), the situation appeared to be **underpinned** by preceding periods of substantial frustration and stress for families, often due to ongoing battles with the local authority. This survey focused primarily on experiences of securing educational provision and so does not tell us a great deal about satisfaction with current provision, which is the focus of the present study.

These findings suggest that there could be particular challenges faced by parents of children with ASD compared with parents of children with other SEN or disabilities. That is not to say that parents of children with non-ASD-related difficulties do not also experience challenges in the education system, but that the specific challenges may be different and, possibly, disability or condition specific (Hodapp, Freeman, and Kasari 1998). Kasari et al. (1999) considered this directly and compared the views of parents of children with ASD and those with children with Down syndrome on questions relating to **inclusive** education in the USA. The groups differed markedly, with over one-half of the parents of children with ASD **favouring** specialised provision, whilst parents of children with Down syndrome largely preferred inclusive settings because of the important perceived advantages of being able to mix and study with non-disabled peers. In particular, parents of children with autism were especially keen that teachers were equipped with specialised teaching skills and knowledge in relation to ASD, in agreement with the findings of Whitaker (2007), Starr and colleagues (2001, 2006) and Tissot and Evans (2006). However, the two groups did not differ on satisfaction measures, with both groups rating this reasonably high. This

suggests that satisfaction measures need to be unpicked so that different aspects of provision are considered.

Words:

detriment = ……..

lobbying = …….

disproportionate= …….

mainstream = …….

provision= …….....

caveats = ……

pervasive= ……...

underpinned=……..

inclusive = ……. ……..

favouring = ……

TASK 2: Fill in the gaps correctly with words from the table:

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

When I was a little boy, I remember myself ……. my mother over my father to ask for money because my father was stricter.

In Greece, a ……. amount of money is spent on buying arms compared to the small number of its population.

There is a serious …….. in this study, which complicates the explanation of the findings.

The smell of burning oil was so ..... that I opened the window to get fresh air.

A couple in their mid forties running their own business, Mr and Mrs Swift didn't know what their retirement ……..had achieved to date and felt insecure about their future.

Before attending this specialized school, Mike had attended another school which was …….. and offered him personal assistance.

All children, no matter how heavily disabled, can be included in regular schools with no …….. to themselves or other students, if the conditions are right.

People with visual disabilities must continue …….. government for changes to the law about accessibility to public transport.

The extent to which autistic children are effectively included in …….. classes depends on a number of key factors.

The professor tried to use examples to …….. his theory.

TASK 3: Make your own sentences using the ten words given:

detriment

……

……

lobby (verb)

……

……..

disproportionate

…….....

.....

mainstream

……

……

provision

…….....

.....

caveats

……

……

pervasive

…….....

.....

underpin……

……..

inclusive

……

…….

favour (verb)

……

……....

TASK 4: Put an X in the square next to the meaning or meanings that the word "caveat" has. Wrong meanings count against your score. The specialized passage 1 and the on-line dictionary entry provided below can help you:

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: (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 ☐

TASK 5: Fill in the following questionnaire

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. 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 learning 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 learning 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. In this class the teacher was an active 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 think I am confident enough 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. I think the teacher is knowledgeable enough for the type of activities I did in this lesson.	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 think that I am not 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. I found it hard 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

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

Full name (optional): …….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: ☐Low ☐Intermediate ☐Advanced

Thank you for your cooperation 

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Worksheet 2 for Specialized Passage 1 via Corpus Teaching Method

TASK 1: Reading Comprehension of Specialized Text

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

European Journal of Special Needs Education (by S. Parsons, A. Lewis & J. Ellins)

The views and experiences of parents of children with autistic spectrum disorder about educational provision: comparisons with parents of children with other disabilities from an online survey.

In a recent review of educational provision for children and young people with special educational needs (SEN) in England by the House of Commons Education and Skills Committee1 (2006), children with autistic spectrum disorder (ASD) were singled out as being in especial need of attention:

Children with Autism Spectrum Disorder (ASD), and social, emotional or behavioural difficulties (SEBD) provide an excellent example of where the old Warnock framework is out of date and where significant cracks exist in the system to the **detriment** of those who fall between them. Far more important, however, is the frustration and upset caused to parents and families by the failure of the system to meet the needs of these children. This needs most urgent resolution. (House of Commons Education and Skills Committee 2006, 18, para. 43).

In its evidence to the Committee, the UK National Autistic Society reported that over 50% of parents of children with ASD were unhappy with their child's current school placement; the same report also states that there are more appeals to the SEN and Disability Tribunal in England about ASD than other disability or SEN (Batten et al. 2006). In addition, high-profile media coverage of comments from parents – such as Maria Hutchings during the UK Election Campaign 2005, who was concerned about the closure of her autistic son's special school and confronted the Prime Minister during a live television broadcast – have placed a spotlight on provision for autistic children and young people. Such concerns were also reflected in the setting up (2000) of the All-Party Parliamentary Group on Autism, which has been very active in political **lobbying** on behalf of children with ASD (for example, Balls 2008). The implication is that the profound social and communication difficulties experienced by children with ASD and the widespread lack of understanding about the condition causes **disproportionate** difficulty for parents of children with ASD in finding appropriate and supportive educational provision for their children compared with families with children with other disabilities.

However, as Whitaker (2007) points out, surveys of parents via parent organisations are likely to highlight greater dissatisfaction with educational provision as this may be one of the reasons for joining a campaigning organisation in the first place. To seek a wider range of views, Whitaker (2007) conducted a postal survey of parents of children with ASD in one local authority in England, with a specific focus on satisfaction with **mainstream** educational provision (published since we undertook

our study). Sixty-one per cent (out of 172 respondents) said they were satisfied or very satisfied, providing a more positive overall picture than that suggested by the UK National Autistic Society. This appears to be more in line with the generally high satisfaction levels about educational **provision** for children with SEN reported in the research literature in both the USA and the United Kingdom (Lewis et al. 2006; O'Connor, McConkey, and Hartrop 2005; McConkey et al. 2004; Crawford and Simonoff 2003; Palmer et al. 2001; Bennett, Lee, and Leuke 1998; Male 1998; Hewson and Sisson 1996; Robertson et al. 1996; Bartlett and Dean 1988; Dawson and Kierney 1988). The main trend is that most parents of children based in either special or mainstream settings were satisfied with the current school placement for their child and favoured their current form of provision over an alternative.

There were, however, important **caveats** in Whitaker's (2007) results: 39% of respondents – a substantial minority – expressed dissatisfaction with mainstream educational provision for their children with ASD. A key factor in such dissatisfaction was the extent to which the school and staff understood the nature of the condition and the individual child's difficulties and needs. The willingness of the school to listen to parents' views and respond flexibly to the child's needs was also correlated with satisfaction. In addition, many of the parents who expressed current satisfaction had also experienced difficulties or concerns about previous schools or classes and identified areas of provision in need of improvement, especially in relation to social skills education. Similar results were found in Canada by Starr, Foy, and Cramer (2001), who surveyed 69 parents of children with **pervasive** developmental disorder (which includes children with ASD) attending a range of educational settings; between one-third and one-half of the group expressed some concerns about their child's progress, especially in relation to social and life schools, as well as a lack of teacher knowledge about their child's condition. Tissot and Evans (2006), reporting on a postal survey of parents of autistic children in the United Kingdom, also noted that whilst a majority of children were being educated in parents' first choice of provision (79% of 738 respondents) and were happy with this (70%), the situation appeared to be **underpinned** by preceding periods of substantial frustration and stress for families, often due to ongoing battles with the local authority. This survey focused primarily on experiences of securing educational provision and so does not tell us a great deal about satisfaction with current provision, which is the focus of the present study.

These findings suggest that there could be particular challenges faced by parents of children with ASD compared with parents of children with other SEN or disabilities. That is not to say that parents of children with non-ASD-related difficulties do not also experience challenges in the education system, but that the specific challenges may be different and, possibly, disability or condition specific (Hodapp, Freeman, and Kasari 1998). Kasari et al. (1999) considered this directly and compared the views of parents of children with ASD and those with children with Down syndrome on questions relating to **inclusive** education in the USA. The groups differed markedly, with over one-half of the parents of children with ASD **favouring** specialised provision, whilst parents of children with Down syndrome largely preferred inclusive settings because of the important perceived advantages of being able to mix and study with non-disabled peers. In particular, parents of children with autism were especially keen that teachers were equipped with specialised teaching skills and knowledge in relation to ASD, in agreement with the findings of Whitaker (2007), Starr and colleagues (2001, 2006) and Tissot and Evans (2006). However, the two groups did

not differ on satisfaction measures, with both groups rating this reasonably high. This suggests that satisfaction measures need to be unpicked so that different aspects of provision are considered.

Words:

detriment = ……..

lobbying = …….

disproportionate= …….

mainstream = …….

provision= …….....

caveats = ……

pervasive= ……...

underpinned=……..

inclusive = ……. ……..

favouring = ……

TASK 2: Fill in the gaps correctly using the corpus concordancer provided:

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

When I was a little boy, I remember myself ……. my mother over my father to ask for money because my father was stricter.

In Greece, a ……. amount of money is spent on buying arms compared to the small number of its population.

There is a serious …….. in this study, which complicates the explanation of the findings.

The smell of burning oil was so ..... that I opened the window to get fresh air.

A couple in their mid forties running their own business, Mr and Mrs Swift didn't know what their retirement ……..had achieved to date and felt insecure about their future.

Before attending this specialized school, Mike had attended another school which was …….. and offered him personal assistance.

All children, no matter how heavily disabled, can be included in regular schools with no …….. to themselves or other students, if the conditions are right.

People with visual disabilities must continue …….. government for changes to the law about accessibility to public transport.

The extent to which autistic children are effectively included in …….. classes depends on a number of key factors.

The professor tried to use examples to …….. his theory.

TASK 3: Make your own sentences using the ten words given:

detriment

……

……

lobby (verb)

……

……..

disproportionate

…….....

.....

mainstream

……

……

provision

…….....

.....

caveats

……

……

pervasive

…….....

.....

underpin……

……..

inclusive

……

…….

favour (verb)

……

……....

TASK 4: Put an X in the square next to the meaning or meanings that the word "caveat" has. Wrong meanings count against your score. The concordance examples below and the specialized passage 1 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 I, and its output O, ...
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, 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: (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 ☐

TASK 5: Fill in the questionnaire

General instruction

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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 learning 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 learning 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. In this class the teacher was an active 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 think I am confident enough 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. I think the teacher is knowledgeable enough for the type of activities I did in this lesson.	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 think that I am not 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 (optional): ……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: ☐Low ☐Intermediate ☐Advanced

Thank you for your cooperation 

Open-Ended Survey questions given to Ss in the pilot study sessions:

Please, answer the following open-ended questions writing as much as you wish:

Question 1: What did you like best about the CTM and the TTM?

……
……

Question 2: What did you like least about the CTM and the TTM?

……
……

Question 3: What were the most challenging aspects of each method?

……
……

Question 4: Which method do you believe motivated you more to learn and why?

……
……

Question 5: Which one of the two methods would you suggest a friend and why?

……
….....

Appendix 4.2: Sample figures and tables of pilot study results

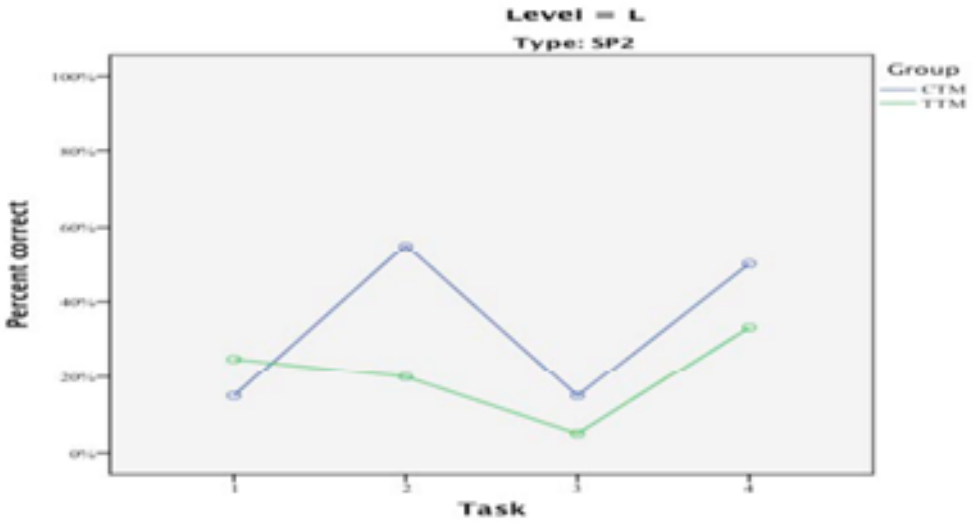


Figure 1: SP2 performance for low learners (=beginners)

Table 1: SP1 taught with CTM descriptive statistics for task 5 (part 1)

	N	Minimum	Maximum	Mean	Std. Deviation
Task 5 score	12	3.57	5.54	4.55	.57
Valid N (listwise)	12				

Table 2: Sample of descriptive statistics for questionnaire about TC (part 2)

Type	N	Minimum	Maximum	Mean	Std. Deviation
SP1_TASK5_2	6	4.30	5.60	5.00	.42
SP2_TASK5_2	6	3.85	4.90	4.55	.42

Appendix 5.1: Quantitative results from the main study

Tests of Between-Subjects Effects

Dependent Variable: performance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	,908[a]	5	,182	6,997	,000	,235
Intercept	17,108	1	17,108	659,019	,000	,853
Type of Passage	,575	1	,575	22,143	,000	,163
level	,326	2	,163	6,273	,003	,099
Type of Passage * Level	,006	2	,003	,117	,890	,002
Error	2,959	114	,026			
Total	21,076	120				
Corrected Total	3,868	119				

a. R Squared = ,235 (Adjusted R Squared = ,201)

Post Hoc Tests

Level

Multiple Comparisons

Dependent Variable: performance

Tukey HSD

(I) Level	(J) Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Beginners	Intermediate	-,0714	,03568	,117	-,1561	,0134
	Advanced	-,1307*	,03696	,002	-,2185	-,0429
Intermediate	Beginners	,0714	,03568	,117	-,0134	,1561
	Advanced	-,0593	,03568	,224	-,1441	,0254
Advanced	Beginners	,1307*	,03696	,002	,0429	,2185
	Intermediate	,0593	,03568	,224	-,0254	,1441

Based on observed means.

The error term is Mean Square(Error) = ,026.

*. The mean difference is significant at the ,05 level.

Homogeneous Subsets

Performance

Tukey HSD[a,b,c]

Level	N	Subset 1	Subset 2
Beginners	38	,3111	
Intermediate	44	,3825	,3825
Advanced	38		,4418
Sig.		,123	,232

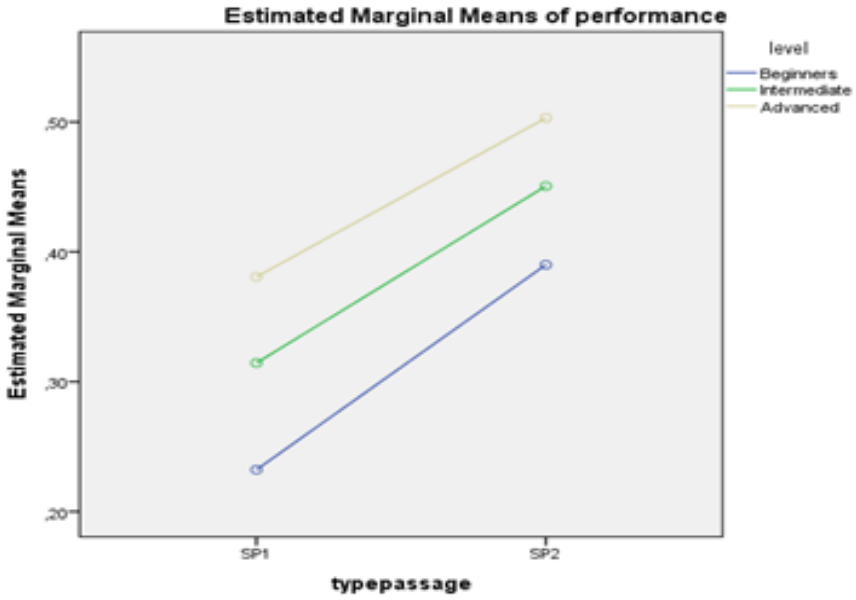
Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = ,026.

a. Uses Harmonic Mean Sample Size = 39,810.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

c. Alpha = ,05.

Profile Plots



Appendix 5.2: Excel ratings for average motivation scores across CTM and TTM from questionnaire part 1

ID	Level	Group	Type	Item1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	average	
Student1	A	CTM	SP1	5	3	3	3	6	5	4	6	4	4	6	5	6	6	5	5	4	5	5	6	6	6	6	2	5	5	5	2	6	5	5	4	6	2	5	4,74	5
Student2	A	CTM	SP1	0	5	5	4	5	4	2	5	5	4	4	5	5	6	5	5	3	5	6	5	5	6	5	2	6	5	5	2	5	5	4	5	2	4	5	4,4	4
Student3	A	CTM	SP1	5	2	3	5	5	4	1	3	4	4	2	4	5	5	5	5	4	5	4	4	6	6	4	4	6	5	5	4	5	3	4	4	2	3	5	4,14	4
Student4	A	CTM	SP1	4	3	5	3	5	3	1	4	4	6	3	6	4	4	3	3	4	5	5	4	5	6	5	2	6	6	4	5	4	5	5	5	1	5	5	4,23	4
Student5	A	CTM	SP1	5	6	5	4	5	4	5	4	5	6	4	5	5	6	5	6	3	6	4	5	6	6	5	2	6	5	1	2	5	4	2	5	5	5	6	4,66	5
Student6	A	CTM	SP1	5	5	4	4	5	5	4	4	3	4	4	3	4	5	5	3	3	4	4	3	6	6	5	2	5	4	2	2	4	2	3	2	3	2	4	3,8	4
Student7	A	CTM	SP1	6	6	6	1	6	5	5	6	6	6	4	6	6	3	6	5	5	6	6	6	6	6	6	1	6	6	4	2	6	6	6	3	5	5	4	5,09	5
Student8	A	CTM	SP1	5	6	6	4	6	5	6	5	4	6	6	6	6	6	4	5	5	6	5	6	6	5	6	2	6	6	6	1	5	6	5	5	6	1	6	5,14	5
Student9	A	CTM	SP1	6	5	6	4	6	5	6	5	4	6	6	6	6	6	5	5	6	5	5	4	6	6	5	0	2	6	6	1	5	6	5	5	6	1	5	4,91	5
Student1	I	CTM	SP1	5	5	5	4	4	5	2	6	4	4	4	1	4	5	5	5	4	4	4	5	6	5	4	3	6	6	6	5	4	4	4	4	3	4	4	4,37	4
Student2	I	CTM	SP1	5	5	5	6	4	2	1	3	5	1	4	3	5	4	6	3	1	4	4	4	4	5	3	5	5	3	3	4	4	4	3	5	1	3	4	3,74	4
Student3	I	CTM	SP1	5	5	4	5	5	3	4	5	4	4	4	5	5	6	5	4	2	5	5	4	5	5	4	3	6	5	1	3	4	5	4	6	2	3	5	4,29	4
Student4	I	CTM	SP1	5	4	5	4	4	4	5	5	5	5	5	5	5	5	5	5	5	4	5	4	4	5	4	4	1	5	5	5	2	4	5	5	4	3	4	3	4,34	4
Student5	I	CTM	SP1	5	4	5	4	4	4	3	6	4	4	5	3	5	5	5	5	3	5	4	5	5	6	4	3	5	4	3	4	5	5	5	3	3	4	5	4,34	4
Student6	I	CTM	SP1	4	5	5	4	5	3	2	4	5	5	3	4	5	6	3	4	2	4	4	3	5	5	3	5	6	5	2	2	4	4	3	3	1	5	4	3,91	4
Student7	I	CTM	SP1	4	3	1	5	2	4	3	5	2	2	2	3	4	6	3	5	6	5	3	3	5	2	5	4	4	1	1	5	2	6	5	2	3	2	4	3,49	3
Student8	I	CTM	SP1	6	5	6	6	6	4	4	6	5	6	5	6	6	6	6	6	3	6	6	5	6	6	4	0	6	6	6	3	5	5	4	6	3	2	4	5	5
Student9	I	CTM	SP1	4	4	5	4	5	4	1	5	4	3	3	4	4	4	3	4	4	4	4	4	3	5	4	4	3	4	0	5	4	3	4	5	4	3	4	3,77	4
Student10	I	CTM	SP1	6	3	6	3	6	2	5	4	4	5	4	6	5	5	6	6	3	4	6	4	5	4	3	2	6	5	6	4	5	5	6	3	2	3	3	4,43	4
Student11	I	CTM	SP1	4	3	1	5	2	4	6	2	2	4	4	4	4	6	4	4	6	5	3	3	4	4	4	5	4	4	1	2	4	3	6	5	3	2	4	3,74	4
Student1	L	CTM	SP1	4	4	5	6	4	5	2	4	5	6	3	3	5	4	5	5	5	4	4	5	5	6	5	4	5	4	5	4	5	5	4	6	4	4	4	4,51	5
Student2	L	CTM	SP1	2	4	6	1	5	4	4	5	6	2	4	3	2	4	1	5	2	3	6	2	4	1	5	2	4	4	1	6	4	2	0	1	5	3	6	3,4	3
Student3	L	CTM	SP1	4	0	6	3	6	4	2	6	5	4	5	3	6	6	5	4	6	4	6	6	6	5	5	1	6	6	5	1	5	6	5	5	5	5	4	4,6	5
Student4	L	CTM	SP1	6	6	6	6	6	4	5	6	5	3	5	6	6	6	6	6	5	6	6	6	6	6	5	5	6	6	6	5	5	6	6	6	6	6	6	5,63	6

Student5	L	CTM	SP1	5	4	5	2	5	5	5	5	5	5	5	5	5	5	6	5	5	5	5	5	5	6	5	5	6	5	5	5	5	5	5	5	5	5	5	4,97	5
Student6	L	CTM	SP1	6	6	6	5	5	4	6	5	5	5	5	5	4	6	6	5	5	5	5	6	4	5	5	6	6	5	5	5	5	6	4	5	4	4	6	5,14	5
Student7	L	CTM	SP1	4	3	1	5	2	4	3	5	2	2	2	3	4	6	3	5	6	5	3	3	5	2	5	4	4	1	1	5	2	6	5	2	3	2	4	3,49	3
Student8	L	CTM	SP1	0	5	6	5	6	4	4	5	6	6	5	4	4	4	5	5	3	5	6	6	6	6	4	3	6	6	6	4	5	6	5	6	4	4	5	4,86	5
Student9	L	CTM	SP1	6	5	5	4	6	4	5	5	6	6	5	5	4	4	5	6	2	4	4	5	5	4	4	6	6	5	5	5	5	5	5	6	4	4	5	4,86	5
Student10	L	CTM	SP1	6	5	4	5	6	5	5	5	5	5	5	5	5	4	5	5	4	5	5	5	4	5	4	4	4	4	4	5	5	5	5	5	5	5	4	4,77	5
Student1	A	TTM	SP1	6	6	4	5	4	4	4	5	5	4	4	5	4	3	5	6	4	4	4	5	4	4	3	2	4	4	2	1	4	4	3	4	1	1	3	3,86	4
Student2	A	TTM	SP1	6	5	4	5	3	2	4	4	4	5	2	4	3	5	5	2	2	2	3	3	5	5	2	4	6	4	5	2	3	5	5	5	1	2	6	3,8	4
Student3	A	TTM	SP1	6	5	5	5	5	2	2	5	5	5	3	5	5	5	6	5	2	5	2	5	5	5	3	2	6	5	2	5	2	5	2	5	2	3	5	4,14	4
Student4	A	TTM	SP1	5	4	2	6	2	4	4	4	4	2	4	6	1	3	5	5	1	4	3	4	6	6	3	5	6	6	5	1	1	3	4	5	1	5	1	3,74	4
Student5	A	TTM	SP1	0	4	5	6	4	2	2	3	3	2	2	5	2	5	5	4	2	3	3	4	5	4	1	2	5	5	5	4	2	5	3	5	5	1	5	3,51	4
Student6	A	TTM	SP1	6	3	5	5	2	3	2	4	2	5	2	6	2	3	6	3	2	2	5	3	6	6	3	3	6	5	5	4	3	3	3	5	3	5	5	3,89	4
Student7	A	TTM	SP1	5	0	1	5	2	4	2	4	3	1	2	5	2	3	4	3	2	4	3	4	5	5	3	5	6	4	5	2	4	4	2	5	3	1	4	3,34	3
Student8	A	TTM	SP1	2	2	1	6	1	3	1	1	1	1	1	1	1	2	2	1	1	1	3	3	1	6	3	4	5	1	2	5	1	1	1	6	1	6	1	2,26	2
Student9	A	TTM	SP1	5	5	5	5	4	3	2	4	3	4	6	5	4	5	4	3	2	3	4	4	4	5	4	4	5	5	5	3	4	5	4	6	1	3	4	4,06	4
Student10	A	TTM	SP1	2	3	2	5	2	3	1	3	4	4	3	4	4	4	5	4	3	4	4	4	5	6	5	4	6	3	5	4	2	4	4	0	4	3	4	3,63	4
Student1	I	TTM	SP1	3	4	4	5	6	3	6	4	2	5	4	6	4	5	5	5	3	4	3	4	2	2	6	4	5	5	6	4	4	6	5	5	6	1	5	4,31	4
Student2	I	TTM	SP1	4	3	4	6	3	4	3	4	2	3	2	5	4	5	4	4	2	4	4	4	5	6	3	3	5	4	3	5	4	4	4	4	1	6	3	3,83	4
Student3	I	TTM	SP1	5	5	5	3	4	3	5	4	5	5	4	5	5	6	6	4	4	5	4	6	6	6	4	3	6	6	6	3	5	6	3	6	2	3	4	4,63	5
Student4	I	TTM	SP1	5	6	5	5	4	4	5	6	1	5	3	5	5	4	6	5	3	4	5	4	6	6	5	2	6	5	5	2	5	4	5	5	2	2	3	4,37	4
Student5	I	TTM	SP1	5	2	5	6	2	1	2	5	2	5	2	5	2	5	5	3	1	3	1	5	5	5	2	2	5	5	4	4	2	3	2	5	1	5	5	3,49	3
Student6	I	TTM	SP1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	1	5	6	1	1	5	5	1	1	6	1	6	1	2,06	2
Student7	I	TTM	SP1	5	4	4	5	4	3	5	5	3	4	4	4	3	4	4	4	3	4	4	4	5	4	3	3	5	4	5	4	4	4	3	3	3	2	4	3,89	4
Student8	I	TTM	SP1	5	3	4	6	3	3	3	3	4	5	5	6	3	5	6	4	3	3	3	3	4	5	4	3	6	6	5	2	3	4	3	6	3	3	3	4	4
Student9	I	TTM	SP1	3	3	2	5	2	3	2	4	2	1	1	5	1	1	3	1	1	1	2	1	6	5	4	4	6	4	3	1	4	2	2	5	2	1	6	2,83	3
Student10	I	TTM	SP1	4	4	5	5	2	3	3	5	2	4	5	2	5	5	4	4	1	4	1	1	6	6	4	4	6	5	5	5	4	1	1	5	4	3	5	3,8	4
Student11	I	TTM	SP1	4	4	2	6	2	4	2	4	2	2	4	5	4	4	4	4	2	4	4	4	5	5	5	4	6	6	4	1	4	2	2	5	5	4	4	3,8	4

Student1	L	TTM	SP1	4	4	6	5	6	6	2	5	3	5	6	5	5	6	5	4	3	1	1	2	4	4	3	4	6	4	5	2	5	2	5	2	3	5	5	4,09	4
Student2	L	TTM	SP1	6	6	6	4	5	4	2	6	3	4	6	6	6	6	6	6	6	6	6	5	6	6	5	2	6	6	6	2	6	6	4	5	3	2	3	4,94	5
Student3	L	TTM	SP1	6	6	6	2	6	4	0	3	5	4	5	6	6	4	6	4	4	5	5	5	6	6	4	4	6	6	6	3	6	5	6	3	5	2	3	4,66	5
Student4	L	TTM	SP1	4	3	5	1	5	5	2	5	4	1	5	3	4	6	4	3	3	5	2	5	5	2	3	3	4	5	5	3	2	5	5	0	1	6	3	3,63	4
Student5	L	TTM	SP1	6	0	5	6	2	2	3	4	4	2	2	4	4	5	6	5	1	5	4	3	6	6	2	4	5	5	5	5	2	5	3	5	1	2	5	3,83	4
Student6	L	TTM	SP1	3	0	4	6	2	2	1	2	3	2	2	1	3	3	4	2	3	2	3	4	6	6	1	2	6	2	1	4	1	4	2	4	2	2	2	2,77	3
Student7	L	TTM	SP1	0	4	3	3	4	3	4	3	4	3	3	4	3	2	3	3	2	2	2	4	2	3	3	4	3	3	3	2	3	3	3	4	3	4	3	3	3
Student8	L	TTM	SP1	6	4	1	6	1	1	2	1	2	2	1	1	1	1	6	2	1	1	1	1	6	6	2	5	6	1	2	6	1	1	1	6	2	6	1	2,69	3
Student9	L	TTM	SP1	3	3	3	6	3	3	2	3	3	3	1	2	3	3	4	3	3	3	3	3	5	5	3	2	6	3	3	2	5	4	3	5	3	5	3	3,34	3
Student1	A	CTM	SP2	6	6	5	1	5	4	6	6	5	5	6	6	6	6	6	5	4	5	5	5	4	5	5	2	5	6	6	2	5	5	5	2	4	5	5	4,83	5
Student2	A	CTM	SP2	5	4	4	6	4	2	6	5	4	6	1	4	3	6	6	3	2	4	4	3	6	6	2	3	6	4	4	3	3	4	4	6	1	1	2	3,91	4
Student3	A	CTM	SP2	5	5	5	5	5	5	5	5	5	5	5	5	2	5	5	5	5	2	2	5	5	5	5	5	5	5	2	2	5	5	2	5	2	2	2	4,23	4
Student4	A	CTM	SP2	4	3	4	5	5	4	3	4	4	5	4	6	3	4	5	5	4	4	4	4	6	6	3	4	6	6	6	6	4	5	3	5	2	6	3	4,23	4
Student5	A	CTM	SP2	6	4	2	5	5	1	2	2	4	4	2	5	2	5	6	2	2	4	2	5	5	5	2	3	5	5	5	2	5	5	1	6	5	5	5	3,83	4
Student6	A	CTM	SP2	6	4	5	3	4	5	2	4	4	5	4	6	4	5	6	5	3	4	5	5	6	6	4	3	6	5	3	3	4	4	4	3	2	5	5	4,34	4
Student7	A	CTM	SP2	6	6	5	6	5	5	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	5	5	6	4	6	5	3	6	4	6	6	5	5,31	5
Student8	A	CTM	SP2	3	4	5	4	5	3	6	4	4	3	3	4	5	4	4	3	3	3	4	3	6	6	3	4	6	4	4	4	4	4	4	5	1	5	5	4,06	4
Student9	A	CTM	SP2	5	4	5	4	5	3	5	5	1	1	6	5	5	6	4	4	3	4	4	4	5	4	4	3	5	5	5	3	5	5	3	4	4	3	3	4,11	4
Student10	A	CTM	SP2	5	5	6	4	5	5	5	4	5	5	5	5	5	5	5	4	4	6	5	5	5	4	4	2	6	6	5	2	5	6	5	4	5	3	5	4,71	5
Student1	I	CTM	SP2	3	4	5	4	4	2	6	3	4	4	4	6	4	3	2	5	3	5	4	4	2	2	4	2	6	6	6	4	5	5	4	2	5	1	4	3,91	4
Student2	I	CTM	SP2	6	5	5	3	3	3	3	3	4	4	4	4	4	5	5	5	4	5	4	5	5	5	4	3	4	3	4	2	4	4	4	3	3	3	4	3,97	4
Student3	I	CTM	SP2	6	5	5	4	4	4	5	6	5	5	5	6	5	5	6	6	4	5	5	5	5	5	4	3	5	6	6	4	5	6	4	4	3	5	5	4,89	5
Student4	I	CTM	SP2	5	5	4	5	4	4	5	4	4	4	4	5	4	4	6	5	4	4	4	5	6	5	4	2	6	5	5	2	4	5	4	4	3	2	3	4,26	4
Student5	I	CTM	SP2	6	5	5	4	4	2	3	5	5	4	4	4	4	5	5	5	4	5	5	5	5	5	4	2	5	5	5	4	5	5	5	4	4	2	5	4,4	4
Student6	I	CTM	SP2	5	5	5	2	5	5	4	5	5	5	5	5	6	5	5	5	5	5	5	5	5	5	5	2	5	5	5	2	5	5	5	2	5	2	5	4,57	5
Student7	I	CTM	SP2	5	4	5	4	5	4	5	5	5	5	4	4	4	5	5	5	4	5	5	5	5	6	4	4	6	5	5	3	4	4	4	4	3	3	4	4,49	4
Student8	I	CTM	SP2	6	4	4	5	3	2	5	4	4	6	6	6	4	5	6	4	4	4	4	5	6	6	4	4	6	6	5	5	6	4	4	6	4	4	4	4,71	5

Student9	I	CTM	SP2	5	5	5	5	5	4	1	4	4	5	4	6	5	5	5	5	4	4	4	5	6	3	5	1	6	6	6	3	4	5	6	5	2	4	4	4,46	4
Student10	I	CTM	SP2	4	4	5	3	5	4	3	4	5	4	6	2	4	5	4	5	4	5	5	4	4	6	4	2	4	4	5	5	4	4	5	3	2	4	4	4,14	4
Student11	I	CTM	SP2	4	4	5	4	4	5	4	4	5	4	3	4	4	4	4	4	4	5	4	4	4	5	6	2	5	5	4	3	4	4	4	5	4	4	4	4,17	4
Student1	L	CTM	SP2	5	5	5	2	2	5	3	4	3	5	3	5	5	5	5	2	2	3	4	5	5	2	3	4	4	2	2	4	4	4	2	2	3	4	4	3,63	4
Student2	L	CTM	SP2	6	2	5	5	6	5	5	6	2	6	6	6	5	6	6	2	2	2	5	2	5	6	5	3	6	6	6	2	5	6	6	6	5	5	2	4,69	5
Student3	L	CTM	SP2	3	4	4	2	5	4	4	4	3	4	4	4	4	4	3	2	4	4	4	4	4	5	3	2	4	4	5	1	4	4	4	2	3	3	3	3,57	4
Student4	L	CTM	SP2	3	4	5	4	4	4	6	6	3	4	5	4	4	5	5	5	3	5	5	4	5	4	3	2	5	4	4	3	3	4	2	4	2	3	5	4,03	4
Student5	L	CTM	SP2	6	4	5	6	5	2	2	5	5	5	2	5	5	5	5	5	2	5	5	5	5	5	5	5	6	2	5	5	5	5	2	5	1	2	5	4,34	4
Student6	L	CTM	SP2	4	2	3	6	4	2	3	3	3	5	2	1	3	2	3	3	3	3	3	3	5	2	2	4	6	3	1	4	3	4	2	4	1	5	3	3,14	3
Student7	L	CTM	SP2	4	4	3	4	4	4	3	4	3	4	4	4	5	3	4	3	4	3	4	3	4	3	4	4	4	3	4	3	4	3	4	4	3	4	3	3,66	4
Student8	L	CTM	SP2	6	6	6	5	5	5	2	5	5	5	5	6	5	5	5	5	5	5	5	5	6	6	5	2	6	6	6	2	5	5	5	5	5	5	5	5	5
Student9	L	CTM	SP2	5	5	5	5	5	4	1	4	4	5	4	6	5	5	5	5	4	4	4	4	5	3	5	1	6	6	3	3	4	4	4	3	3	3	4	4,17	4
Student1	A	TTM	SP2	5	4	5	4	3	4	4	5	4	5	5	4	4	5	5	5	4	5	5	6	5	5	5	5	5	6	5	2	5	4	4	4	4	4	5	4,54	5
Student2	A	TTM	SP2	4	4	4	5	4	4	2	4	4	4	2	4	4	4	4	4	3	4	2	4	4	4	3	3	5	4	4	2	4	2	2	4	2	2	4	3,51	4
Student3	A	TTM	SP2	5	4	4	5	3	3	3	4	3	4	3	4	4	4	4	4	4	5	4	4	5	5	4	4	5	4	4	4	4	5	5	3	4	3	2	3,97	4
Student4	A	TTM	SP2	6	4	5	4	5	5	6	5	4	6	5	6	4	5	6	4	5	4	5	3	5	5	5	1	6	6	5	2	5	4	4	5	1	6	5	4,63	5
Student5	A	TTM	SP2	5	6	5	4	6	4	5	5	6	5	5	5	4	5	5	5	5	5	4	4	6	6	4	2	6	5	2	2	4	1	2	2	1	2	2	4,14	4
Student6	A	TTM	SP2	5	4	4	4	2	4	3	4	3	5	5	3	5	5	6	5	5	4	5	5	6	6	5	2	6	5	4	2	5	5	5	4	2	3	4	4,29	4
Student7	A	TTM	SP2	6	6	6	2	5	4	4	6	6	6	5	5	5	6	6	5	5	5	5	5	6	6	5	1	6	6	4	3	6	5	5	4	4	4	5	4,94	5
Student8	A	TTM	SP2	6	4	3	6	2	2	1	1	2	1	4	6	3	3	5	4	1	3	5	4	6	1	4	4	6	4	6	4	4	1	1	5	1	3	4	3,43	3
Student9	A	TTM	SP2	4	3	5	6	1	2	2	2	3	3	4	2	1	2	5	2	1	3	4	3	6	2	4	2	6	2	4	5	2	4	3	5	1	5	5	3,26	3
Student1	I	TTM	SP2	0	4	5	4	3	3	4	4	3	4	3	4	3	3	4	4	3	3	4	3	4	4	3	3	5	5	5	3	4	4	4	6	4	3	3	3,66	4
Student2	I	TTM	SP2	6	6	6	5	6	3	2	4	5	3	3	4	5	5	5	5	5	5	5	5	5	5	3	3	5	5	5	5	5	6	6	1	3	2	5	4,49	4
Student3	I	TTM	SP2	5	3	2	6	3	4	3	2	3	6	1	4	2	2	4	3	3	3	2	2	5	5	0	4	5	2	3	2	3	1	1	6	4	3	1	3,09	3
Student4	I	TTM	SP2	5	3	3	5	3	2	3	4	3	3	2	3	3	3	5	4	3	4	5	4	5	5	4	4	5	3	5	4	4	3	2	5	2	4	4	3,69	4
Student5	I	TTM	SP2	6	5	5	5	3	4	4	3	4	5	5	4	4	4	6	4	4	4	5	4	6	6	4	3	6	3	4	4	4	4	4	4	4	4	5	4,37	4
Student6	I	TTM	SP2	4	3	3	5	2	2	4	3	3	4	3	3	2	2	4	2	3	3	3	1	4	4	3	5	5	1	2	3	2	1	1	1	1	1	1	2,69	3

Student7	I	TTM	SP2	4	6	6	5	5	6	6	5	4	5	4	5	5	6	4	3	5	3	3	3	4	5	5	4	5	4	3	4	4	4	4	4	5	5	4	4,49	4
Student8	I	TTM	SP2	6	4	4	6	5	1	4	6	4	2	4	6	4	5	6	5	1	4	5	4	6	6	4	4	6	6	5	2	4	3	1	5	3	1	4	4,17	4
Student9	I	TTM	SP2	5	4	3	3	4	3	2	3	4	3	4	5	4	5	3	5	6	4	3	4	5	5	4	3	5	4	5	3	5	4	5	4	2	3	4	3,94	4
Student10	I	TTM	SP2	6	3	3	4	5	5	6	6	5	3	4	5	6	5	4	4	5	6	6	5	5	6	5	4	4	5	5	6	5	4	5	6	4	2	4	4,74	5
Student11	I	TTM	SP2	4	6	6	5	5	6	6	5	4	5	4	5	5	6	4	3	5	4	4	4	4	5	5	2	4	5	2	2	4	4	6	3	2	4	2	4,29	4
Student1	L	TTM	SP2	0	4	3	5	4	2	3	3	4	3	4	3	4	5	5	5	3	4	4	5	4	5	4	4	5	5	5	5	4	4	3	4	1	2	4	3,77	4
Student2	L	TTM	SP2	5	2	4	2	5	1	3	6	2	4	1	6	2	4	1	5	3	6	1	4	4	6	3	6	1	4	2	6	3	3	5	1	6	3	2	3,49	3
Student3	L	TTM	SP2	5	6	6	5	6	5	5	6	5	5	5	5	6	6	6	5	4	5	4	6	6	5	5	1	6	6	6	4	5	6	5	5	5	6	5	5,2	5
Student4	L	TTM	SP2	6	6	6	6	5	5	6	6	6	6	5	5	6	6	6	6	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5,74	6
Student5	L	TTM	SP2	6	5	6	6	6	5	5	5	6	5	6	5	6	6	5	6	6	6	6	6	6	5	5	5	0	6	0	5	6	6	5	6	5	6	6	5,29	5
Student6	L	TTM	SP2	5	5	4	4	5	4	4	4	4	4	5	4	4	4	5	4	4	5	5	4	4	4	4	4	4	5	6	6	6	5	4	5	5	5	4	4,51	5
Student7	L	TTM	SP2	4	5	5	4	5	4	3	3	3	3	3	5	4	5	6	4	3	6	5	4	3	4	6	6	6	5	2	4	4	5	5	4	4	5	3	4,29	4
Student8	L	TTM	SP2	6	5	4	5	5	3	5	5	4	4	5	6	4	5	6	5	4	5	6	6	6	6	4	4	6	6	6	5	4	5	5	5	3	3	4	4,86	5
Student9	L	TTM	SP2	5	5	4	5	5	3	5	4	5	4	4	5	4	5	5	4	4	5	6	5	5	5	4	5	6	4	5	4	5	5	5	4	4	4	5	4,63	5
Student10	L	TTM	SP2	5	5	5	5	4	5	5	4	5	5	6	5	5	4	4	4	5	5	4	5	5	5	5	4	5	4	5	4	4	5	5	5	4	5	4	4,69	5

Appendix 5.3: Tables of calculations of items from motivational questionnaire Part I

Item 1. The place of the lesson was convenient.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	8/9	10/10	18/19	95%	CTM
TTM		7/10	9/9	16/19	84%	54/60
CTM	Intermediate	11/11	10/11	21/22	95%	90%
TTM		8/11	10/11	18/22	82%	TTM
CTM	Beginner	8/10	7/9	15/19	79%	49/60
TTM		6/9	9/10	15/19	79%	82%

Item 2. The tasks required critical thinking which made my learning easier.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	6/9	9/10	15/19	79%	CTM
TTM		6/10	8/9	14/19	74%	49/60
CTM	Intermediate	8/11	11/11	19/22	86%	82%
TTM		6/11	6/11	12/22	55%	TTM
CTM	Beginner	8/10	7/9	15/19	79%	40/60
TTM		5/9	9/10	14/19	74%	67%

Item 3. The way the lesson was taught was a good aid to learning.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	7/9	9/10	16/19	84%	CTM
TTM		6/10	8/9	14/19	74%	52/60
CTM	Intermediate	9/11	11/11	20/22	91%	87%
TTM		8/11	6/11	14/22	64%	TTM
CTM	Beginner	9/10	7/9	16/19	84%	43/60
TTM		6/9	9/10	15/19	79%	72%

Item 4. I need more help to totally understand words dealt with in the lesson.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	6/9	8/10	14/19	74%	CTM
TTM		10/10	8/9	18/19	95%	46/60
CTM	Intermediate	10/11	8/11	18/22	82%	77%
TTM		9/11	10/11	19/22	86%	TTM
CTM	Beginner	7/10	7/9	14/19	74%	52/60
TTM		6/9	9/10	15/19	79%	87%

Appendix 5.3: Tables of calculations of items from motivational questionnaire Part I

Item 5. The tasks were helpful for learning meaning of unknown vocabulary.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	9/9	10/10	19/19	100%	CTM
TTM		4/10	4/9	8/19	42%	55/60
CTM	Intermediate	9/11	9/11	18/22	82%	92%
TTM		4/11	6/11	10/22	45%	TTM
CTM	Beginner	9/10	8/9	18/19	95%	32/60
TTM		4/9	10/10	14/19	74%	53%

Item 6. I was very confident in my abilities to use the passage.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	8/9	6/10	14/19	74%	CTM
TTM		3/10	6/9	9/19	47%	45/60
CTM	Intermediate	7/11	7/11	14/22	64%	75%
TTM		3/11	5/11	8/22	36%	TTM
CTM	Beginner	10/10	7/9	17/19	89%	27/60
TTM		4/9	6/10	10/19	53%	45%
	CTM: 25/30 (83%) TTM: 10/30 (33%)		CTM: 20/30 (67%) T TM: 17/30 (57%)			

Item 7. I enjoyed filling in the sentences in Task 2.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	6/9	7/10	13/19	68%	CTM
TTM		3/10	4/9	7/19	37%	35/60
CTM	Intermediate	5/11	7/11	12/22	55%	58%
TTM		4/11	7/11	11/22	50%	TTM
CTM	Beginner	7/10	3/9	10/19	53%	26/60
TTM		1/9	7/10	8/19	42%	43%

Appendix 5.3: Tables of calculations of items from motivational questionnaire Part I

Item 8. I am very satisfied with the lesson.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	8/9	9/10	17/19	89%	CTM
TTM		7/10	7/9	14/19	74%	53/60
CTM	Intermediate	9/11	9/11	18/22	82%	88%
TTM		9/11	7/11	16/22	73%	TTM
CTM	Beginner	10/10	8/9	18/19	95%	42/60
TTM		4/9	8/10	12/19	63%	70%

Item 9. The tasks required application of problem solving skills which made my learning easier.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	8/9	9/10	17/19	89%	CTM
TTM		4/10	5/9	9/19	47%	49/60
CTM	Intermediate	9/11	11/11	20/22	91%	82%
TTM		2/11	7/11	9/22	41%	TTM
CTM	Beginner	9/10	3/9	12/19	63%	29/60
TTM		4/9	7/10	11/19	58%	49%

Item 10. The method of presentation was easy to follow.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	9/9	8/10	17/19	89%	CTM
TTM		6/10	7/9	13/19	68%	52/60
CTM	Intermediate	8/11	11/11	19/22	86%	87%
TTM		7/11	6/11	13/22	59%	TTM
CTM	Beginner	7/10	9/9	16/19	84%	37/60
TTM		3/9	8/10	11/19	58%	62%

Appendix 5.3: Tables of calculations of items from motivational questionnaire Part I

Item 11. I think I will remember the words any time I meet them in the future.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	7/9	7/10	14/19	74%	CTM
TTM		3/10	7/9	10/19	53%	46/60
CTM	Intermediate	8/11	10/11	18/22	82%	77%
TTM		6/11	6/11	12/22	55%	TTM
CTM	Beginner	8/10	6/9	14/19	74%	34/60
TTM		4/9	8/10	12/19	63%	57%

Item 12. I would like to participate in another similar lesson.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	8/9	10/10	18/19	95%	CTM
TTM		9/10	7/9	16/19	84%	49/60
CTM	Intermediate	7/11	10/11	17/22	77%	82%
TTM		9/11	9/11	18/22	82%	TTM
CTM	Beginner	6/10	8/9	14/19	74%	48/60
TTM		5/9	9/10	14/19	74%	80%

Item 13. The activity was helpful for learning the usage of vocabulary.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	9/9	6/10	15/19	79%	CTM
TTM		4/10	7/9	11/19	58%	54/60
CTM	Intermediate	11/11	11/11	22/22	100%	90%
TTM		6/11	7/11	13/22	59%	TTM
CTM	Beginner	9/10	8/9	17/19	89%	38/60
TTM		5/9	9/10	14/19	74%	63%

Appendix 5.3: Tables of calculations of items from motivational questionnaire Part I

Item 14. I think I received new words in this lesson.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	8/9	10/10	18/19	95%	CTM
TTM		5/10	7/9	12/19	63%	56/60
CTM	Intermediate	11/11	10/11	21/22	95%	93%
TTM		9/11	7/11	16/22	73%	TTM
CTM	Beginner	10/10	7/9	17/19	89%	43/60
TTM		5/9	10/10	15/19	79%	72%

Item 15. The classroom was comfortable enough for the activities.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	8/9	10/10	18/19	95%	CTM
TTM		9/10	9/9	18/19	95%	51/60
CTM	Intermediate	8/11	10/11	18/22	82%	85%
TTM		9/11	10/11	19/22	86%	TTM
CTM	Beginner	8/10	7/9	15/19	79%	54/60
TTM		8/9	9/10	17/19	89%	90%

Item 16. This class experience has helped me improve my reading skills.						
Method	Ability level	SP1	SP2		Total	
CTM	Advanced	7/9	7/10	14/19	74%	CTM
TTM		5/10	8/9	13/19	68%	49/60
CTM	Intermediate	10/11	11/11	21/22	95%	82%
TTM		8/11	7/11	15/22	68%	TTM
CTM	Beginner	10/10	4/9	14/19	74%	42/60
TTM		4/9	10/10	14/19	74%	70%

Appendix 5.3: Tables of calculations of items from motivational questionnaire Part I

Item 17. I found working with the passage very easy.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	6/9	5/10	11/19	58%	CTM
TTM		1/10	6/9	7/19	37%	37/60
CTM	Intermediate	5/11	10/11	15/22	68%	62%
TTM		1/11	6/11	7/22	32%	TTM
CTM	Beginner	7/10	4/9	11/19	58%	19/60
TTM		2/9	7/10	9/19	47%	32%
		CTM 60% 18/30 TTM 13% 4/30	CTM 63% 19/30 TTM 63% 19/30			

Item 18. This class experience has helped me improve my learning skills.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	9/9	8/10	17/19	89%	CTM
TTM		5/10	7/9	12/19	63%	53/60
CTM	Intermediate	11/11	11/11	22/22	100%	89%
TTM		7/11	7/11	14/22	64%	TTM
CTM	Beginner	9/10	5/9	14/19	74%	40/60
TTM		4/9	10/10	14/19	74%	67%

Item 19. The learning materials were convenient.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	9/9	8/10	17/19	89%	CTM
TTM		4/10	8/9	12/19	63%	54/60
CTM	Intermediate	9/11	11/11	20/22	91%	90%
TTM		5/11	7/11	12/22	55%	TTM
CTM	Beginner	9/10	8/9	17/19	89%	36/60
TTM		3/9	9/10	12/19	63%	60%

Item 20. The lesson made me much more productive.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	8/9	8/10	16/19	84%	CTM
TTM		6/10	7/9	13/19	68%	49/60
CTM	Intermediate	8/11	11/11	19/22	86%	82%
TTM		6/11	7/11	13/22	59%	TTM
CTM	Beginner	8/10	6/9	14/19	74%	41/60
TTM		5/9	10/10	15/19	79%	68%

Appendix 5.3: Tables of calculations of items from motivational questionnaire Part I

Item 23. I feel confident to produce relevant sentences on my own in the future.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	9/9	6/10	15/19	79%	CTM
TTM		2/10	8/9	10/19	53%	49/60
CTM	Intermediate	8/11	11/11	19/22	86%	82%
TTM		7/11	7/11	14/22	64%	TTM
CTM	Beginner	10/10	5/9	15/19	79%	35/60
TTM		2/9	9/10	11/19	58%	58%

Item 24. The lesson did not meet my learning needs.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	1/9	4/10	5/19	26%	CTM
TTM		6/10	3/9	9/19	47%	23/60
CTM	Intermediate	5/11	2/11	7/22	32%	39%
TTM		5/11	6/11	11/22	50%	TTM
CTM	Beginner	7/10	4/9	11/19	58%	34/60
TTM		5/9	9/10	14/19	74%	57%

Item 26. I would recommend the lesson to others.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	9/9	10/10	19/19	100%	CTM
TTM		8/10	8/9	16/19	84%	52/60
CTM	Intermediate	9/11	10/11	19/22	86%	87%
TTM		10/11	7/11	17/22	77%	TTM
CTM	Beginner	9/10	5/9	14/19	74%	48/60
TTM		5/9	10/10	15/19	79%	80%

Item 27. The time of the lesson was convenient.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	7/9	8/10	15/19	79%	CTM
TTM		7/10	8/9	15/19	79%	44/60
CTM	Intermediate	4/11	11/11	15/22	68%	73%
TTM		8/11	7/11	15/22	68%	TTM
CTM	Beginner	8/10	6/9	14/19	74%	42/60
TTM		5/9	7/10	12/19	63%	70%

Appendix 5.3: Tables of calculations of items from motivational questionnaire Part I

Item 28. I do not feel confident enough to handle similar tasks in the future.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	2/9	3/10	5/19	26%	CTM
TTM		5/10	3/9	8/19	42%	28/60
CTM	Intermediate	6/11	5/11	11/22	50%	47%
TTM		6/11	5/11	11/22	50%	TTM
CTM	Beginner	9/10	3/9	12/19	63%	32/60
TTM		3/9	10/10	13/19	68%	53%

Item 29. In the future, I will be able to deal with a new but relevant activity and understand unknown words following this learning approach.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	9/9	9/10	18/19	95%	CTM
TTM		3/10	8/9	11/19	58%	55/60
CTM	Intermediate	10/11	11/11	21/22	95%	92%
TTM		8/11	9/11	17/22	77%	TTM
CTM	Beginner	9/10	7/9	16/19	84%	41/60
TTM		4/9	9/10	13/19	68%	68%

Item 30. The lesson made learning more interesting.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	7/9	9/10	16/19	84%	CTM
TTM		7/10	6/9	13/19	68%	51/60
CTM	Intermediate	9/11	11/11	18/22	82%	85%
TTM		6/11	7/11	13/22	59%	TTM
CTM	Beginner	9/10	8/9	17/19	89%	41/60
TTM		6/9	9/10	15/19	79%	67%

Item 31. I enjoyed working with the passage.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	7/9	6/10	13/19	68%	CTM
TTM		4/10	5/9	9/19	47%	47/60
CTM	Intermediate	9/11	11/11	20/22	91%	78%
TTM		3/11	7/11	10/22	45%	TTM
CTM	Beginner	9/10	5/9	14/19	74%	32/60
TTM		4/9	9/10	13/19	68%	53%
		CTM 25/30 83% TTM 11/30 37%	CTM 22/30 73% TTM 21/30 70%			

Appendix 5.3: Tables of calculations of items from motivational questionnaire Part I

Item 32. I felt the need to ask for synonyms of some unknown words.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	7/9	8/10	15/19	79%	CTM
TTM		9/10	7/9	16/19	84%	43/60
CTM	Intermediate	7/11	7/11	14/22	64%	72%
TTM		10/11	8/11	18/22	82%	TTM
CTM	Beginner	8/10	6/9	14/19	74%	49/60
TTM		6/9	9/10	15/19	79%	82%

Item 33. I enjoyed making sentences in Task 3.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	6/9	5/10	11/19	58%	CTM
TTM		2/10	3/9	5/19	26%	28/60
CTM	Intermediate	1/11	5/11	6/22	27%	47%
TTM		3/11	5/11	8/22	36%	TTM
CTM	Beginner	9/10	2/9	11/19	58%	22/60
TTM		1/9	8/10	9/19	47%	37%

Item 34. It was hard for me to deal with Task 4.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	4/9	6/10	10/19	53%	CTM
TTM		3/10	4/9	7/19	37%	32/60
CTM	Intermediate	4/11	5/11	9/22	41%	53%
TTM		4/11	4/11	8/22	36%	TTM
CTM	Beginner	8/10	5/9	13/19	68%	27/60
TTM		5/9	7/10	12/19	63%	45%

Item 35. In Task 4, I could discover different meanings of the given word.						
Method	Ability level	SP1	SP2	Total		
CTM	Advanced	9/9	6/10	15/19	79%	CTM
TTM		7/10	7/9	14/19	74%	49/60
CTM	Intermediate	9/11	10/11	19/22	86%	82%
TTM		7/11	7/11	14/22	63%	TTM
CTM	Beginner	10/10	5/9	15/19	79%	38/60
TTM		2/9	8/10	10/19	53%	63%

Appendix 5.4: Tables of calculations of items from questionnaire Part II (TC) & Excel table

Item 1. The operation of the Thessaly Corpus was stable.				
Ability level	TC	Total		
Advanced	9/9	17/19	89%	95 %
	8/10			OUT OF 60
Intermediate	11/11	22/22	100%	57/60
	11/11			
Beginner	9/10	18/19	95%	
	9/9			

Item 2. The Thessaly Corpus provided content that exactly fitted my needs.				
Ability level	TC	Total		
Advanced	8/9	17/19	89%	86 %
	9/10			OUT OF 60
Intermediate	9/11	19/22	86%	52/60
	10/11			
Beginner	8/10	16/19	84%	
	8/9			

Item 3. I feel good about the idea of a new syllabus which will include the Thessaly Corpus.				
Ability level	TC	Total		
Advanced	8/9	18/19	95%	91%
	10/10			OUT OF 60
Intermediate	7/11	18/22	82%	54/60
	11/11			
Beginner	9/10	18/19	95%	
	9/9			

Appendix 5.4: Tables of calculations of items from questionnaire Part II (TC) & Excel table

Item 4. In this Thessaly corpus lesson I feel I learned more than I used to.				
Ability level	TC	Total		
Advanced	8/9 9/10	17/19	89%	85% OUT OF 60 51/60
Intermediate	8/11 11/11	19/22	86%	
Beginner	8/10 7/9	15/19	79%	

Item 5. The Thessaly Corpus should be used in learning vocabulary.				
Ability level	TC	Total		
Advanced	8/9 9/10	17/19	89%	83% OUT OF 60 50/60
Intermediate	9/11 11/11	20/22	91%	
Beginner	8/10 5/9	13/19	68%	

Item 7. The Thessaly Corpus provided interesting content.				
Ability level	TC	Total		
Advanced	8/9 10/10	18/19	95%	88% OUT OF 60 53/60
Intermediate	9/11 9/11	18/22	82%	
Beginner	9/10 8/9	17/19	89%	

Appendix 5.4: Tables of calculations of items from questionnaire Part II (TC) & Excel table

Item 8. I feel the Thessaly Corpus lessons are more effective than the lessons I used to have.				
Ability level	TC	Total		
Advanced	6/9 9/10	15/19	79%	83% OUT OF 60 50/60
Intermediate	7/11 11/11	18/22	82%	
Beginner	9/10 8/9	17/19	89%	

Item 9. The Thessaly Corpus provided up-to-date content.				
Ability level	TC	Total		
Advanced	9/9 8/10	17/19	89%	77% OUT OF 60 46/60
Intermediate	7/11 9/11	16/22	79%	
Beginner	8/10 5/9	13/19	68%	

Item 10. The Thessaly Corpus was easy to use.				
Ability level	TC	Total		
Advanced	9/9 9/10	18/19	95%	91% OUT OF 60 55/60
Intermediate	11/11 10/11	21/22	95%	
Beginner	10/10 6/9	16/19	84%	

Appendix 5.4: Tables of calculations of items from questionnaire Part II (TC) & Excel table

Item 11. The Thessaly Corpus made it easy for me to find the content I needed.				
Ability level	TC	Total		
Advanced	9/9	18/19	95%	85%
	9/10			OUT OF 60
Intermediate	9/11	18/22	95%	51/60
	9/11			
Beginner	8/10	15/19	79%	
	7/9			

Item 12. The Thessaly Corpus was user-friendly.				
Ability level	TC	Total		
Advanced	9/9	18/19	95%	95%
	9/10			OUT OF 60
Intermediate	11/11	22/22	100%	57/60
	11/11			
Beginner	10/10	17/19	89%	
	7/9			

Item 13. The Thessaly Corpus provided sufficient content.				
Ability level	TC	Total		
Advanced	9/9	18/19	95%	80%
	9/10			OUT OF 60
Intermediate	8/11	17/22	100%	48/60
	9/11			
Beginner	7/10	13/19	89%	
	6/9			

Appendix 5.4: Tables of calculations of items from questionnaire Part II (TC) & Excel table

Item 14. The Thessaly Corpus was easy to access.				
Ability level	TC	Total		
Advanced	9/9 9/10	18/19	95%	93% OUT OF 60 56/60
Intermediate	10/11 11/11	21/22	95%	
Beginner	10/10 7/9	17/19	89%	

Item 15. I had some difficulty in using the Thessaly Corpus due to unfamiliar vocabulary on concordance lines.				
Ability level	TC	Total		
Advanced	6/9 5/10	11/19	58%	73% OUT OF 60 44/60
Intermediate	9/11 7/11	16/22	73%	
Beginner	10/10 7/9	17/19	89%	

Item 16. The Thessaly Corpus provided personalized learning support.				
Ability level	TC	Total		
Advanced	7/9 9/10	16/19	84%	78% OUT OF 60 47/60
Intermediate	8/11 8/11	16/22	73%	
Beginner	7/10 8/9	15/19	79%	

Appendix 5.4: Tables of calculations of items from questionnaire Part II (TC) & Excel table

Item 17. I had some difficulty in using the Thessaly Corpus due to cut-off sentences in concordance output.				
Ability level	TC	Total		
Advanced	4/9	13/19	68%	70%
	9/10			OUT OF 60
Intermediate	9/11	16/22	73%	42/60
	7/11			
Beginner	9/10	13/19	68%	
	4/9			

Item 18. The Thessaly Corpus responded to my requests fast enough.				
Ability level	TC	Total		
Advanced	8/9	16/19	84%	85%
	8/10			OUT OF 60
Intermediate	10/11	21/22	95%	51/60
	11/11			
Beginner	8/10	14/19	74%	
	6/9			

Item 20. I had difficulty in using the Thessaly Corpus due to too many sentences in concordance output.				
Ability level	TC	Total		
Advanced	2/9	7/19	37%	32%
	5/10			OUT OF 60
Intermediate	4/11	7/22	32%	19/60
	3/11			
Beginner	3/10	5/19	26%	
	2/9			

ID	Level	Group	Type	Item1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Student1	A	CTM	SP1	5	5	5	5	6	5	6	2	5	5	5	6	4	5	5	5	5	5	5	5
Student2	A	CTM	SP1	4	4	5	5	5	5	5	5	5	4	4	5	5	5	5	5	2	4	5	0
Student3	A	CTM	SP1	5	5	5	4	4	4	4	3	5	4	4	5	4	5	4	3	3	5	4	2
Student4	A	CTM	SP1	5	4	6	5	5	4	4	4	6	6	4	6	6	6	5	4	5	4	6	1
Student5	A	CTM	SP1	5	4	4	6	6	5	5	4	4	5	6	5	6	6	4	4	6	5	4	5
Student6	A	CTM	SP1	5	3	3	3	3	3	3	0	4	5	4	6	5	6	2	3	2	2	4	2
Student7	A	CTM	SP1	6	6	6	4	6	6	6	5	5	6	6	6	6	6	4	5	4	6	6	1
Student8	A	CTM	SP1	4	5	5	6	6	6	6	6	4	6	5	4	4	5	1	5	2	5	6	1
Student9	A	CTM	SP1	4	5	5	6	5	5	5	6	4	5	6	6	5	6	1	5	1	4	6	1
Student1	I	CTM	SP1	4	4	4	4	4	4	4	6	4	4	4	4	5	4	4	4	5	4	4	4
Student2	I	CTM	SP1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6	5	4	6	3	6
Student3	I	CTM	SP1	5	4	6	5	5	4	5	6	5	5	5	5	4	4	4	4	5	5	4	6
Student4	I	CTM	SP1	5	5	5	4	4	4	5	4	5	5	5	5	5	5	4	5	4	5	5	4
Student5	I	CTM	SP1	5	4	5	5	4	4	4	3	5	4	4	5	4	4	3	4	2	4	5	2
Student6	I	CTM	SP1	5	4	3	3	4	4	4	3	3	4	4	4	2	3	4	4	3	3	5	0
Student7	I	CTM	SP1	5	3	2	2	2	1	3	1	1	5	2	5	3	4	5	3	5	5	4	0
Student8	I	CTM	SP1	6	5	6	6	6	6	6	5	6	6	5	6	6	6	3	5	4	4	5	0
Student9	I	CTM	SP1	4	4	4	4	4	3	5	4	3	4	5	4	4	4	4	3	4	5	4	0
Student10	I	CTM	SP1	4	5	3	6	5	6	4	5	5	6	4	6	6	5	5	4	6	5	4	0
Student11	I	CTM	SP1	5	3	2	2	2	1	3	1	1	5	2	5	3	4	5	3	5	5	4	0
Student1	L	CTM	SP1	5	5	5	4	3	3	4	5	5	4	4	5	3	5	4	3	4	3	4	3
Student2	L	CTM	SP1	2	3	6	1	4	2	5	5	2	6	1	4	3	6	6	2	5	3	6	0
Student3	L	CTM	SP1	5	5	5	6	6	6	5	4	5	4	4	6	5	4	5	4	5	5	5	4
Student4	L	CTM	SP1	5	5	5	5	6	6	6	6	6	4	5	5	6	6	5	6	6	5	6	3
Student5	L	CTM	SP1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Student6	L	CTM	SP1	6	6	4	5	4	5	5	6	4	5	5	6	6	5	5	5	0	4	6	0
Student7	L	CTM	SP1	5	3	2	2	2	1	3	1	1	5	2	5	3	4	5	3	5	5	4	0
Student8	L	CTM	SP1	5	5	5	5	5	5	5	6	5	4	6	6	6	6	4	6	4	6	5	0
Student9	L	CTM	SP1	5	5	5	5	5	5	5	6	6	4	4	6	6	6	4	5	4	6	5	0
Student10	L	CTM	SP1	6	5	5	5	5	5	5	5	5	5	4	4	4	4	4	5	5	5	5	4
Student1	A	TTM	SP1	5	5	6	4	4	5	5	4	5	5	5	5	6	5	3	5	4	5	6	5
Student2	A	TTM	SP1	5	5	5	1	4	4	4	4	4	6	4	4	5	5	2	4	3	3	5	4
Student3	A	TTM	SP1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0
Student4	A	TTM	SP1	4	5	5	5	5	4	5	6	3	4	5	5	4	5	4	4	5	5	5	2
Student5	A	TTM	SP1	2	2	5	5	2	2	5	2	4	2	2	3	2	2	5	2	5	2	2	5
Student6	A	TTM	SP1	4	5	5	5	5	5	4	5	3	5	5	5	5	5	3	5	4	5	4	4
Student7	A	TTM	SP1	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Student8	A	TTM	SP1	1	5	5	5	5	5	5	5	5	5	5	5	5	4	3	4	4	4	5	4
Student9	A	TTM	SP1	5	4	5	5	5	5	5	4	5	4	4	5	4	5	4	4	5	4	5	0
Student10	A	TTM	SP1	5	5	6	6	6	3	4	5	4	5	4	4	4	5	3	5	4	4	4	3
Student1	I	TTM	SP1	5	2	6	6	6	5	3	6	4	4	3	5	3	5	2	4	2	4	5	2
Student2	I	TTM	SP1	5	5	5	5	5	5	5	5	5	4	4	5	4	5	2	3	3	4	4	2
Student3	I	TTM	SP1	5	5	5	6	6	4	4	5	5	5	6	5	5	6	4	5	5	5	5	4
Student4	I	TTM	SP1	5	5	4	4	4	4	5	5	4	4	4	5	5	4	4	5	4	4	4	4
Student5	I	TTM	SP1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0
Student6	I	TTM	SP1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	2	5	5	2
Student7	I	TTM	SP1	5	4	5	4	5	5	4	5	5	5	5	5	5	5	2	4	3	4	5	2
Student8	I	TTM	SP1	5	4	4	4	5	2	2	4	3	5	4	5	2	6	5	2	5	4	5	3
Student9	I	TTM	SP1	5	5	4	4	5	5	5	4	4	3	3	4	4	3	3	3	4	4	3	6
Student10	I	TTM	SP1	4	5	5	5	5	5	5	4	2	5	4	4	5	5	5	4	5	4	4	3
Student11	I	TTM	SP1	4	4	5	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	5	3
Student1	L	TTM	SP1	5	5	5	5	2	2	5	5	2	2	5	2	2	2	3	3	3	2	2	2
Student2	L	TTM	SP1	4	4	5	4	4	5	5	4	4	5	5	6	6	5	4	5	5	4	4	3
Student3	L	TTM	SP1	4	4	4	3	3	4	4	4	4	4	4	5	4	5	3	4	4	4	4	2
Student4	L	TTM	SP1	3	4	4	3	3	4	4	4	3	3	2	2	5	4	4	4	2	3	5	4
Student5	L	TTM	SP1	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	0
Student6	L	TTM	SP1	4	3	3	4	3	4	2	4	3	3	3	4	4	3	4	4	3	3	4	0

Appendix 5.5: Excel figures for above 50% correct performance in Tasks 1-4

ID	Level	Group	Type	TASK1	TASK2	TASK3	TASK4
Student1	A	CTM	SP1	0.400	0.600	0.700	0.000
Student2	A	CTM	SP1	0.200	0.700	0.400	0.000
Student3	A	CTM	SP1	0.500	0.500	0.400	0.000
Student4	A	CTM	SP1	0.200	0.600	0.300	0.000
Student5	A	CTM	SP1	0.100	0.600	0.900	0.660
Student6	A	CTM	SP1	0.300	0.600	0.600	0.000
Student7	A	CTM	SP1	0.500	1.000	0.800	0.660
Student8	A	CTM	SP1	0.900	0.800	0.600	0.660
Student9	A	CTM	SP1	0.800	0.800	0.300	0.660
Student1	I	CTM	SP1	0.000	0.400	0.100	0.000
Student2	I	CTM	SP1	0.300	1.000	0.000	0.000
Student3	I	CTM	SP1	0.300	0.600	0.600	0.660
Student4	I	CTM	SP1	0.000	0.400	0.500	0.660
Student5	I	CTM	SP1	0.200	0.500	0.000	0.000
Student6	I	CTM	SP1	0.400	1.000	0.700	0.000
Student7	I	CTM	SP1	0.700	0.000	0.000	0.000
Student8	I	CTM	SP1	0.600	1.000	0.800	0.660
Student9	I	CTM	SP1	0.900	0.400	0.400	0.330
Student10	I	CTM	SP1	0.600	0.700	0.200	0.330
Student11	I	CTM	SP1	0.800	0.100	0.300	0.000
Student1	L	CTM	SP1	0.100	0.600	0.200	0.000
Student2	L	CTM	SP1	0.400	0.800	0.300	0.330
Student3	L	CTM	SP1	0.100	0.400	0.100	0.000
Student4	L	CTM	SP1	0.200	0.200	0.200	0.000
Student5	L	CTM	SP1	0.200	0.200	0.600	0.000
Student6	L	CTM	SP1	0.700	0.700	0.300	0.000
Student7	L	CTM	SP1	0.700	0.200	0.300	0.000
Student8	L	CTM	SP1	0.200	0.300	0.600	0.000
Student9	L	CTM	SP1	0.400	0.300	0.100	0.000
Student10	L	CTM	SP1	0.200	0.200	0.300	0.000
Student1	A	TTM	SP1	0.500	0.700	0.500	0.330
Student2	A	TTM	SP1	0.600	0.400	0.900	0.000
Student3	A	TTM	SP1	0.200	0.200	0.200	0.000
Student4	A	TTM	SP1	0.200	0.600	0.600	0.000
Student5	A	TTM	SP1	0.100	0.300	0.300	0.000
Student6	A	TTM	SP1	0.000	0.600	0.500	0.660
Student7	A	TTM	SP1	0.100	0.400	0.100	0.000
Student8	A	TTM	SP1	0.100	0.200	0.300	0.000
Student9	A	TTM	SP1	0.000	0.600	0.200	0.000

Student10	A	TTM	SP1	0.100	0.400	0.300	0.000
Student1	I	TTM	SP1	0.400	0.600	0.900	0.000
Student2	I	TTM	SP1	0.200	0.200	0.300	0.000
Student3	I	TTM	SP1	0.200	0.400	0.400	0.000
Student4	I	TTM	SP1	0.200	0.300	0.300	0.000
Student5	I	TTM	SP1	0.100	0.300	0.300	1.000
Student6	I	TTM	SP1	0.100	0.400	0.400	0.000
Student7	I	TTM	SP1	0.100	0.300	0.400	0.000
Student8	I	TTM	SP1	0.000	0.400	0.300	0.000
Student9	I	TTM	SP1	0.200	0.200	0.300	0.000
Student10	I	TTM	SP1	0.000	0.400	0.200	0.330
Student11	I	TTM	SP1	0.200	0.200	0.000	0.000
Student1	L	TTM	SP1	0.300	0.200	0.200	0.000
Student2	L	TTM	SP1	0.400	0.400	0.300	0.660
Student3	L	TTM	SP1	0.400	0.400	0.500	0.660
Student4	L	TTM	SP1	0.100	0.100	0.100	0.000
Student5	L	TTM	SP1	0.200	0.300	0.100	0.000
Student6	L	TTM	SP1	0.200	0.300	0.100	0.000
Student7	L	TTM	SP1	0.200	0.000	0.000	0.000
Student8	L	TTM	SP1	0.000	0.300	0.000	0.000
Student9	L	TTM	SP1	0.200	0.200	0.400	0.000
Student1	A	CTM	SP2	0.700	0.800	0.700	0.330
Student2	A	CTM	SP2	0.800	0.800	0.900	0.330
Student3	A	CTM	SP2	0.600	0.600	0.500	0.000
Student4	A	CTM	SP2	0.100	0.800	0.600	0.330
Student5	A	CTM	SP2	0.100	0.100	0.400	0.000
Student6	A	CTM	SP2	0.300	0.600	0.700	0.330
Student7	A	CTM	SP2	0.700	0.600	0.300	0.330
Student8	A	CTM	SP2	0.800	0.800	0.800	0.000
Student9	A	CTM	SP2	0.700	0.500	0.900	0.330
Student10	A	CTM	SP2	0.500	1.000	0.500	0.330
Student1	I	CTM	SP2	0.200	0.800	0.500	0.000
Student2	I	CTM	SP2	0.600	0.800	0.400	0.330
Student3	I	CTM	SP2	0.300	0.800	0.700	0.660
Student4	I	CTM	SP2	0.200	0.200	0.500	0.330
Student5	I	CTM	SP2	0.600	0.600	0.300	0.330
Student6	I	CTM	SP2	0.600	0.800	0.700	0.000
Student7	I	CTM	SP2	0.300	0.800	0.500	1.000
Student8	I	CTM	SP2	0.300	0.500	0.300	0.000
Student9	I	CTM	SP2	0.500	0.600	0.300	0.000
Student10	I	CTM	SP2	0.700	1.000	0.500	0.330
Student11	I	CTM	SP2	0.600	1.000	0.600	0.000

Student1	L	CTM	SP2	0.800	0.500	0.500	0.330
Student2	L	CTM	SP2	0.700	0.800	0.800	0.330
Student3	L	CTM	SP2	0.700	0.800	0.600	0.330
Student4	L	CTM	SP2	0.000	0.400	0.000	0.000
Student5	L	CTM	SP2	0.300	0.800	0.300	0.330
Student6	L	CTM	SP2	0.200	0.700	0.200	0.000
Student7	L	CTM	SP2	0.500	0.100	0.000	0.000
Student8	L	CTM	SP2	0.500	0.400	0.300	0.000
Student9	L	CTM	SP2	0.600	0.600	0.500	0.330
Student1	A	TTM	SP2	0.100	0.800	0.300	1.000
Student2	A	TTM	SP2	0.300	0.600	0.600	0.000
Student3	A	TTM	SP2	0.500	0.500	0.300	0.000
Student4	A	TTM	SP2	0.600	0.800	0.500	0.000
Student5	A	TTM	SP2	0.600	0.800	0.600	0.660
Student6	A	TTM	SP2	0.100	0.400	0.500	0.000
Student7	A	TTM	SP2	0.700	0.800	1.000	1.000
Student8	A	TTM	SP2	0.400	0.600	0.400	0.330
Student9	A	TTM	SP2	0.600	0.700	0.300	0.330
Student1	I	TTM	SP2	0.500	0.500	0.100	0.000
Student2	I	TTM	SP2	0.500	0.500	0.300	0.330
Student3	I	TTM	SP2	0.400	1.000	0.200	0.000
Student4	I	TTM	SP2	0.500	0.600	0.300	0.660
Student5	I	TTM	SP2	0.000	0.300	0.100	0.660
Student6	I	TTM	SP2	0.400	0.800	0.500	0.330
Student7	I	TTM	SP2	0.600	0.800	0.300	0.000
Student8	I	TTM	SP2	0.400	0.600	0.300	0.330
Student9	I	TTM	SP2	0.700	0.800	0.300	0.660
Student10	I	TTM	SP2	0.600	0.400	0.200	0.000
Student11	I	TTM	SP2	0.800	0.800	0.500	0.000
Student1	L	TTM	SP2	0.300	1.000	0.100	0.330
Student2	L	TTM	SP2	0.500	0.500	0.500	0.330
Student3	L	TTM	SP2	0.300	0.600	0.300	0.000
Student4	L	TTM	SP2	0.700	0.300	0.400	0.000
Student5	L	TTM	SP2	0.700	0.200	0.500	0.000
Student6	L	TTM	SP2	0.600	0.600	0.700	1.000
Student7	L	TTM	SP2	0.500	0.800	0.300	0.000
Student8	L	TTM	SP2	0.600	0.300	0.400	0.330
Student9	L	TTM	SP2	0.600	0.000	0.200	0.000
Student10	L	TTM	SP2	0.700	0.100	0.100	0.000

Appendix 5.6: Excel ratings for the perceived value of the TC across ability levels (motivational questionnaire Part II)

ID	Level	Group	item1	3	5	6	9	13	14	16	18	Average
Student1	A	CTM	5	5	6	5	5	4	5	5	5	5
Student2	A	CTM	4	5	5	5	5	5	5	5	4	4.78
Student3	A	CTM	5	5	4	4	5	4	5	3	5	4.44
Student4	A	CTM	5	6	5	4	6	6	6	4	4	5.11
Student5	A	CTM	5	4	6	5	4	6	6	4	5	5
Student6	A	CTM	5	3	3	3	4	5	6	3	2	3.78
Student7	A	CTM	6	6	6	6	5	6	6	5	6	5.78
Student8	A	CTM	4	5	6	6	4	4	5	5	5	4.89
Student9	A	CTM	4	5	5	5	4	5	6	5	4	4.78
Student1	I	CTM	4	4	4	4	4	5	4	4	4	4.11
Student2	I	CTM	5	5	5	5	5	5	5	5	6	5.11
Student3	I	CTM	5	6	5	4	5	4	4	4	5	4.67
Student4	I	CTM	5	5	4	4	5	5	5	5	5	4.78
Student5	I	CTM	5	5	4	4	5	4	4	4	4	4.33
Student6	I	CTM	5	3	4	4	3	2	3	4	3	3.44
Student7	I	CTM	5	2	2	1	1	3	4	3	5	2.89
Student8	I	CTM	6	6	6	6	6	6	6	5	4	5.67
Student9	I	CTM	4	4	4	3	3	4	4	3	5	3.78
Student10	I	CTM	4	3	5	6	5	6	5	4	5	4.78
Student11	I	CTM	5	2	2	1	1	3	4	3	5	2.89
Student1	L	CTM	5	5	3	3	5	3	5	3	3	3.89
Student2	L	CTM	2	6	4	2	2	3	6	2	3	3.33
Student3	L	CTM	5	5	6	6	5	5	4	4	5	5
Student4	L	CTM	5	5	6	6	6	6	6	6	5	5.67
Student5	L	CTM	5	5	5	5	5	5	5	5	5	5
Student6	L	CTM	6	4	4	5	4	6	5	5	4	4.78
Student7	L	CTM	5	2	2	1	1	3	4	3	5	2.89
Student8	L	CTM	5	5	5	5	5	6	6	6	6	5.44
Student9	L	CTM	5	5	5	5	6	6	6	5	6	5.44
Student10	L	CTM	6	5	5	5	5	4	4	5	5	4.89

Appendix 6: Contents of the attached DVD and CD

CONTENTS OF THE DVD

CORPUS CONCORDANCING TRAINING SESSION

CONTENTS OF THE CD

CONCORDANCE LINES USED IN CHAPTERS 6 AND 7 (eight .txt docs)

1. CONCORDANCE LINES OF *challenging* ABOUT CTM AND TTM (.txt)
2. CONCORDANCE LINES OF *eas** ABOUT CTM (.txt)
3. CONCORDANCE LINES OF *eas** ABOUT TTM (.txt)
4. CONCORDANCE LINES OF *learn* ABOUT CTM (.txt)
5. CONCORDANCE LINES OF *learn* ABOUT TTM (.txt)
6. CONCORDANCE LINES OF *meaning* ABOUT CTM (.txt)
7. CONCORDANCE LINES OF *meaning* ABOUT TTM (.txt)
8. CONCORDANCE LINES OF *tir** ABOUT CTM (.txt)

THESSALY CORPUS (three .txt docs)

GENERAL CORPUS TOTAL

GENERAL-ACADEMIC CORPUS TOTAL

SPECIAL EDUCATION CORPUS TOTAL

TRANSCRIPT OF CTM TRAINING SESSION (one Word doc)