

TEACHERS' ATTITUDES TOWARDS COMPUTER TECHNOLOGY USE IN
VOCABULARY INSTRUCTION

A MASTER'S THESIS

by

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THE DEPARTMENT OF
TEACHING ENGLISH AS A FOREIGN LANGUAGE

BILKENT UNIVERSITY

ANKARA

JUNE 2003

To my daughter, my inspiration, Zeynep Tuna

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VOCABULARY INSTRUCTION

The Institute of Economics and Social Sciences
Of
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ABSTRACT

TEACHERS' ATTITUDES TOWARDS COMPUTER TECHNOLOGY USE IN VOCABULARY INSTRUCTION

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This study examined how teachers perceive the incorporation and use of computer technology resources in language teaching through investigation of teachers' attitudes and approaches to using an online supplementary resource in vocabulary instruction in an EFL context. The program offers such tools as vocabulary level tests, a vocabulary frequency profiler, word and text concordancer, and cloze text and hypertext builder. The aim of the study was to explore the factors that affect teachers' use or non-use of the online program for teaching purposes. The study finally examined whether and to what extent opportunities, facilities, and training provided to teachers contribute to their acceptance and use of these resources.

The data was collected through questionnaires distributed to 97 teachers in an English-medium university. Based on the results of the questionnaires, a stratified

sample of 12 teachers was selected for follow-up interviews. The questionnaire results revealed statistically significant differences between teachers who have undergone computer technology training and those who have not in terms of their attitudes toward computers and the use of computer technology resources in language teaching. Follow-up interviews were used to determine whether positive attitudes or interests led people to undergo training or the reverse. The responses supported both cases for different individuals. The results also showed that simply introducing computer technology resources does not guarantee teachers' use of these in practice. The provision of training is seen as a key factor in both changing attitudes and encouraging teachers in incorporating technology into their instruction.

Key words: Computer technology resources, teacher attitude, concordance, concordancing software, corpus (pl. corpora), data-driven learning (DDL), frequency-based wordlists.

ÖZET

İNGİLİZCE ÖĞRETMENLERİNİN SÖZCÜK ÖĞRETİMİNDE BİLGİSAYAR TEKNOLOJİSİ KULLANIMINA KARŞI TUTUMLARI

Arkın, Erkan

Yüksek Lisans, Yabancı Dil Olarak İngilizce Öğretimi

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Bu çalışma İngilizce öğretmenlerinin dil öğretiminde bilgisayar teknolojisi kullanımını nasıl algıladıklarını araştırdı. Bu araştırma öğretmenlerin sözcük öğretiminde ağ-bağlantılı bir bilgisayar programının kullanımına karşı tutum ve yaklaşımlarını inceleyerek yapıldı. Adı geçen bilgisayar yazılımı şu özellikleri ve programları sunmaktadır: sözcük seviye testleri, metin içinde sözcük yinelenme/sıklık tanımlayıcısı, metin içinde sözcük dizini listeleyicisi, çıkartmalı-metin ve paralel-metin oluşturucusu. Çalışmanın amacı öğretmenlerin bu bilgisayar yazılımını ve sunmuş olduğu özellik ve programları sözcük öğretiminde kullanmasına ya da kullanmamasına neden olan etkenleri ortaya çıkarmaktı. Çalışma ayrıca, sunulan imkanlar ve eğitimin dil öğretiminde bu tür bilgisayar teknolojisi kaynaklarının kullanımına ne ölçüde katkıda bulunduğunu araştırdı.

Veriler eğitim dili İngilizce olan bir üniversitede çalışan 97 Hazırlık öğretmenine dağıtılan anket ve onu izleyen görüşmeler aracılığı ile toplandı.

Görüşmeler, anket sonuçlarının dağılımına göre seçilen 12 öğretmenle gerçekleştirildi.

Anket sonuçları bilgisayar eğitimi alan ve almayan öğretmenler arasında istatistiksel farklılıklar olduğunu ortaya koydu. Bu farklılıklar öğretmenlerin bilgisayar ve dil öğretiminde bilgisayar teknolojisi kullanımına karşı tutum ve görüşlerinde gözlendi. Görüşmeler öğretmenlerin neden bilgisayar teknolojileri eğitimi aldıklarını ve onları bu eğitimi almaya yönlendiren sebepleri araştırdı. Araştırılan, bilgisayarlara duyulan ilginin ve olumlu düşüncelerin mi öğretmenleri eğitim almaya yönlendirdiği, yoksa alınan eğitimin mi bu ilgi ve düşünceleri olumlu yönde geliştirdiği idi. Sonuçlar her iki durumun da geçerliliğini kanıtladı.

Sonuçlar ayrıca gösterdi ki öğretmenlere sadece bilgisayar teknolojisi kaynaklarını sunmak onların bu kaynakları dil öğretiminde kullanmalarını garantilememektedir. Bu bağlamda, dil öğretiminde bilgisayar teknolojisi kullanımı eğitiminin hem öğretmenlerin tutum ve görüşlerini değiştirmede hem de bu teknolojiyi dil öğretiminde kullanmalarında önemli bir etken olduğu ortaya çıkmaktadır.

Anahtar sözcükler: Bilgisayar teknolojisi (kaynakları), öğretmenlerin (bilgisayarlara karşı) tutumları, metin içinde sözcük dizini, metin içinde sözcük dizini oluşturucusu, metinler topluluğu, veriye dayalı öğrenim, sıklık-bazlı kelime listeleri

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CHAPTER I: INTRODUCTION

Introduction

Traditional approaches to language teaching and learning have been challenged by new and innovative approaches based on the latest advances in computer and Internet technology. The vast resources and opportunities that computers and Internet provide have brought about new tools, approaches, and strategies in language teaching and learning. This study examines how teachers perceive the incorporation and use of computer technology resources, in particular online concordancing software, in vocabulary teaching practices. The study specifically investigated teachers' attitudes towards and approaches to using these resources in their vocabulary instruction. The study also explored the factors that affect teachers' use or non-use of computer technology resources for these purposes. The study finally examined whether and to what extent opportunities, facilities and training provided to teachers contribute to their acceptance and use of these resources.

Background of the Study

The interest in and importance given to the role of vocabulary in second and foreign language learning have grown rapidly in recent years. Research studies on first language (L1) and second/foreign language (L2) vocabulary acquisition have turned their focus toward several key issues such as what it means to know a word, how many words native speakers know and how they acquire them, which words learners need to know to use another language, and how they should learn them. The

results of these studies have revealed the need for a systematic and principled approach to vocabulary teaching and learning (Carter & McCarthy, 1988; Coady & Huckin, 1997; Laufer, 1986; Nattinger, 1988; Nation, 1990, 2001; Schmitt, 2000; Stoller & Grabe, 1993; Taylor, 1990).

Among the many methods and approaches applied to vocabulary learning and teaching, the use of technology has gained in importance in recent years. Advances in computer technology have enabled researchers and teachers to use a more systematic and data-based approach, with innovative methods and techniques, in vocabulary instruction and learning. Advanced computer tools and software have made it possible to store, in electronic form, large amounts of both written and spoken texts to identify and analyze lexis in actual contexts and use. The capacity of computers for fast and complex analyses of these texts has allowed researchers to collect extensive information about language use (Biber, Conrad, & Reppen, 1998; Sinclair, 1991). Specifically developed computer software, such as concordance generators, help researchers examine words and language forms in their natural environments within these texts. An electronic concordancer scans the whole body of texts to locate all the occurrences of the word under examination, and lists them on the screen in their immediate context. The researcher can then examine the concordance lists to discover patterns because the compiled lists make the patterns clearly visible. These latest developments in corpus studies, and results drawn from them, have led to new pedagogical implications and innovations in vocabulary instruction, such as revealing patterns a word has, e.g. collocations, and studying words' meanings in authentic context and discovering those patterns and meanings, which may not otherwise be visible (Biber, Conrad, & Reppen, 1998; Chapelle,

2001; Godwin-Jones, 2001; Johns, 1991, 1994; Lewis, 2000; Sinclair, 1991; Tribble & Jones, 1990; Willis, 1990).

KWIC (key word in context) is the most common and useful concordance format for analyzing word meaning. In this format, the word under examination is given, usually highlighted and hyperlinked, in the middle of each line of its immediate context. Clicking on each highlighted word takes the examiner to the full context of the word. Thus, KWIC format enables the examiner, for example a teacher, to study the word in multiple authentic (both written and spoken) contexts, with its lexical and structural relationships with other words. Information gathered from concordances can be used in designing vocabulary and/or grammar activities for students, such as collocation activities, homonyms and synonyms.

Tribble & Jones (1990) argue that concordances present language in a way that enables learners to discover word meaning and new knowledge about language for themselves. Johns (1994) refers to this as Data Driven Learning (DDL). Tribble & Jones (1990) offer a number of activities to foster discovery learning, one of which is deducing the meaning of the key word. In this activity, the teacher replaces the keyword by a blank or a nonsense word, and asks the learners to guess the word. Concordance output, by presenting several contexts of the same word simultaneously, helps learners to guess the meaning of the word from context.

Nation (2001) points out that via concordances, “learners meet vocabulary in real contexts”. He adds that, “the use of concordances provides opportunities for discovery learning, where learners are engaged in words and their usages in real contexts, and are challenged to draw generalizations and patterns of the words and their usage” (p. 111).

Sökmen (1997) envisions that as computer technology improves, researchers and instructors will receive further help in developing and implementing additional ways of explicit vocabulary practice. Corpus tools and concordance software are already available and easily accessed online so that they can be used as supplementary resources for vocabulary teaching and learning purposes.

The School of Foreign Languages (SFL) at Eastern Mediterranean University (EMU) has incorporated computer technology resources into its language teaching. Recently, the curricular team at the SFL - Intensive English Division (IED) has implemented a new lexis project into the English for General and Academic Purposes (EGAP) curriculum. The team has designed new lexis worksheets from frequency-based wordlists, namely the General Service List (GSL) (West 1953), and Academic Word List (AWL) (Coxhead 2000).

The first step in the design and implementation of the project was to evaluate existing course materials in terms of their "vocabulary load" (Pickard, Chan, & Tibbets, 1993). The process was carried out by using a word frequency analyzer (an electronic tool offered in the online vocabulary enhancement software by Cobb (2001), available at <http://132.208.224.131>) to identify the most frequent and general academic words within the course materials taught in the SFL. The texts from English courses of the SFL were analyzed to see which of the GSL and AWL words appear in these texts and how frequently. This analysis revealed that the *Headway* series, taught at the IED, covers around 1600 of the 2000 words in the GSL through explicit focus or embedding in the texts.

As a second step in the implementation of the lexis project, at the IED, where the focus was on the GSL, these words were distributed across the levels, from beginner to intermediate, and grouped together under semantic and topical

categories. The remaining 400 hundred words from the GSL were also added to those categories. The same process was applied to the texts used in the English courses at the Modern Languages Division (MLD), where general academic vocabulary was highlighted. Lexis worksheets were then created based on these words. These lexis worksheets constitute the vocabulary syllabuses for each level in the program and aim to promote growth of vocabulary knowledge through explicit emphasis on and instruction of the words in the GSL and AWL, as well as advance students' incidental acquisition from the course materials.

As a final step, the team added the lexis worksheets into the materials packs. Teachers were informed about the new lexis project, and they were asked to spend a certain amount of classroom time teaching the words in the lexis worksheets through activities and tasks suggested by each lexis worksheet.

In addition to the worksheets created, access to an online vocabulary enhancement resource, *The Compleat Lexical Tutor* (Cobb 2001) was provided for teachers as an alternative resource to refer to either in teaching or revising vocabulary, or in guiding students to engage in explicit vocabulary practice. The software is a concordance-based lexical tutor which offers such tools for vocabulary learning and practice as vocabulary level tests, a vocabulary profiler to highlight frequency-based words within texts, a concordancer, a cloze text builder, and a hypertext-builder. Referring to an earlier version Cobb (1997) says this software “replicates features of incidental learning from natural exposure but in a much compressed time frame” (p. 1).

The teachers and students at the SFL have been introduced to the worksheets and online links through introduction pages in the lexis worksheets section of the supplementary materials packs. The introductory page provides suggestions and

guidelines for teachers and students on how to better make use of the lexis worksheets. An additional document has been sent to the teachers via e-mail, containing hyperlinks that take teachers to different tools of the concordance software, aiming to introduce teachers to the use of the software. Teachers were also informed about the online EAGLE (English for Academic and General Purposes Learning Environment) resource of the SFL and its AWB (Academic Words Building) activities and exercises. The EAGLE is an online resource for students, with links and suggestions, to further study and practice English on their own. The EAGLE has been developed by a specific unit of the Curricular Team called EDCOMPS (Educational Computing Services), a unit responsible for the development and implementation of CAI and CALL at EMU-SFL. The AWB link provided under the EAGLE site offers learners opportunities to practice the words they have covered in class further on their own.

Taking effect from the 2002-2003 academic year, the educational technologies team also offered training sessions on data-driven learning (DDL) and concordance applications for volunteer teachers of the SFL. The training sessions were offered within one of the professional development courses, namely the Certificate on Computers and Teachers Development (CCTD) course.

Statement of the Problem

Several research studies have looked at ways of incorporating corpus tools and computerized concordance applications into classroom activities and language teaching (Cobb, 1999, 2001; Donley & Reppen, 2001; Godwin-Jones, 2001; Horst & Cobb, 2001; Johns, 1991, 1994; Stevens, 1991; Thurston, 1996; Thurston & Candlin, 1998). Other studies (Pickard, Chan, & Tibbets, 1994; Stevens, 1991; Thurston, & Candlin, 1998) acknowledge that for successful implementation of concordance

applications, learners' and teachers' attitudes towards computers should also be taken into consideration and proper guidance and training should be provided to overcome possible problems related to applying concordance tools. However, research that probes second language (L2) or foreign language teachers' perceptions of and attitudes and approaches towards these computer technology resources, concordance software in particular, is limited.

Lam (2000) points to the lack of research investigating language teachers' points of view regarding the use of technology in language instruction. The focus of the most research studies has largely been on students, on how technology affects them, and on the advantages, uses, and effects of incorporating computer technology resources into learning environments. Lam investigated the reasons behind L2 teachers' decisions to use technology for teaching, their choice of using or not using computers in teaching, and the factors influencing these decisions. The results of Lam's study and several others (Albion, 1999; Baylor & Ritchie, 2002; Clark, 2000; Dusick, 1998; Ertmer, Addison, Lane, Ross, and Woods, 1999; Gruich, 2002; Kemp, 2002; Marcinkiewicz, 1994) suggest that teachers' attitudes toward using computer technology resources influence their acceptance and use of these resources. Furthermore, positive attitudes toward these computer technology resources might develop depending on opportunities, facilities and training provided to users of them (Akbaba & Kurubacak, 1998; Clark, 2000; Dexter, Anderson, & Becker 1999; Jones, 2001; Herman, 2002).

This study aimed to look at how teachers at the EMU-SFL perceive the use of computer technology resources, in particular the on-line concordancing software, provided for them. It also examined teachers' attitudes towards and approaches for using these resources in their vocabulary instruction. The effective exploitation and

success of the lexis project are dependent on the teachers' and learners' acceptance and use of the online resource involved. The study investigated the factors influencing teachers' attitudes towards computer technology resources. The study also investigated whether and to what extent training influences teachers' attitudes towards use of computer technology resources in their instruction.

Research Questions

This study addressed the following research questions:

1. What are teachers' attitudes towards computers and the use of computer technology resources in language instruction?
2. To what extent are teachers making use of online vocabulary enhancement software and its tools, offered as a supplementary resource, in their vocabulary instruction?
3. What factors influence language teachers' use or non-use of this resource in their teaching?
4. To what extent opportunities, facilities, and training contribute to teachers' acceptance and use of such computer technology resources in their teaching?

Significance of the Problem

Computer technology, Internet and web-based resources are now in many schools and offer teachers and learners vast resources and opportunities for language teaching and learning. Maximum benefit from these resources can only be achieved through teachers' use of technology in developing materials for the language classroom.

Time, effort, and resources invested in building up the lexis project at EMU-SFL would be wasted if teachers and learners fail to use these tools and resources in

their approaches to vocabulary instruction and learning. The results of this study may be useful in identifying teachers' attitudes towards and approaches to using the computer technology resources provided for them and the reasons behind these attitudes. The study and its results might also suggest better ways of training and equipping instructors with strategies, techniques, and approaches. Such training might be achieved through the implementation of an effective training program on how to better exploit corpus tools and concordance software, as well as computer technology resources. Finally, since many universities and schools in Turkey are not yet aware of this technology and its applicability to language teaching, the study might provide some forms of guidance to language programs throughout the country that want to pursue a similar path in the future.

Key Terminology

The following terms are used throughout the thesis and are defined below:

CALL

"Computer-assisted language learning, a term designating both software and Internet-enhanced approaches" (Hanson-Smith, 2000, p. 163).

Computer technology resources

In the context of this study, 'computer technology resources' is used as a general term referring to any computer, Internet or web-based resource that can be used in language instruction.

Concordance

"A list of occurrences of a word (or words) printed with a context. This context can be single line of characters with the target word printed at the center, a sentence, or another context. One of the most common ways to print out information is the keyword-in-context (KWIC) concordance" (Tribble, 1997a, p. 253).

Concordance generator/ Concordancer/ Concordancing software

“A computer program that allows you to create concordances of words held in a corpus” (Tribble, 1997a, p. 254).

Corpus (pl. corpora)

“A collection of texts (from written or spoken sources); in this case, in a form that can be read by a computer” (Tribble, 1997a, p. 254).

Cloze-text builder

Software that converts texts into cloze passage form with blanks to fill in with appropriate words, allowing the user to specify the vocabulary from frequency levels that the text contains.

Data-driven learning (DDL)

An approach to language learning in which learners are provided with direct access to the data, e.g., through the concordance output, and are encouraged to explore language by stimulating inductive learning strategies (Johns, 1994).

Frequency-based wordlists

General Service List (GSL) (West, 1953): a list of high-frequency words that contains “2000 word families. About 165 word families in this list are function words such as *a, some, two, because* and *to*... the rest are content words, that is, nouns, verbs, adjectives, and adverbs” (Nation, 2001, p. 15). These 2000 most frequent word families of English (headwords and their main inflections and derivations) make up roughly 80% of the individual words (word tokens) in any English text (Nation, 2001).

Academic Word List (AWL) (Coxhead, 2000): “It consists of 570 word families that are not in the most frequent 2000 words of English but which occur reasonably frequently over a very wide range of academic texts” (Nation, 2001, p. 17).

Hyperlink

"Computer code allowing the user to jump to another Web location" (Hanson-Smith, 2000, p. 164).

Hypertext

"Text with links to other text or Web pages, or to visual and audio media, either in software or on the Internet; these branches may further enhance meaning or enrich understanding" (Hanson-Smith, 2000, p. 164).

Hypertext builder

Software which turns texts into hypertext forms: the user can click on any word in the text and hear how the word is pronounced, see the dictionary definition or see the word in a concordance list.

Positive Attitude

In this study the term indicates teachers' beliefs that the use of computer technology resources is helpful in improving instruction and learning.

(World Wide) Web

"Software providing the Internet with multimedia capabilities (derived from wide bandwidth and the Internet's weblike interconnections)" (Hanson-Smith, 2000, p. 165).

Conclusion

In this chapter, a brief summary of the issues related to computer technology use in vocabulary instruction, concordance software in particular, was given. The statement of the problem, research questions, and the significance of the study were presented as well. The second chapter is a review of literature on computer technology use in education in general and in language instruction in particular, as well as teachers' attitudes towards computer technology use in instruction and factors

affecting their attitudes. In the third chapter, participants, materials and procedures followed to collect and analyze data are presented. In the fourth chapter, the procedures for data analysis and the findings are presented. In the fifth chapter, a summary of the results, implications, recommendations, limitations of the study, and suggestions for further research are stated.

CHAPTER II: LITERATURE REVIEW

Introduction

This study examined how teachers perceive the incorporation and use of computer technology resources, in particular online concordancing software, in vocabulary teaching practices. The study specifically investigated teachers' attitudes towards and approaches to using these resources in their vocabulary instruction.

Schools and other institutions have realized that the rapid increase in the availability and accessibility of computers and other technology in today's world highlights the value of educational technology within schools. There is a great deal of support for technology integration (Marcinkiewicz, 1994), and many schools today have started investing considerable amounts of money in technology resources to improve the quality of teaching and learning, and are now looking at ways of successfully incorporating these tools into their curriculum, syllabi, and classrooms. The role and responsibility of teachers is becoming more crucial as they are expected to integrate technology in their instruction. However, not all teachers are willing to incorporate computer technology into their instruction.

This chapter will first present an overview of research related to the use of computer technology resources in language instruction in general and in vocabulary instruction in particular. The role and place of corpus tools and concordance applications in computer assisted instruction (CAI) and learning (CALL) will be emphasized. After that research into factors relating to teachers' attitudes towards and use of technology in the classroom will be presented. Finally, reference will be made to research concerned with the influence of training on developing positive attitudes towards, the adoption and use of computer technology resources in language instruction.

Computer Technology in Language Instruction

Improvement in computer technology has enabled teachers to have access to educational and instructional technology resources available through advances in computer assisted instruction (CAI) and computer assisted language learning (CALL). The history of CAI and CALL dates back to early 1960s. But the major breakthrough in CALL occurred after the 1990s with the evolution and fast development of the World Wide Web (WWW), which allowed access to the huge Internet resources to handle more text, audio and video material (Boswood, 1997; Levy, 1997).

Although technical advances continue to emerge with computer technology and resources, with CALL the focus is more on pedagogy, rather than technology (Boswood, 1997). The emphasis is on ways of exploiting resources rather than keeping up with and investing in the latest technology resources.

CALL promotes a better and more varied learning and teaching process. Computer assisted or mediated teaching and learning, according to Pennington (1996), can increase the variety and diversity of learning opportunities. The amount and variety of types of language input accessible via the computer encourage learners to experiment more with language, take risks and explore language and learning. Different computer technology applications require different roles and skills both for teachers and learners. Similarly, computer tools and resources can be used in many different ways to support teaching and learning, such as using the features of word-processing programs to help students develop their skills in drafting and editing written work; using e-mail to engage students in collaborative learning activities with their friends and teachers within and outside their institutions; working with the Internet in searching, gathering and organizing information; language practice (e.g.

grammar and vocabulary practice exercises, pronunciation work, games) with multimedia CDROMs; and using concordance programs to analyze authentic texts to discover and practice rules and patterns of language (Boswood, 1997).

Computer technology resources and the computer knowledge teachers are required to apply in using them vary, but even with simple tools and limited knowledge computers can still be integrated into language classrooms. One example is the use of word-processing programs. Teachers can use such programs for different activities, such as using the ‘thesaurus’ tool of the program for vocabulary buildup activities (Gardner, 1997; Huntley, 1997); or having pairs of students revise and edit each others’ written work on computers in the lab (Flowerdew & Lam, 1997). Using e-mail for language practice purposes is another possibility. For example, either adapting a traditional information-gap activity for e-mail, in which students exchange information via e-mail (Thornton, 1997), or assigning partner classes or keypals with overseas schools in which students learn to write for communicative purposes (Wong, 1997).

Use of the Internet has become popular in recent years as the World Wide Web brings many useful resources and tools such as audio, video, text, and images that can be used for language teaching and learning purposes in many ways. Some examples are using online newspapers and magazines to enhance reading skills (Scholnik & Heymans, 1997), and assigning students Internet search projects in which they collect, synthesize and present information (Opp-Beckman, 1997).

Another commonly used resource is the CDROM. These are software packages either specifically designed and programmed for language teachers and learners, or which are developed for educational and entertainment purposes for

native speakers of English. CDROM based encyclopedias are one example (Chen, 1997), in which learners are assigned a research task to complete using the CDROM.

Depending on the computer tools and resources used to support teaching and learning, the teacher role varies from minimal, if the CALL materials are in the form of a tutorial-package in which the software acts as the language teaching source and controls instruction (e.g. some CDROM tutorial packages), to extensive in terms of using the computer as a tool (Levy, 1997). A good example is the use of concordancing software and techniques in language instruction and learning, in which tasks and supporting concordance output need to be carefully structured by the teacher (Tribble and Jones, 1990; Johns, 1994). The computer software is used as a tool to process language data, and the content giving data is the database of texts (corpora).

The following section reviews how corpora analysis and concordancing has found its place in ESL/EFL education settings, in vocabulary instruction and learning in particular, as a practical tool used both by teachers and learners.

Corpus Tools and Concordances in Vocabulary Instruction

The use of computerized corpus tools and concordance software has become more practical and popular thanks to the fast and accurate information processing capacity of computers (Biber, Conrad, & Reppen, 1998; Sinclair, 1991). What a computerized concordancer does is search through large masses of electronic texts at a fairly high speed, picking out all instances of a keyword or phrase, then presenting the results in context on the screen.

Large compilations of electronic (computer-readable texts), or *corpora*, have long been the focus of prominent linguists like Sinclair, Lynch, and Biber (Tribble, 1997). Corpus analysis has also been utilized by lexicographers, and dictionary

compilers working with large corpora of millions of words (Ma, 1993; Schmitt, 2000; Willis, 1990). While the potential of language corpora concordancing in language teaching settings is still not fully understood since it is relatively a new application, it has begun to be recognized among researchers and teachers as a useful resource for language teaching and learning (Flowerdew, 1996; Johns, 1997; Lewis, 2000; Nation, 2001; Schmitt, 2000). Levy (1997) cites Tribble and Jones (1990) who provide many ideas on how the concordancer might be used, and Johns (1994) for whom the concordancing tool leads to a new language learning and teaching methodology, which he calls data-driven learning (DDL).

The theory behind DDL is that students improve their general skills by using context in the concordances to deduce the meaning of words and discover language rules for themselves. Johns refers to learners studying concordance lists as "language detectives" (1997, p. 101) whose task is to discover the rules of the language they are studying by finding, identifying and inferring these linguistic rules from context. Hunston (2002) also points out that, "DDL involves setting up situations in which students can answer questions about language themselves by studying corpus data in the form of concordance lines or sentences" (p. 170). Situations set up for language study may vary depending on the purpose: the teacher and student may use a raw concordance list and look at it together not necessarily knowing what they will find, but exploring rules, patterns and meanings; alternatively, the teacher may carefully select and edit the concordance lines, and perhaps create materials based on concordance output in order to reveal the target language feature (Hunston, 2002; Johns, 1994).

Concordancing has lately become associated with computer assisted language learning (CALL) (Johns, 1997; Stevens, 1991). As in the example of DDL,

concordance lists enable teachers and learners to examine words in their natural contexts (Biber, Conrad, & Reppen, 1998; Sinclair, 1991; Tribble, & Jones, 1990) so that they can see how they collocate with other words and which patterns they follow (Lewis, 2000; Willis, 1990). There are many possible uses of concordances: collecting word collocations and word grammar (Drave, 1997); developing active vocabulary in which learners analyze collocation patterns, both frequent and specific (Tribble, 1997b); analysis of common and specific word collocations and grammatical patterns, and correcting grammatical and collocational mistakes (Ma, 1997); creating specific corpora by compiling one's own selected texts for research and teaching purposes (Stevens, 1997), such as analyzing common patterns, analyzing and correcting errors in students' essays.

Here is an example of a concordance list created using on-line concordancing software by Cobb (2001) (The Compleat Lexical Tutor, <http://132.208.224.131/>).

1 suggested that all savings accounts above a certain level should be wiped out
2 e automatic prohibition of mergers above a certain size are unlikely to be
3 w the pool water level, but, when above, a foot valve and strainer must be
4 hoice, as was done in example (b) above. A formal definition of this notion
5 s. Spaced but in line. Behind and above -- a gaudy striped umbrella, on a p
6 would automatically forbid mergers above a given size. This would remove
th
7 , the other Raised a huge beard above A huge Hell's Angel belly. Th
8 ar to be safe from Nucella attack above a length of 40 mm. The optimal
muss
9 arble chimney piece of the saloon. Above, a portrait of the Electress Sophi
10 newly created stock for sale at or above a specific minimum price. Bids to
11 ulders, and approached the window. Over a barely discernible grey sheet of
12 that the endeavour should advance over a broader field rather than trying
13 f Ballymeanoch, facing each other over a card table. I closed my eyes.
14 thorn in the Russians' flesh for over a century. (for further discussion
15 His nylon waterproofs were draped over a chair. What an odd pair we
mak
16 a joint venture agreement to take over a cigarette manufacturing business
17 elvet gown trimmed with grey fur, over a cloth-of-silver undergown. Her h
18 rbachev. But he is a man presiding over a collapsing economy and a discred
19 ng of today. Why? I asked friends, over a cup of tea. Television, said o
20 parately, largely in isolation and over a different time scale. So with th

This list can be exploited in a classroom activity where students are asked to identify

1. contexts in which *above* (lines 1-10) could be substituted by *over*
2. different meanings carried by *over* and *above* in different contexts
3. phrasal verbs (*e.g., take over*)

(ideas for the activities have been taken from Tribble & Jones, 1990, p. 43).

Flowerdew (1996) points out that teachers can refer to concordances as a resource tool concerning rules and examples in grammar and vocabulary use, as a source of authentic language input for teaching, and as input for materials development. Learners can refer to concordancers to produce examples of language to check against what they have used in their writing and identify possible errors; in addition, they can use concordances to check meaning, usage, derived forms and collocations.

Use of concordance output enables students to actively engage with language in an authentic context and challenges them to construct meanings and patterns through analysis of the output. Nation lists the advantages of using concordances for language learning as the following:

- Learners meet vocabulary in real contexts. The information which these provide often differs from non-corpus-based descriptions.
- Multiple contexts provide rich information on a variety of aspects of knowing a word including collocates, grammatical patterns, word family members, related meanings and homonyms.
- The use of concordances involves discovery learning, where the learners are being challenged to actively construct generalizations and note patterns and exceptions.
- Learners control their learning and learn investigative strategies

(2001, p.111).

Studies that Incorporate Corpus Tools and Concordances into Vocabulary Teaching and Learning

The use of language databases or corpora has increasingly become an interest for research and teaching especially in secondary and tertiary educational settings.

This section reviews research carried out examining the use of corpus tools and concordance applications in secondary and university education contexts in terms of the positive results obtained and possible problems learners and teachers may have using concordances.

Positive results

In academic contexts, where students need to learn a large number of vocabulary items in a short period of time, the importance of explicit exposure to the most frequent words by applying corpus tools and concordance software has recently been investigated. The following studies report on the positive results gathered from studying vocabulary through explicit instruction using corpus tools, concordance lists, and materials derived from them.

Donley and Reppen (2001) describe pilot research carried out in Northern Arizona University's (NAU) Program in Intensive English where EAP students' vocabulary acquisition was studied. Using a concordancer, content-specific and academic vocabulary within the course materials were identified. Later, the teachers developed and adapted materials to help students explore academic vocabulary through classroom activities. The results of the study suggested that students knew the vocabulary acquired through explicit instruction much better than the uninstructed vocabulary. Donley and Reppen admit that this pilot study was quite small scale (there were only seven participants) and the results are speculative, but they believe they reveal the importance of highlighting and teaching academic vocabulary within content-based courses. The study, they claim, illustrates the possible uses of corpus tools in teaching and creating opportunities for learning vocabulary.

In a similar study, Cobb (1999) looked at whether using corpus tools and studying words from concordance lists helped learners of EAP in an English as a Foreign Language (EFL) environment to build up their vocabulary knowledge. In the study, Cobb questioned whether, “computerized concordances can help students acquire the immense vocabulary they need in the short time available for their language instruction” (p.345). The results of the study, Cobb argues, indicated that the corpus-based study of words helps learners to acquire lexical knowledge because they study the words in a rich context and can retain words and transfer their knowledge into other contexts.

From his experiences with international students at the University of Birmingham, Johns (1994) suggests that by bringing concordance lists into class, teachers expose students to words in real contexts as used by native speakers. Analyzing these lists help students to deepen the word knowledge they have, discovering and becoming more conscious of the patterns and uses of words in context, and identifying useful phrases and collocations.

Possible problems

Teachers who want to develop materials with access to concordances are likely to face problems especially with students who have no experience in discovery learning and computer-based materials and activities (Stevens, 1991). Learners might need training in how to use concordances (Nation, 2001). Working with long lists of raw concordance data, learners may get confused, get tired and therefore lose attention and interest (Hunston, 2002; Stevens, 1991). Teachers need to be careful in selecting and organizing concordance data to be used in classroom activities or material design (Johns, 1994) so that activities are meaningful and manageable for

students. The following studies report on possible problems learners and teachers may have in exploiting and studying concordances.

Stevens (1991) points out that not all language learners are accustomed to studying raw concordance data independently to search for patterns of language use. He argues that learners need to be given appropriate guidance. Stevens reports on findings of a study which, he argues, provided proper guidance and introduced concordancing to undergraduate Omani science students at the English-medium university in their country. The course materials were scanned into computers and stored in electronic form constituting the corpus of the computer concordancer. Afterwards, material developers created vocabulary exercises using the computer concordance output. Students and teachers were first introduced to concordancing on paper and they were given help to understand the process. After the initial exposure to concordance-derived vocabulary exercises, both teachers and students were taught how to run their own concordances. Stevens concludes that, with proper guidance, even students and teachers with little computer experience can be successfully introduced to concordance tools to explore the target language they are learning and teaching.

Thurston and Candlin (1998) suggest that incorporating corpus tools and introducing learners to the concordance activities require teachers to plan carefully. In a pilot project carried out in Australasia, Canada, and Spain, Thurston and Candlin used concordance software and concordance based materials to teach academic English vocabulary. They reported that teachers and students who have piloted the materials found them a useful, innovative approach to vocabulary learning. The materials provided opportunities for students to observe and learn useful collocations and contextualized grammatical structures. However, exposing learners to the

concordances without sufficient training and information on how to make use of them might cause negative reactions. Thurston and Candlin state that during the initial piloting some students were puzzled by the cut-off sentences of the on-line concordances and overwhelmed by the difficulty of the authentic academic texts. They were also confused by the intense information all chunked in the list form. To overcome this, the teachers emphasized that the students were not expected to understand every word presented, but the materials were intended to help students be familiar with the use and meaning of key words, and collocations and structures with which these key words are associated.

Pickard, Chan, & Tibbets (1994) examined the role and value of concordancers in ESL secondary schools in Hong Kong. They report that concordancers can be useful at the secondary school level if careful planning and appropriate teacher training is carried out to overcome such constraints as limited time and space for computers in classroom instruction, and student and teacher attitudes toward computers. Pickard, et al. reported most students seem to be highly motivated to work and learn with computers. Yet, some students on a few occasions became demotivated and lost interest when the concordancer frequently reported that it did not have an example of the lexical item the students requested. Pickard et al. also reported on teachers' attitudes and stated that in Hong Kong, lessons are conducted in a very teacher-directed style. The teacher is the expert who decides what is correct or acceptable. This suggests a further difficulty: the use of a concordancer with a large corpus of authentic text may pose a threat to a teacher's authority since the concordance output may present data which conflict with the rules of grammar or meaning presented by the teacher. Pickard, et al. also reported that most secondary school teachers in Hong Kong appear not to be very skilled at using

computers and there is a surprisingly high degree of computer phobia among teachers.

The following section investigates teachers' attitudes toward computer technology use in teaching in more depth, with particular emphasis on factors affecting their attitudes towards use of computer technology resources in instruction.

Teacher Attitude towards Computer Technology Use

Although there are computer technology resources available in many schools, and they are believed to improve the quality of teaching and learning, not all teachers are willing to adopt them as much as expected by researchers and school administrators (Marcinkiewicz, 1994; Dusick, 1998). That is to say, despite the rapid development in computer technology, teachers' adoption and integration has been slow (Swan & Mitrani, 1993). The underutilization of computers has discouraged researchers in the field and led them to question the true effectiveness of educational technology and to start investigating what motivates some teachers to use computers in their instruction and causes others to avoid them.

Although teachers today recognize the importance of integrating technology into their instruction and course syllabi (Dupagne & Krendl, 1992), successful implementation is often impeded by both external barriers (lack of access to computers and software, insufficient time to plan, and inadequate technical and administrative support and training), and internal barriers (teachers' beliefs about teaching and computers, teachers' established classroom practices and unwillingness to change, lack of relevance of computer technology resources in teaching, and lack of self-confidence) (Ertmer, Addison, Lane, Ross, and Woods, 1999). In the literature, external barriers to computer technology integration are also referred to as environmental factors or first order barriers. Examples include no support from the

administration, lack of resources, unavailability of supportive staff, and a lack of effective training. Internal barriers are also called social cognitive factors, or second order barriers. Examples include personal and behavioral factors of attitude and anxiety, self-efficacy, willingness to make a time commitment and take personal risk, computer competency and beliefs and knowledge about and perceived relevance of computers (Dusick, 1998).

External Barriers to Computer Technology Use

Prior to in-depth examination of teachers' non-use of technology resources, some researchers believed that providing more resources, and time and training would solve the problem and encourage teachers to integrate technology more (Hoffman, 1997). Hoffman points out that teachers learn computer technology skills in numerous ways: self-study, workshops and conferences, in-service training courses, or coaching, guidance and help from colleagues. However, teachers need to commit a certain amount of time to learn technology skills. Not all teachers can find time to spare, and much research has identified lack of time as one of the major factors preventing teachers using technology resources, especially for those teachers who are already overburdened with large classes, overloaded syllabi, and little assistance.

In their review of the literature on teachers' attitudes toward computers, Dupagne and Krendl (1992) observed that the literature they reviewed generally demonstrates positive teacher attitudes toward computers. However, several studies in Dupagne & Krendl's review reported that teachers share a number of concerns about integrating computers in their instruction: although teachers may believe in the instructional effectiveness of computers, they remain unable to make use of the technology because they have their own limitations, such as time or lack of

knowledge. The primary recommendation emerging from Dupagne & Krendel's review of the literature was teacher training, referring to the need for schools to invest time and resources in in-service and workshop training for teachers.

Similarly, in another study in North America, Indonesia, Chile, and Peru, Ely (1990) concluded that the barriers to teachers' use of educational technology were lack of time and lack of teachers' computer experience and skills. The conditions that must be met to overcome these barriers were additional time to practice with hands-on experience, in-service teacher training and curriculum integration. Ely argued that the people who would ultimately implement educational technology had to possess relevant knowledge and skills.

Later research findings began to realize that removing external barriers and providing more resources may not guarantee teachers' use of technology (Marcinkiewicz, 1994). There may be internal barriers causing teachers to avoid technology. In the following section, research into internal factors affecting teachers' attitudes towards and use of technology in the classroom will be presented.

Internal Barriers to Teachers' Use of Computer Technology

A necessary condition for teachers to use instructional technology (IT) is that they first must learn how to use it. Learning may be individual and independent or with the help of a trainer (Dusick, 1998). Some teachers are willing to attend training while others avoid it. Below, particular internal barriers preventing teachers' use of technology will be presented. These barriers are self-efficacy and innovativeness, attitude and anxiety, and beliefs about the relevance of computers in improving instruction and learning.

Self-efficacy and innovativeness

Accomplishments that contribute to personal efficacy and self-competence related to using computer technology are using computers successfully, observing others using computers successfully, and encouragement through mentoring and tutorials. As recommended by research in the field, teachers with anxiety and low self-efficacy must be provided with opportunities to develop and successfully use computer technology resources.

Marcinkiewicz (1994) argues that teachers are not using computers as much as expected. Marcinkiewicz refers to some researchers who argue that the way to encourage teachers to use more technology resources is to supply them with more technology. These researchers, Marcinkiewicz points out, also argue that teachers need to spend extra time and effort to learn ways of integrating technology into their instruction. According to a survey by Sheingold and Hadley (1990; as cited in Marcinkiewicz), teachers who did use computers spent extra time and effort to integrate them into their teaching. Nonetheless, simply having technology resources, Marcinkiewicz argues, may not be enough to persuade teachers to use them. In a study with 170 elementary school teachers in the United States, Marcinkiewicz investigated two related questions: what stimulates some teachers to integrate computers into their teaching and what causes others not to use them at all? The study found that a number of personal variables, self-competence (belief in ability to use a computer for teaching) and innovativeness (willingness to change) were most closely related to computer use among the teachers. The findings of his research, Marcinkiewicz argues, showed that teachers were largely underutilizing computers despite availability of computers in their schools.

Openness to change was investigated by Baylor and Ritchie (2002). They were interested in investigating teachers' willingness to try new instructional innovations, teachers' beliefs about the relevant importance of computer technology in terms of learners' content acquisition, and the belief that risks can be taken in teaching using computer technology. The study found a strong positive relationship between teachers who had a higher degree of openness to change and the effect of computer technology on learners' higher-order thinking skills and content acquisition. Baylor & Ritchie argue that this may be because innovative teachers are more able to apply new teaching strategies that foster these skills. Baylor & Ritchie emphasize the way teachers use technology in class is a critical measure of its success. The technology itself will not directly change teaching and learning, but the way it is incorporated into instruction will certainly be a critical element in its integration (Office of Technology Assessment (OTA) (1995); as cited in Baylor & Ritchie, 2002). Baylor & Ritchie predict that successful technology integration depends on two variables: teacher openness to change and the extent to which teachers experience and practice using technology.

Albion (1999) refers to other studies which indicate that innovativeness also contributes to teachers' level of computer use because teachers will have to master a variety of powerful tools and redesign their lesson plans around technology-enhanced resources. For individuals who have a low sense of efficacy, innovativeness is not an option. Albion argues, on the other hand, that the research suggests that teachers' beliefs about their self-efficacy in using technology for teaching are directly related to their actual experience and practice with technology.

Attitude and anxiety

Attitudes toward computers influence teachers' acceptance of the usefulness of technology, and also influence whether teachers approach these resources and integrate them into their classroom (Clark, 2000; Akbaba & Kurubacak, 1998). The most common terms used to describe anxiety are computer anxiety and computerphobia (Dusick, 1998; Lam, 2000). Computer anxiety may result from several factors such as low self-efficacy, low expectations of outcome, or lack of encouragement. Degrees of computer anxiety or phobia vary but the user is usually uncomfortable and anxious because of lack of knowledge and experience. Training and raising self-efficacy by providing opportunities to use computers were reported as effective treatment. For example, in a study by Herman (2002) it was found that a professional development program for secondary teachers at an American suburban school positively affected the teachers' attitudes toward computers on a specific, as well as overall scale and teachers' self efficacy.

Beliefs about the relevance of computers in improving instruction and learning

Belief about the relevance of a particular computer technology resource is a key factor in determining whether teachers will utilize that resource or not. Many teachers fail to use technology not because they are technophobic, but because they cannot understand how technology could be utilized in their teaching practices, or have doubts about the usefulness of technology (Lam, 2000). Morton (1994, as cited in Morton, 1996) found that one major factor that prevents teachers from integrating computer technology into their classrooms was lack of knowledge of how it can promote learning. Therefore, knowledge about the usefulness of computer technology is a key factor for integration (Dusick, 1998).

Relationship between Internal and External Barriers

Research has revealed that simply providing computer technology resources may not always guarantee teachers' use of them in their instruction. It seems that internal factors also contribute to the use of these resources. A study by Ertmer, et al. (1999) investigated the relationship between the external and internal barriers to technology implementation by observing and interviewing several teachers within an elementary school who had achieved varying levels of integration. The study was designed to look at differences in teachers' use of technology, their perceptions of the value or role of technology in the classroom, and their beliefs about what constitutes effective classroom practice. The results of the study suggest that teachers' internal beliefs about technology interact with external barriers to facilitate or limit teachers' technology use. Ertmer, et al. argue that although it is important to know that teachers need more equipment or more time to plan for technology use, it may not always be enough. It may also be important to understand teachers' reasons for technology use or non-use and their beliefs about the usefulness of technology in teaching and learning practices. Ertmer, et al. emphasize that internal barriers may persist even when external barriers are removed, thus they suggest that while addressing barriers at each level of technology integration, the following strategies should be taken into account:

1. focus on pedagogical issues, as well as technological issues during training;
2. provide a broader vision of technology integration by explaining the basis and rationale and grounding for better teaching and learning;
3. provide help and guidance by models, mentors, and assistance from other colleagues in the implementation process;
4. and provide opportunities for teachers to reflect, collaborate, and discuss the integration with colleagues

(1999, p. 12).

Gruich (2002) reports on a study which suggest that general attitudes toward computers are a key predictor of adoption. The study investigated community college faculty attitudes in 15 public community and junior colleges selected in southern US toward utilization of technology, the flexibility of technology, and technology efficacy among faculty in community colleges. The study found that there was a relationship between attitudes toward teaching with technology and certain variables. These variables were teachers' beliefs about the usefulness of technology resources and their perception of flexibility and integration of technology in instruction.

Ely (1990) warns that teachers should change their beliefs about how technology is used in improving learning and teaching. Teachers should not expect technology to do all the work and answer all the questions. Teachers should learn to see technology resources as tools that they can manipulate to create opportunities for a better learning and teaching environment.

Kemp (2002) argues that the studies and theories previously cited have demonstrated the relevance of a range of variables such as, teachers' attitudes towards computers, teachers' self-efficacy, teachers' innovativeness and teachers' past experiences of educational technology in the classroom. However, according to Kemp, many studies fail to identify the extent to which these variables influence teachers' attitudes, self-efficacy beliefs and practices in relation to technology; nor do they look for a relationship between the variables and teachers' willingness to adopt technology into their classrooms. Kemp's study examined the influence these variables have on teachers' implementation and use of technology in their classrooms. She found that teachers who spent more time in professional development were found to have more positive attitudes toward technologies, (higher

scores on self-efficacy practices, and higher innovativeness scores) than their colleagues who spent less time in such activities.

The common emerging issue from most of the studies reviewed is the provision of training. Most research agrees on the impact of training in overcoming both external and internal barriers to the integration of computer technology resources in instruction. The following section will go into more detail on the impact of training on developing positive attitudes towards computers, as well as computer technology adoption and integration.

The Impact of Training on the Use of Computer Technology Resources

Research has shown that teachers who have more experience with computer technology are more comfortable using and have positive attitudes towards computer technology resources, while those with computer anxiety tend to avoid using them (Akbaba & Kurubacak, 1998). The expansion and success of instructional technology, then, depend greatly on teachers' attitudes towards and ability to use them in their instruction (Clark, 2000). Some researchers found that provision of opportunities and training to enable teachers to experience computer technology resources and learn how to use them in instruction is crucial for teachers' acceptance and use of them (Clark, 2000).

Tuzcuoglu (2000) investigated teachers' attitudes towards CALL in the Foreign Languages Department (FLD) at a university in Turkey. Tuzcuoglu stated that despite the availability of a computer lab, and a request from the administration that teachers use the lab for teaching, most teachers did not make use of computers for teaching purposes. Tuzcuoglu's results revealed that teachers had positive attitudes towards using CALL in language instruction and were willing to teach with computers. The teachers agreed that using CALL would increase students' interest

and language learning abilities. However, almost none of the teachers had experience with using CALL and thus needed to learn to use computers for teaching. Tuzcoglu offered suggestions about ways of using CALL in teaching English, highlighted the need for training teachers and revision of the curriculum to better integrate CALL resources.

Another study in Turkey, by Aydogdu (2001), investigated the level of educational technology use in teaching English among language instructors across eight state universities. The results revealed that teachers who have undergone training used educational technology resources in language instruction more than those who have not. The study highlights the need for pre-service and in-service educational technology training programs for ELT teachers. It also suggests that the existing training programs should give more emphasis to the pedagogical potential of educational technology resources.

After analysis of the results of their study with 47 teachers from 20 K-12 schools in the US, in which they examined the use of computers by teachers and their perception of the impact of computers on their classroom practice, Dexter, Anderson, & Becker (1999) concluded that using computers in the classroom in a teacher- or learner-centered way is the teacher's decision. To make this decision, they argue, teachers will draw upon their knowledge and experience of using technology tools in the classroom. For that knowledge to be constructed and developed further, teachers must have opportunities to work with computers and technology resources, models of how these resources and tools can be used in instruction, and opportunities to reflect on the role of the computer in the learning process. In other words, teachers must be provided with opportunities to construct their knowledge about educational technology. School administration, trainers and curriculum planners offering

technology should provide models of effective technology implementation and opportunities for learning, as well as positive reinforcement and support.

One of the major incentives for teachers to use computers might be to convince them of the benefits of technology in language instruction. As teachers become convinced of the learning benefits that may result from the adoption of new instructional practices, they may become more motivated to adopt these practices. As the above review of research has revealed, the way to convince teachers is to provide them with models, opportunities and training support. Jones (2001) identifies the same issue and argues that in order to better exploit the rich potential of computer assisted instruction schools should provide teachers with adequate training and time to develop pathways for incorporating technology into instruction and student learning.

Training content

In-service training programs in most schools are usually in the form of brief workshops that make no provision for follow-up assistance or opportunity for evaluation and feedback. Consequently, teachers don't apply in their classrooms what training programs offer. Kassen and Higgins (1997) highlight that in addition to the need for teachers to have more access to computer technology education, there is also a need to improve the design of training opportunities. Based on the report of the United States Department of Education in 1995, Kassen and Higgins state that,

technology training is most effective when it (1) offers teachers ample time to practice and experiment with technology and to share ideas; (2) provides sustained support rather than a one-shot training session; and (3) receives institutional commitment, thus clearly demonstrating to teachers that technology is not just another bandwagon

(p. 265).

Kassen and Higgins refer to a sample in-service training program at the Modern Languages Department of Catholic University of America, through which they addressed technology education by identifying three key issues. First was ensuring teacher comfort during training process. The number of participants in the workshops was limited so that there were enough tutors available for consultation during and between the workshops. Another concern was integrating computer technology resources into the curriculum; integration required not simply the use of computer resources in the classroom but their use to support curriculum goals. Lastly, in addition to providing opportunities for learning about computers and applying that knowledge, the workshop sessions were organized to provide time for reflection and discussion of the teachers' experiences. Kassen and Higgins conclude that the example training program demonstrated how these issues can be incorporated into schools to prepare teachers to continue their exploration of computer technology resources in foreign language education.

Conclusion

In order to promote quality in instruction with technology, professional development is essential to ensure teachers are prepared to meaningfully incorporate technology into the curriculum. Herman (2002) believes that the integration of technology is still in its beginning stages and has not yet been fully acknowledged and accepted by teachers. The effectiveness of computer technology in education is largely dependent upon the willingness of teachers to meaningfully integrate it into the curriculum. In order to ensure that teachers have the ability to effectively utilize computer technology resources throughout the curriculum, schools need to develop programs to train teachers. Baylor & Ritchie (2002) predict that successful technology integration depends on two variables: teacher openness to change and the

extent to which teachers experience and practice with technology. Regardless of the amount and the sophistication of technology resources, teachers will not use them unless they have the knowledge, skills, and attitudes necessary to integrate these resources into their teaching. Integration occurs, they argue, through both self-education and in-service training provided by the institutions.

CHAPTER III: METHODOLOGY

Introduction

This study investigated attitudes of teachers at Eastern Mediterranean University, School of Foreign Languages (EMU, SFL) towards computers and the use of computer technology resources in language instruction. The study specifically looked at how teachers perceive and make use of an online vocabulary enhancement program and its possible classroom applications. The online program is a concordance-based software, the Complete Lexical Tutor- CLT, offered as a supplementary resource for teachers to use in teaching vocabulary. The study also aimed to explore the factors that affect teachers' use or non-use of this online resource.

The study addressed the following research questions:

5. What are teachers' attitudes towards computers and the use of computer technology resources in language instruction?
6. To what extent are teachers making use of online vocabulary enhancement software and its tools, offered as a supplementary resource, in their vocabulary instruction?
7. What factors influence language teachers' use or non-use of this resource in their teaching?
8. To what extent opportunities, facilities, and training contribute to teachers' acceptance and use of such technology resources in their teaching?

This chapter presents the setting in which the study was conducted, identifying the participants of the study, the instruments for data collection and the data collection and analysis procedures.

Setting and Participants

This study was conducted at Eastern Mediterranean University, School of Foreign Languages (EMU SFL). EMU is an English-medium university. The SFL is comprised of two divisions: The Intensive English Division (IED), which prepares students for their academic studies, and the Modern Languages Division (MLD), which offers English language development courses for students at faculties.

The education offered at SFL-IED is based on a modular system. Each semester is divided into two modules and each module lasts for eight weeks. Students are placed at appropriate levels from beginner to intermediate at the beginning of the academic year. They take a level test at the end of every eight weeks, and those who score 60 or above move up one level. At the end of the first semester, students who complete the intermediate level along with those who have not exceeded a 30% absenteeism limit in the upper-intermediate level, have the right to take the proficiency test to enter their departments. After each level test, the groups of students change. Likewise, the teachers change the groups they teach every module. The spring semester starts with the third module.

The MLD English courses are semester based. These courses are referred to as service English courses and they last for six semesters. There are three levels: basic, mainstream, and advanced. Students who pass the proficiency test are placed into one of these courses, according to their score on the proficiency test, when they start their first year of their major. This study was conducted during the third module, in the spring semester. The questionnaire was administered in the fourth week of the module and the interviews were carried out in the sixth week.

The study participants were teachers of the SFL, both from the IED and MLD. At the IED, there were ninety-five teachers who taught at pre-intermediate,

intermediate and upper-intermediate levels. Twenty of these had taken part in the piloting of the questionnaire, so the number of teachers targeted at the IED was seventy-five. There were sixty teachers in total teaching at the MLD and ten of them had taken part in the piloting procedure. For the questionnaire, fifty basic, mainstream, and advanced level teachers were targeted. The total number of SFL teachers targeted for the questionnaire was 125. Ninety-seven teachers responded and took part in the questionnaire.

Among the teachers the study specifically looked at two different groups and aimed to compare their attitudes towards the use of computer technology in language teaching: those who have taken the Certificate on Computers and Teachers Development (CCTD) training course and those who have not. The study also targeted one specific group and their attitudes toward and approaches to technology incorporation in vocabulary instruction when compared with other teachers. This specific group of teachers, a total number of fourteen, comprised those who took the CCTD course in 2002 – 2003 academic year and examined data-driven language learning (DDL) and concordance applications (CA) of online vocabulary enhancement tool, the CLT. The remaining teachers of the SFL have only had a simple introduction to the online resource and its tools.

The instructors participating in the study ranged from 21 to more than 45 years old. They had from one to more than seventeen years teaching experience. Details of the questionnaire participants' backgrounds can be seen in Table1 below:

Table 1

Background Information about Questionnaire Respondents

Age	20-25	26-30	31-35	36-40	41-45	Above 45	Total
Numbers of Teachers	5	47	33	3	5	4	97
Sex	Male		Female				
Numbers of Teachers	26		71				
Years of teaching experience	Less than 1 year	1-4	5-8	9-12	13-16	Above 17	
Numbers of teachers	0	17	45	23	9	3	
Currently teaching at:	IED		MLD				
Numbers of Teachers	68		29				
CCTD	Those who have taken it			Those who haven't taken it			
Numbers of Teachers	42			55			
DDL and Concordance applications sessions	Those who have taken it			Those who haven't taken it			
Numbers of Teachers	14			85			

Twelve participants were chosen for the interview according to the answers they gave on the questionnaire. Factors used in stratifying interview candidates were whether they have taken the CCTD training course or not, and whether they make use of the CLT tools in their vocabulary instruction or not. Ages of the interviewees range from 24 to 42. The least experienced interviewee has three years teaching experience, and the most experienced interviewee has seventeen years teaching

experience. The background information about the interview participants is provided below in Table 2:

Table 2

Background Information of Interview Participants

Participants	Age	Years of teaching experience	Division	Has completed CCTD? (year completed)	Has signed up for DDL and CA sessions?	Makes use of the CLT in vocabulary instruction?
A1	33	12	IED	Yes ('99)	-	No
A2	24	3	IED	Yes ('02)	-	No
A3	38	17	MLD	Yes ('01)	-	Yes
A4	27	6	MLD	Yes ('99)	-	No
A5	33	6	IED	No	-	No
A6	32	8	MLD	No	-	No
A7	28	7	MLD	No	-	No
A8	32	8	IED	Yes ('03)	Yes	No
A9	28	5	MLD	Yes ('03)	Yes	No
A10	42	15	IED	Yes ('03)	Yes	No
A11	26	4	IED	Yes ('03)	Yes	Yes
A12	30	7	IED	Yes ('03)	Yes	Yes

Instruments

Two data collection instruments, a questionnaire and interviews, were employed in this study to gather data. Questionnaires, among other data collection instruments, are an easy and practical means of gathering data from a large population (O'Maley & Chamot, 1990). For this study, semi-structured interviews were conducted. According to Meriam (1998), semi-structured interviews “are guided by a list of questions or issues to be explored, but neither the exact wording nor the order of the questions is determined ahead of time” (p.74). The reason for

designing a semi-structured interview schedule was to allow both the participants and the researcher to elaborate on issues, and to ask for or add further comments and explanations.

Questionnaire

The questionnaire (Appendix A) was the first phase of the study. The reason for utilizing a questionnaire as the first phase of the study was to gather data from the whole population, the teachers of the SFL. The questionnaire was composed of Likert-scale items, except five open-ended response type items. Likert-scale items are a useful and effective means of determining opinions and attitudes (Turner, 1993). Sections Two, Three, Four, and Five of the questionnaire aimed to measure teachers' attitudes towards the use of computer technology resources in language instruction, their opinions about the lexis project and new approach to vocabulary which aims to place more emphasis on teaching the most frequent general and general academic words in English, and to measure the reasons teachers stated for using or not using the tools of the CLT. Table 3 below shows the number of questions in the questionnaire and the focus of each part.

Table 3

Distribution of Questions on the Questionnaire

Sections	Section I-	Section II-	Section III-	Section IV-	Section V –
Question Types	Background Information	General attitudes towards computers and computer technology resources in language instruction	General impressions of the lexis project and new approach to vocabulary	Factors behind teachers non-use of the CLT	Teachers' use of the CLT tools in vocabulary instruction
No. of Questions	7	21	6	14	13

The questionnaire for this study was composed of five sections. The first section aimed at gathering background information about the participants: their names, sex, years of teaching experience, the division they are teaching at - whether IED or MLD - and the levels, whether they have completed the CCTD, and whether they have completed the training sessions on data-driven learning and concordance applications of the CLT.

Section Two of the questionnaire referred to the first research question: What are teachers' attitudes towards computers in general, as well as towards using instructional technology innovations in language teaching? The first two questions in this section were directed to learn the purposes for which teachers use computers and how frequently they make use of computers for these purposes. The remainder of Section One was comprised of nineteen Likert-scale items in which the participants were asked to circle one option that best reflected their opinions about and attitudes towards computers, and about computer technology innovations in language instruction, as well as their opinions about whether taking the CCTD course was useful for changing their attitudes towards computers, and useful for integrating technology resources into their teaching. The response options were 'strongly disagree', 'disagree', 'undecided', 'agree', and 'strongly agree'. Interpretations of the means of responses were made according to the scale below:

- 1) Strongly disagree: mean values between 1.00 and 1.80
- 2) Disagree: mean values between 1.81 and 2.60
- 3) Undecided: mean values between 3.41 and 4.20
- 4) Agree: mean values between 3.41 and 4.20
- 5) Strongly agree: mean values between 4.21 and 5.00

The third section of the questionnaire was intended to reveal teachers' general impressions of the lexis project and the new approach to vocabulary. The first three items were aimed to reveal teachers' attitudes towards the lexis project, which has been implemented to contribute to the development of learners' general and academic vocabulary. The first two items asked teachers whether the lexis project brought a principled approach to vocabulary instruction, and whether the rationale behind the new approach was clearly stated to the teachers. Item three sought to learn whether teachers agreed that the materials provided within the lexis worksheets were useful for teaching vocabulary. Those who indicated the options 'strongly disagree' or 'disagree' for item three were asked to respond to item four; otherwise they were asked to go directly to item five. Item four asked teachers in which ways they thought the worksheets were not useful. They were provided with a list of reasons why the worksheets were not useful, and were asked to tick the options that apply. They were also provided with a space to specify other reasons. Item five asked teachers whether they refer to only the lexis worksheets in teaching the general and academic words. Those who indicated the option 'no' were asked to specify what other resources they use in teaching vocabulary. The last item, item six, asked teachers to what extent they make use of the vocabulary enhancement tools of the online lexical tutor (The Complete Lexical Tutor- CLT). They were asked to circle the appropriate option. The options given were 'never', 'rarely', 'sometimes', 'often', and 'always'. Teachers who indicated the option 'never' were asked to complete Section Four of the questionnaire. Those who indicated the other options were asked to complete Section Five.

Section Four of the questionnaire was designed to explore the factors behind teachers' failure to use the online resource, CLT. There were fourteen Likert-scale

items in this section. Teachers were asked to indicate to what extent they agreed with each item. They were asked to circle the option that best stated their opinion. The options were ‘strongly disagree’, ‘disagree’, ‘undecided’, ‘agree’, and ‘strongly agree’. The first eleven items were designed to learn about the factors affecting teachers’ non-use of the CLT. The remaining three items asked teachers whether they would consider using the CLT as a supplementary resource in teaching vocabulary if they were provided with training.

The final section of the questionnaire, Section Five, was designed to learn to what extent and how teachers make use of the vocabulary enhancement tools of the CLT. The first two items asked teachers to indicate which tools of the CLT they make use of. Teachers were also asked to rank the tools they use in order of usefulness, with (1) as the most useful. Teachers who indicated that they use concordance applications of the CLT were asked to respond to items three to nine. The others were asked to go directly to item ten. Items three to nine were derived from the literature (Nation, 2001) and intended to find out to what extent teachers agree with the advantages of using concordances in teaching and learning vocabulary. Items ten and eleven asked teachers to specify to what extent they apply the CLT tools in their vocabulary instruction, and how they make use of them. The last two items of the section, items twelve and thirteen, asked teachers who have taken the CCTD and completed the training sessions on data-driven learning, concordance applications, and other applications of the CLT tools whether the sessions were useful for changing their attitudes towards computer assisted vocabulary instruction. In addition, it asked whether what they learned from the sessions was applicable in their vocabulary instruction practices.

Interviews

The interview questions were structured parallel to the sections in the questionnaire. Three different sets of interview schedules were prepared for three different groups of participants. Those who did not take the CCTD training and reported not using the online resource (CLT) received one set of questions (Appendix B). The teachers who took the CCTD training and reported the use of CLT applications in their instruction received another set (Appendix C). The participants who took training but reported not using the CLT were asked a third set (Appendix D).

The first section of the interview was about the in-service training course, the CCTD (Certificate in Computers and Teacher Development). Different interview questions were designed for different participants in this section. Those who indicated in the questionnaire that they had not taken the CCTD course before were asked why and what they would expect from such a training course if they took it. To those who had completed the course and reported the use of CLT a different set of questions were directed: the first question was to determine whether positive attitudes or interests led people to undergo the CCTD training course or, if not, whether the training resulted in attitude change. The second question asked whether the CCTD was useful for integrating educational computer technology resources into teaching, if it was, how, and if not, why not.

The second section in the interview addressed all the interview participants and sought further in-depth data on the new lexis project, particularly focusing on whether teachers have grasped the rationale behind the new approach to vocabulary. This section also investigated how teachers make use of the lexis worksheets provided to explicitly teach the GSL and AWL words in class, factors affecting the

exploitation of the worksheets, and whether teachers emphasize any self-study strategies for students. To structure discussion on the lexis worksheets, a sample lexis worksheet was brought in as a reference (Appendix E).

The final section of the interview comprised two different sets of questions. One set addressed those who did not use the online resource, whether they had undergone training or not, asking them to state the major factor that prevents them from referring to the resource, and how this factor should be overcome. The second set of questions was designed for those who had undergone training and made use of the CLT and asked them how they refer to it in teaching vocabulary. For these participants, who indicated the use of concordances in teaching, a sample concordance output (Appendix F) from the concordancer tool of the CLT software was brought in as a reference to exemplify how they would make use of such data in class.

Procedures

Most questionnaire items in Section One of the questionnaire were structured by drawing on the relevant literature on teachers' perceptions of and attitudes toward use of computer technology in instruction.

Piloting the questionnaire

The questionnaire was piloted between March 10 and 11, 2003 with a random sample of thirty teachers at the SFL, EMU. Twenty teachers at the IED were selected randomly from the total of eighty teachers who taught pre-intermediate, intermediate, or upper-intermediate in the fall term, second module. Of the twenty teachers, nine taught pre-intermediate, eight taught Intermediate, and three taught upper-intermediate. Ten teachers at the MLD were selected randomly from the total of sixty teachers who taught basic, mainstream, or advanced courses in the fall term. Of these

ten teachers, four taught basic, four taught mainstream, and two taught advanced. The reason for selecting representatives of the six different levels was to ensure that the samples selected for the study represented the whole population. The constructive feedback from these thirty teachers was taken into consideration in rewording items, adding new ones, modifying ambiguous wordings, and deleting the items that were irrelevant to the purpose of the study. Additionally, grammatical mistakes were corrected, instructions and directions were modified, and terms and concepts (e.g. online lexical tutor, the lexis project) were modified so that they were clear to the participants. For this reason, the pilot study proved to be very beneficial.

Distribution of the questionnaire

Prior to the distribution of the questionnaire, a letter was sent to the SFL administration by the researcher requesting permission for data collection for the study. The EMU SFL council approved the request. The questionnaire was distributed on March 24, 2003 by the researcher to the teachers in their offices and was collected by the researcher at the end of the day, and the following day, March 25, 2003. The data was entered into the Statistical Packages for Social Sciences (SPSS) Version 10 by the researcher at the SFL.

Selecting participants for the interview

After analyzing the data gathered from the questionnaires, a stratified sample of twelve teachers was chosen for the interviews. The following criteria were considered while choosing the twelve participants for the interview: Whether the participants had taken the CCTD training course in 2002-3 academic year (the course in the specified academic year provided training sessions on the use of the CLT), in previous years, or had not taken it at all; the level and division of the English program taught (e.g. pre-, intermediate, or upper-intermediate at the IED division, or

basic or mainstream at the MLD division); and the use or non-use of the CLT in vocabulary instruction

The aim of the interview was to get in-depth answers to third and fourth research questions:

3. What factors influence language teachers' use or non-use of this resource (online vocabulary enhancement software- CLT) in their teaching?
4. To what extent opportunities, facilities, and training contribute to teachers' acceptance and use of such technology resources in their teaching?

In order to select the participants for the interview, teachers who reported taking the CCTD were separated from those who did not take the course. Among ninety-seven teachers who participated in the study, forty-two reported taking the CCTD course while fifty-five reported that they did not take it. Fourteen teachers out of forty-two completed the course in 2002-2003 academic year. Among the fourteen, the only three participants reported using the concordance applications and other CLT tools in their teaching, and two of these were selected for the interview. Both taught at the IED, one at intermediate and the other at upper-intermediate level. Three more teachers were also selected from the fourteen teachers. These teachers reported not using the CLT applications although the course they had taken offered training in using it. Two of the teachers taught at the IED, at pre-intermediate and intermediate levels, and the third teacher taught at the MLD, mainstream level. This teacher was the only one among the participants from the MLD who reported taking the CCTD in 2002-2003 academic year. There were thirteen participants, five from the MLD and eight from the IED, who reported using the CLT tools although they

had not participated in the formal training sessions offered by the CCTD course. One of them, a participant from the MLD basic level, was selected for the interview.

Of the twenty-eight teachers who had taken the CCTD training course in previous years, twenty-two taught at the IED and six at the MLD. Of the twenty-two teachers from the IED, two were selected for the interviews, from pre-intermediate and intermediate levels. Similarly, out of the six participants from the MLD, two teachers from the basic level were selected for interviews.

Of the fifty-five participants who had not taken the CCTD course, thirty-seven taught at the IED, and eighteen at the MLD. One teacher from the IED pre-intermediate level and two teachers from the MLD basic levels were selected for the interview.

To sum up, the semi-structured interview addressed four different groups of teachers representing the diversity of the responses given by the participants in the questionnaire. Group 1 comprised those who had not taken the CCTD training course at all. Group 2 involved those who took the course before 2002-2003 academic year. Group 3 consisted of those who completed the training course during 2002-2003 academic year but reported that they did not refer to the CLT tools in their instruction. Group 4 consisted of one representative of those teachers who reported using the CLT tools although they did not receive any formal training in using these tools.

A total of ten interview questions were prepared for the teachers representing each group. However, since the interviews were semi-structured, additional questions were directed to the participants according to the answers received. Thus, the number of the questions asked to the participants varied because of the nature of the interview. The interviews were carried out in English.

Data Analysis

All the items in the questionnaire were analyzed using the Statistical Packages for Social Sciences (SPSS) Version 10, except for five open-ended response items in Sections Two, Three, and Five. These five items were analyzed through categorization of the responses. For every item statistically analyzed, frequencies and percentages were calculated. In order to find the significance of the distribution of answers for the Likert-scale items, Chi-square tests were calculated. In terms of teachers' stated attitudes toward computer use and towards integrating computer technology resources in language teaching independent sample t-test analyses were also carried out in order to look for any significant correlation between training and attitude towards technology use. Other statistical analyses, namely independent-samples T-tests and One-way ANOVAs, were also calculated to look at whether there are any attitude differences between different groups/ variables. These variables were age, sex, years of teaching experience, and the division (IED versus MLD).

The interviews were taped and transcribed by the researcher. The transcript data were first categorized according to the sections in the interview: CCTD training course, the lexis project and new approach to vocabulary, and factors affecting use or non-use of online resource in vocabulary instruction. Responses under these sections were analyzed on a cross-sectional basis (Mason, 1996). In other words, the responses for questions under each section were compared among the twelve interviewees' transcriptions. Responses that reveal common patterns and issues were highlighted. Furthermore, non-cross sectional analysis of individual transcripts also revealed additional and unexpected patterns.

In the next chapter, the data analysis procedures and the results will be discussed in detail.

CHAPTER IV: DATA ANALYSIS

Introduction

This study examined how teachers at Eastern Mediterranean University, School of Foreign Languages (EMU, SFL) perceive the incorporation and use of computer technology resources in language teaching through investigation of teachers' attitudes and approaches to using an online supplementary resource in vocabulary instruction in an EFL context. The online program in question offers such tools as vocabulary level tests, a vocabulary frequency profiler, word and text concordancer, and cloze text and hypertext builder. The aim of the study was to explore the factors that affect teachers' use or non-use of this online program for teaching purposes. The study finally examined whether and to what extent opportunities, facilities, and training provided to teachers contribute to their acceptance and use of these resources.

The study addressed the following research questions:

9. What are teachers' attitudes towards computers and use of computer technology resources in language instruction?
10. To what extent are teachers making use of online vocabulary enhancement software and its tools, offered as a supplementary resource, in their vocabulary instruction?
11. What factors influence language teachers' use or non-use of this resource in their teaching?
12. To what extent opportunities, facilities, and training contribute to teachers' acceptance and use of such computer technology resources in their teaching?

Data Analysis Procedure

Except for five open-ended response items in sections two, three, and five, which were analyzed through categorization of the responses, all the questions in the questionnaire were analysed using descriptive or inferential statistics. The Statistical Packages for Social Sciences (SPSS) Version 10 was used to compute frequencies and chi-square of each Likert-scale question. An independent-samples T-test was used to compare attitudes of teachers who took computer technology training and who did not in order to see whether there is any significant difference between these two groups in their attitudes towards computer technology use in language teaching. Other statistical analyses, namely independent-samples T-tests and One-way ANOVAs were also calculated to look at whether there are any attitude differences between different groups/ variables. These variables were age, sex, years of teaching experience, and the division (IED versus MLD). The interview transcript data were analyzed through categorization. In order to find out the recurring patterns in data collected through interviews, the researcher examined the data focusing particularly on whether positive attitudes or interests led people to undergo training or the reverse.

The results obtained from the analysis of questionnaires and interviews are presented in five sections below. In the first section, analysis of the questions in the questionnaire and interview data is provided to show the attitudes of teachers at the SFL towards computers in general and incorporating computer technology resources in language teaching. This section also presents, in a subsection, the analysis of T-tests examining whether training has an impact on attitudes of teachers. In the second section, analysis of the questions in Section Three of the questionnaire and Section Two of the interview is provided to reveal the teachers' perceptions of the new

approach to vocabulary teaching, and the extent of teachers' use of the online supplementary resource in vocabulary instruction. In the third section below, the analysis of Section Four of the questionnaire, and the results gathered from interview data about different factors affecting teachers' non-use of the online technology resource are presented. The fourth section focuses on Section Five of the questionnaire, and on the ways and extent to which teachers make use of the online lexical tutor in vocabulary instruction. Again, findings from the interviews are presented to support analyses and interpretations. The final section of Chapter 4 is devoted to presentation and analysis of the first section of the interview: what leads teachers to undertake or avoid computer technology training; whether teachers think the CCTD training resulted in attitude change; and whether CCTD training has been useful in integrating computer technology resources and tools in language instruction.

Teachers' Attitudes towards Computer Technology Use in Language Instruction

The questions in Section Two of the questionnaire aimed to investigate teachers' attitudes towards computers in general and the use of computer technology resources in language teaching in particular. The section comprised 21 questions in total. The first question asked teachers what they use computers for. Teachers were asked to tick appropriate option(s) and also indicate their frequency of use (i.e. 1- rarely; 2- sometimes; 3- often). Question 1 included 12 items to be ticked, including the *other* option. For each item, frequencies and percentages were computed. The results are presented in Table 4 below.

Table 4

Purposes and frequency of computer use

			Rarely		Sometimes		Often	
	No	Yes	F	P	F	P	F	P
Electronic mail	0	97	5	5.2%	5	5.2%	87	89.2%
Chat rooms	53	44	28	28.9%	10	10.3%	6	6.2%
Games	33	64	39	40.2%	21	21.6%	4	4.1%
Surfing the Internet	1	96	8	8.2%	29	29.9%	59	60.8%
Online shopping	55	42	30	30.9%	9	9.3%	3	3.1%
Entertainment	39	58	31	32%	17	17.5%	10	10.3%
Materials design	5	92	19	19.6%	25	25.8%	48	49.5%
Web-page design	45	52	33	34%	10	10.3%	9	9.3%
Typing and maintaining lesson plans	25	72	21	21.6%	29	29.9%	22	22.7%
Office work	11	86	10	10.3%	23	23.7%	53	54.6%
Assessing and checking homework via e-mail	25	72	35	36.1%	29	29.9%	8	8.2%

Note. No= number of participants who did not tick the item.

Yes= number of participants who ticked the item.

F= frequency

P= percentage

The results show that teachers commonly use computers for electronic mail, Internet, materials design, and office work, as well as to lesser extent typing and keeping lesson plans. Teachers also report use of computers for web-page design and assigning homework via e-mail, but, as the percentages reveal, such uses are not very common.

There were 13 teachers who reported the use of computers for other purposes. One teacher stated that she used computers for setting project assignments via e-mail between her students and students from other schools. Three other teachers said they use computers for online meetings, such as discussion meetings, weekly meetings,

and newsgroups. One teacher indicated the use of computer for designing audio and video multimedia work, power-point presentations, and Microsoft project management programs. However, this teacher was the only one who reported using such complicated computer tools. Other teachers reported the use of computers for typing and maintaining their own assignments for MA courses or research studies. One response came from a teacher who indicated that she uses the voice-chat tool to talk to her brother living abroad.

Question two in Section One asked teachers how often they use computers, and required them to tick an appropriate option which indicates their frequency of computer use on weekly basis. Table 5 presents the responses.

Table 5

Weekly computer use

	F	P
1 – 2 times a week	1	1.0%
3 – 4 times a week	12	12.4%
5 or more times a week	84	86.6%

Table 5 indicates that most of the participants, 86.6%, use computers more than five times a week. Thus it is clear that the use of computers among teaching staff of the SFL is a common practice. Moreover, combined with the data in Table 4, it is clear that a considerable proportion of this use is work-related.

Questions from 3 to 19 in Section Two inquired into teachers' attitudes towards computer use in general and, in particular, the use of computer technology resources in language instruction. According to the data, most of the teachers seem to have positive attitudes towards computers in general. When it comes to incorporating computer technology into language instruction, however, responses show variation. In Table 6, teachers' attitudes towards computers and use of computer technology in language instruction are presented.

Table 6

Teachers' attitudes towards computers and use of computer technology resources in language instruction

Questions	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	χ^2
Q3	0	1	7	32	57	125.83**
Q4	0	2	10	34	51	102.02**
Q5	0	2	18	35	42	73.98**
Q6	0	1	9	38	48	103.48**
Q7	1	1	14	34	46	84.73**
Q8	0	5	8	38	46	91.09**
Q9	0	4	30	42	19	65.05**
Q10	0	5	25	36	31	52.84**
Q11	0	8	26	37	25	46.40**
Q12	0	5	15	33	44	78.81**
Q13	0	1	9	35	52	109.75**
Q14	1	13	36	29	14	41.57**
Q15	0	9	19	41	27	52.54**
Q16	1	6	21	37	30	49.58**
Q17	0	6	22	35	32	50.74**
Q18	32	31	18	12	4	30.27**
Q19	26	25	26	16	4	18.93**

Note.

Q3 – I like using computers.

Q4 – I generally have positive attitudes towards computers.

Q5 – Using computers make me more efficient in my life.

Q6 – Using computers makes me more efficient at my work.

Q7 – Using computers generally makes completing tasks easier.

Q8 – I like searching the internet for general interest.

Q9 – I perceive computers as pedagogical tools.

Q10 – I generally have positive attitudes towards using computer technology in teaching.

Q11 – I like using computers for teaching purposes.

Q12 – I like searching the Internet for teaching resources.

Q13 – Computers can be a good supplement to support teaching and learning.

Q14 – I believe I can take risks in teaching with computer technology.

Q15 – If I have time, I would like to try out instructional computer technology innovations in my teaching.

Q16 – If I have access to resources, I would like to try out instructional computer technology innovations in my teaching.

Q17 – If I have training, I would like to try out instructional computer technology innovations in my teaching.

Q18 – I am not the type to do well with computerized teaching tools.

Q19 – I am not prepared to integrate instructional computer technology in my teaching.

χ^2 = Chi-square ** $p < .01$

Most of the teachers have positive attitudes towards computers and using computers for general purposes, as supported by the distribution of responses to questions 3, 4, 5, 6, 7, and 8. Also, as revealed by significant distribution of

responses to question 13, most participants also believe that computers can be a good supplement to support teaching.

Question 9, on the other hand, is the first of a group of items that requested teachers' opinions about how they perceive the role and place of computers in language instruction. Although 42 teachers out of 97 agree and 19 strongly agree that they perceive computers as pedagogical tools, 30 teachers seem to be undecided whether they perceive computers as pedagogical tools. This may be due to a lack of knowledge about and/ or lack of training on computer technology use in language instruction. The following two questions support such a possibility. Responses to questions 10 and 11 reveal there are many teachers, 25 and 26 respectively, who seem undecided whether they have positive attitudes towards using computer technology in teaching and whether they like using computers for teaching purposes. This may be interpreted to mean that teachers were not sure whether they would use computer technology for teaching purposes, as they did not have much knowledge about how to use them in teaching.

These findings may be interpreted to mean that the SFL teachers are generally positive about computers, but not so sure about using them for teaching. They perceive computer technology resources as a support tool rather than a tool for direct instruction. Perhaps they feel unable to use computers in teaching because of lack of knowledge.

This interpretation may also be supported by responses to question 14. The question asks if teachers take risks in teaching with computer technology. One respondent strongly disagrees and 13 disagree with the statement whereas 43 teachers state they can take risks teaching with technology. However, a high number of participants, 36, stated that they are not sure whether they can take risks or not.

This might be related to lack of self-confidence in teachers, which again might be caused by lack of familiarity with computer technology resources.

Questions 18 and 19 served a different purpose; they aimed to ascertain whether the participants perceive themselves as teachers who can do well with computerized teaching tools, and those who are prepared to integrate instructional computer technology into their teaching. In response to question 18, 18 teachers were unsure and 16 agreed that they are not the type who can do well with computer technology. Similarly, in response to question 19, 26 teachers remained undecided, probably because they could not tell whether they are ready to integrate computer technology into their teaching without having adequate knowledge or training. These findings may imply that the SFL teachers are generally positive about computer technology use in language instruction and they are willing to integrate computer technology resources in their teaching. Yet, they need to be more informed about technology resources and receive further training to consider computer technology integration.

Questions 20 and 21 were the final two questions in Section Two. Question 20 asked those who indicated they have taken the CCTD whether the course has been useful for changing their attitudes towards computers. Question 21 asked whether the CCTD has been useful for integrating computer technology resources into their teaching. Out of 42 participants who indicated they have taken and completed the CCTD training course, 34 responded to questions 20 and 21. 8 teachers skipped these two questions, and these teachers are among the 11 teachers who took the CCTD in 2002-2003 academic year. The reason for these teachers skipping these questions might be that they thought those questions were directed to those who had taken the course in the previous years. Table 7 below presents the results.

Table 7

Training impact on attitude and computer technology integration into language instruction

Questions	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	χ^2
Q20	3	4	5	8	14	11.59*
Q21	2	3	6	11	12	12.18*

Note. Q20 – The CCTD has been useful for changing my attitudes towards computers.
 Q21 – The CCTD has been useful for integrating instructional computer technology resources into my teaching.
 χ^2 = Chi-square
 * $p < .05$

The distribution of responses for both questions is significant. The general impression is that the most CCTD takers seem to agree that the CCTD training course has been useful for developing positive attitudes towards computers. The reason why some teachers disagreed with the statement could be interpreted in two different ways. The first interpretation could be that these teachers took the course, but the CCTD course did not have an influence on changing their attitudes as it did not meet their expectations of a computer technology training course. Another interpretation is that these teachers may have already had positive attitudes towards computers before taking the course. Reasons why teachers undergo or avoid training, and the impact of training will be discussed in more detail in the section entitled ‘The CCTD’. Question 21 looked at whether the CCTD has been useful for integrating technology into language instruction. Most participants stated that it has, although 6 remained undecided and 5 stated that the CCTD has not been useful for that end.

Since teachers’ responses show variation in questions related to computer technology integration in language teaching, it is reasonable to ask whether undergoing prior technology training might have affected these teachers’ attitudes. To find out whether training has caused any attitude differences, an independent-samples t-test was calculated to compare the distribution of responses by the two

groups: those who had undergone training and those who had not. The results revealed significant differences between the two groups.

Training influence on attitude towards computer technology use in instruction

Table 8 presents the t-test results. These results will be discussed below in further detail.

Table 8

Attitude differences between participants who have undergone technology training and those who have not

Question	Participants	N	M	sd	t
Q3	Training YES	42	4.64	.53	1.90
	Training NO	55	4.38	.76	
Q4	Training YES	42	4.45	.74	0.81
	Training NO	55	4.33	.77	
Q5	Training YES	42	4.24	.82	0.33
	Training NO	55	4.18	.82	
Q6	Training YES	41	4.37	.77	-0.23
	Training NO	55	4.40	.66	
Q7	Training YES	42	4.38	.79	1.05
	Training NO	54	4.20	.86	
Q8	Training YES	42	4.36	.69	0.74
	Training NO	55	4.24	.92	
Q9	Training YES	41	3.88	.84	0.81
	Training NO	54	3.74	.78	
Q10	Training YES	42	4.17	.91	2.03*
	Training NO	55	3.80	.85	
Q11	Training YES	41	3.90	1.07	0.70
	Training NO	55	3.76	.79	
Q12	Training YES	42	4.26	.86	0.64
	Training NO	55	4.15	.91	
Q13	Training YES	42	4.64	.53	2.78**
	Training NO	55	4.25	.78	
Q14	Training YES	39	3.64	.84	1.70
	Training NO	54	3.31	1.01	
Q15	Training YES	41	4.10	.92	1.87
	Training NO	55	3.75	.91	
Q16	Training YES	41	4.17	.86	2.18*
	Training NO	54	3.76	.97	
Q17	Training YES	41	4.20	.84	2.08*
	Training NO	54	3.81	.93	
Q18	Training YES	42	1.74	1.04	-3.92**
	Training NO	55	2.60	1.12	
Q19	Training YES	42	2.07	1.13	-2.90**
	Training NO	55	2.75	1.13	

Note.

Q3 – I like using computers.

Q4 – I generally have positive attitudes towards computers.

Q5 – Using computers make me more efficient in my life.

Q6 – Using computers makes me more efficient at my work.

Q7 – Using computers generally makes completing tasks easier.

Q8 – I like searching the internet for general interest.
Q9 – I perceive computers as pedagogical tools.
Q10 – I generally have positive attitudes towards using computer technology in teaching.
Q11 – I like using computers for teaching purposes.
Q12 – I like searching the Internet for teaching resources.
Q13 – Computers can be a good supplement to support teaching and learning.
Q14 – I believe I can take risks in teaching with computer technology.
Q15 – If I have time, I would like to try out instructional computer technology innovations in my teaching.
Q16 – If I have access to resources, I would like to try out instructional computer technology innovations in my teaching.
Q17 – If I have training, I would like to try out instructional computer technology innovations in my teaching.
Q18 – I am not the type to do well with computerized teaching tools.
Q19 – I am not prepared to integrate instructional computer technology in my teaching.
Training YES= participants who indicated that they took the CCTD
Training NO= participants who indicated that they did not take the CCTD
N= number of participants M= mean
sd= standard deviation t= t-test
* p< .05 ** p< .01

Responses to questions 10, 13, 16, 17, 18, and 19 revealed significant attitude differences between teachers who had taken the CCTD, and teachers who had not. Question 10 asked whether teachers have positive attitudes towards using computer technology in teaching. The mean of the responses by the participants who have not taken the CCTD is 3.80, between *undecided* and *agree*. The responses from those who have taken the CCTD, on the other hand, tend to gather around a mean of 4.17, between *agree* and *strongly agree*. The t-test score supports the finding and indicates a significant difference between the two groups. This result implies that teachers who have undergone computer technology training may have a more positive attitude towards using computer technology resources in language instruction when compared to those who have not. Such an attitude may result from confidence in teachers in having the knowledge about computer technology and about ways of integrating it into language instruction.

The responses to question 13 from the participants who took the CCTD cluster around 4.64, closer to *strongly agree*, while the participants who did not take the CCTD remain closer to *agree*, with a mean score of 4.25. This result might be interpreted to mean that teachers who received training can more confidently state a

stronger agreement that computers can be a good supplement to teaching and learning than those who had not taken the CCTD and so were not sure about the statement in the question, and as a result may have avoided stating a strong agreement with the question item.

Questions 16 and 17 asked teachers whether they would make use of computer technology innovations in their language instruction provided that they have access to resources and training. The responses to the questions 16 and 17 significantly varied between the two groups. As the mean score from the table indicates, the responses from those who took the training course to question 16 cluster around 4.17, between *agree* and *strongly agree*. However, the mean score of those without training is 3.76, indicating the clustering of responses between *undecided* and *agree*. The result may suggest that teachers who have undergone training seem more willing to try out computer technology resources in their language instruction if they are provided with access to resources. The same trend can be observed in responses to question 17. The mean scores between the two groups show significant differences: 4.20 for those who have undergone training, indicating a tendency between *agree* and *strongly agree*; and 3.81 for the ones who have not, remaining between *undecided* and *agree*. The CCTD training might have had a potent influence on the teachers, showing that they can utilize and integrate computer technology in their instruction, and thus these teachers may have indicated agreement and strong agreement with the statement. Those teachers who did not take any training course may not be sure whether training can equip them with ways of integrating technology into language instruction.

The last two questions related to attitudes towards technology. Questions 18 and 19 investigated whether the respondents perceive themselves as the type of

teacher who can do well with computerized teaching tools, and whether they are prepared to integrate computer technology into their language instruction. The responses to these two questions reveal highly significant differences. Responses from the teachers who took the CCTD training course to question 18 are distributed between *strongly disagree* and *disagree*, with a mean score of 1.74. The question stated, 'I am not the type to do well with computerized teaching tools', and it seems the teachers who took training strongly disagree or disagree with the statement. The responses to the very same question from the teachers who did not take training, on the other hand, cluster between options *disagree* and *undecided*, with a mean score of 2.60. This suggests that some teachers who did not take training cannot disagree with the statement and remain undecided. The same group of teachers seems to have the same inclination in their responses to question 19. The question asked teachers whether they are prepared to integrate instructional computer technology in their teaching. The mean score of the responses from the teachers who did not take training is 2.75, between *disagree* and *undecided*. The result may be interpreted to mean that these teachers without any computer technology training cannot strongly disagree with the statement and some of them state they are unsure whether they are prepared for technology integration or not.

The findings may suggest that training results in a change in teachers' perceptions of themselves; that is to say, having received computer technology training, teachers may feel more prepared to integrate computer technology tools and resources in their language instruction.

Other statistical analyses were also carried out to see whether there are any other factors affecting teachers' attitude towards computers and computer technology integration. First of all, one-way ANOVA tests were performed to compare means of

different variables such as age, and teaching experience, against means of responses to attitude questions. No significant differences were observed between different age groups and their attitudes towards computer technology integration (Appendix G). Similarly, there were no significant differences among teachers with different years teaching experience and their attitudes towards computers (Appendix H). Finally, two other independent-samples T-tests were conducted to see whether there are any attitude differences between male and female participants (Appendix I), and between IED and MLD teachers (Appendix J). Again, no significant differences were gathered between the groups.

The next section of the chapter will present the results and findings from Section Three of the questionnaire and Section Two of the interview, which looked at SFL teachers' general impressions of the new lexis project and the lexis worksheets, designed to contribute to the development of learners' general and academic vocabulary.

The Lexis Project and New Approach to Vocabulary

The aim of Section Three in the questionnaire was to reveal the participants' opinions about the newly implemented lexis project and its new approach to teaching and learning vocabulary.

Section Three of the questionnaire contained 6 questions in total. The first 3 questions comprised the first part of the section and asked the participants their opinions of the new lexis project and lexis worksheets. Table 9 below presents the responses and their distribution, together with the chi-square values of distributions.

Table 9

General impressions of the new lexis project and lexis worksheets

Questions	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	χ^2
Q1	3	9	25	33	24	32.60**
Q2	3	9	24	39	19	41.53**
Q3	3	22	17	43	9	50.25**

Note.

Q1 – The new lexis project has brought a principled approach to vocabulary instruction and learning.

Q2 – The rationale behind the new lexis approach has been clearly stated.

Q3 – The materials provided within the lexis worksheets are useful for teaching vocabulary.

χ^2 = chi-square ** p < .01

The results presented in Table 9 reveal that the distributions of responses for all the three questions are highly significant. The general impression of teachers about the lexis project and the new approach to vocabulary seems positive. A majority agree with all three statements. On the other hand, the number of participants who chose the option *undecided* is notably high, 25 participants for Q1 and 24 for Q2. Such a finding may hint that not all teachers at the SFL have clearly understood the new lexis approach and the rationale behind it. It may also suggest that either some teachers have not fully examined the project, or the project and its principles have not been effectively introduced. During the interview some teachers stated that the project was not well presented to teachers.

A1

My first impression was that it [the lexis project] wasn't well presented to the institution and teachers... the presentation, introduction of the project was not well staged and well-done.

Why? They introduced the project in the teaching team meetings, and I think the TTLs [teaching team leaders] were not thoroughly acknowledged [knowledgeable] about this project, either.

A12

Was the rationale made clear? No, not at first. When I joined the CCTD I learned more about the GSL and AWL and the process behind [compilation of] these lists and the rationale... yes [the project was introduced to teachers at the beginning of the semester], during the weekly TTMs [teaching team meetings], but it was a one-hour meeting, there were other things to discuss. So they [teaching team leaders] didn't have enough time to introduce it

[the project] and we didn't have time to examine it well and ask questions about it.

It seems that the introduction of the lexis project and the rationale behind it was not thoroughly explained to the teachers during the first TTM of the academic term. This may be because the TTMs are usually heavily scheduled with other topics to discuss and it might have not been possible for the TTLs to effectively present the project to the teachers.

With regard to Q3, although most teachers assert generally positive attitudes towards the new approach to vocabulary teaching and learning, a substantial number of teachers (25) seem to have doubts about the usefulness of the lexis worksheets for teaching vocabulary.

The next part of Section Three asked those who stated disagreement with Q3 to state the ways in which the worksheets were not useful. In question 4, the participants were asked either to tick the appropriate options or state other ways if there are any. Table 10 below presents the responses given by the participants to the question 4.

Table 10

Ways in which the worksheets were not useful

Problems the lexis worksheets have	N
a. too complicated for students to complete	15
b. vocabulary provided not appropriate for students' levels	10
c. vocabulary provided not appropriate for students' needs	18
d. too much material to cover in class time	23
e. not flexible enough to be used in different ways	19
f. no recycling of vocabulary	19
g. other	16

Note: N = number of times each option is ticked by the participants

The major complaint about the lexis worksheets was that they present too much material to cover in class time. In the introductory remarks of the lexis section, it was recommended to teachers to spend at least 20 minutes of class time on each worksheet. The load, however, seems too much for many teachers to cover in class

time. The findings suggest that the problem is two-fold: the syllabus is too loaded to allow sufficient time and space for effective exploitation of the lexis worksheets, and the worksheets contain too much material to cover in class time. This is also supported by the interview findings. Most participants, especially at the IED, complained about the time required to cover worksheets in class:

(A1) The teachers found it difficult especially at higher levels to do worksheets [each] in 20 minutes, because you can't even do them in 50 minutes if you want to exploit them thoroughly... we didn't have enough time [to do worksheets], especially the Intermediate program has been very loaded.

(A5) I know these lexis worksheets are complementary and we are supposed to focus on them in class, spare time for exploitation of these efficiently, but time is a factor for us. We have to cover lots of things in the syllabus, and this lexis focus is one of them but these [worksheets] fall in the second place most of the time.

(A10) The only negative factor is time; we have a packed and loaded syllabus. It is difficult to implement and exploit all these lexis [worksheets] effectively in class.

The other two problems indicated by many participants are that the materials in the lexis worksheets do not provide sufficient flexibility to enable teachers to exploit them in different ways, and that the vocabulary presented in the worksheets is not recycled sufficiently. 18 participants thought that vocabulary provided is not appropriate for students' needs. This is interesting because the rationale of the project states that the GSL and the AWL words are what students who learn English for general academic purposes require. 15 teachers stated that materials in the worksheets are too complicated for students to complete. To help teachers to navigate through the worksheets and exploit them better, teachers' notes for each worksheet are provided. Still, some teachers may think that worksheets are too complicated. Maybe teachers do not pay careful attention to what is suggested in teachers' notes.

16 teachers ticked the *other* option and stated the problems with the worksheets in the space provided. The most commonly cited problem by the participants was that the lexis worksheets lack sufficient contexts for students to better comprehend the meanings of the words presented. Further problems stated under the *other* option were that no opportunities were provided for students to actively produce the words they have learned or practiced, and that most of the vocabulary presented has no match with what is covered in the texts and activities in the coursebook. These two problems are cited 3 times each. Two MLD teachers cited the latter during the interview:

(A4) The context, there is something wrong with it. I mean the two contexts, the course syllabus and content [Dept of Communication], and AWL content does not match. AWL words seem scattered all around, without having much unity with the course content. The texts in which AWL practice is given do not match what students read in their departments.

(A9) Texts we use here [in worksheets to introduce AWL words] and texts they [students] read in their content courses [Engineering Dept] have no relation, they are not parallel, students read some texts in our language classes, do some activities using the words, and that's it.

It seems that content and topic selection to introduce and practice general academic vocabulary may not be appropriate.

Question five in Section Three of the questionnaire asked teachers whether the lexis worksheets were the only resources they refer to when teaching the general and academic words, and if not, what other resources teachers use in teaching these words. Only 21 participants stated that they refer to the worksheets alone. 76 stated that they refer to other resources. Table 11 presents the different resources teachers refer to.

Table 11

Other resources teachers refer to when teaching vocabulary

Resources other than lexis worksheets teachers refer to in vocabulary instruction	N
- Texts, activities, and exercises in the coursebook, workbook, and materials pack	33
- self-prepared materials (e.g. pictures, realia, games, puzzles, songs, exercises and quizzes) to further practice and recycle the words presented	20
- Internet resources (texts, newspapers, games, activities, exercises, and quizzes)	9
- Materials and tasks from other sources (e.g. games, exercises and quizzes from vocabulary books, and TRC- Teachers' Resource Center files and archive)	5
- Dictionary work in the class	4
- The online EAGLE (English for Academic and General Purposes Learning Environment) resource: online AWB (Academic Word Builder) activities and exercises	2
- Mind maps, spidergram, collocations, antonyms and synonyms, used to build on worksheet exercises	2
- Texts in the coursebook, as most of the GSL words are covered and given in a lengthier context	1

Note: N = number of times each resource is mentioned by the participants

Most teachers, 33 of them, mentioned that they refer to the coursebook, workbook, and materials-pack and the texts, activities, and exercises in them. It is interesting to note, however, only one participant emphasized that most of the words presented in the lexis worksheets are also covered and presented in context. This result may suggest that all the processes behind the construction of the lexis project, and in particular how the words in the worksheets were mostly compiled from the textbooks, have not been fully communicated to the teachers of the SFL. 20 teachers stated that they refer to self-prepared materials as another resource while teaching, revising, or having students practice the target words.

9 teachers cited they refer to the Internet to search for vocabulary practice or testing materials. However, only 2 teachers cited the online EAGLE resource of the SFL and its AWB (Academic Word Building) activities and exercises. Although the EAGLE online is a useful site both for teachers and learners, it seems that not many teachers refer to the site as a supplementary resource for vocabulary instruction. This

again suggests that the useful resources are not advertised well enough, or teachers are not fully aware of the rich resources the site offers.

Question 6 was the last question in Section Three of the questionnaire. It asked teachers whether and to what extent they make use of the vocabulary enhancement tools of the online lexical tutor (CLT), which has been offered as a supplementary vocabulary teaching and learning tool within the new lexis project. Teachers were given 5 options ('never', 'rarely', 'sometimes', 'often', and 'always') and asked to circle the appropriate one to indicate their use of the CLT. Table 12 presents the responses given to question 6.

Table 12

The extent to which teachers make use of the vocabulary enhancement tools of the online CLT

Question	Never	Rarely	Sometimes	Often	Always	χ^2
Q6	78	4	7	4	2	229.68**

Note: χ^2 = chi-square
 ** p < .01

An overwhelming majority of teachers reported that they never used the CLT tools in their vocabulary teaching practices. There may be different factors that prevent teachers from using the site. The following section in the questionnaire, Section Four, looked at these factors. At the end of Section Three, those participants who indicated *never* were asked to complete Section Four only. Those who indicated *rarely*, *sometimes*, *often*, or *always* were asked to complete Section Five only, which looked at how these teachers make use of the CLT and its tools in their vocabulary instruction. The following section of the chapter will investigate the factors that affect teachers' non-use of the online resource, CLT.

Factors Affecting Teachers' Non-use of the CLT

Section Four of the questionnaire targeted the participants who indicated they never used the vocabulary teaching and learning tools that the online *Complete*

Lexical Tutor (CLT) program offers. Although the CLT offers many useful tools, not many teachers make use of the program. The first part of Section Four investigated the reasons why these teachers do not make use CLT and its tools. This part contained 10 questions in total. The participants were asked to what extent they agreed with each statement given. They were asked to circle the answer that best shows their opinion on a 5 point scale (1. strongly disagree; 2. disagree; 3. undecided; 4. agree; and 5. strongly agree). The follow-up interviews also asked teachers what major factor prevented them from using the CLT, and how this factor may be overcome. The findings suggest that the major factors seem to be lack of time and training. The analysis and findings are presented below. Table 13 introduces the frequency analysis of the responses given to the following 10 questions.

Table 13

Factors preventing teachers from using the CLT

Questions	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	χ^2
Q1	34	24	3	10	5	46.76**
Q2	34	26	2	10	4	52.42**
Q3	6	9	17	34	9	34.53**
Q4	2	12	15	38	8	50.40**
Q5	1	10	7	42	14	68.57**
Q6	18	25	24	3	1	37.10**
Q7	9	16	26	14	9	13.16*
Q8	5	22	34	8	1	53.57**
Q9	11	28	30	1	1	56.25**
Q10	17	34	12	8	4	36.27**

Note: I do **not** use the CLT tools in vocabulary teaching because

Q1 – I do not have adequate access to computers.

Q2 – I do not have adequate access to the Internet.

Q3 – I do not have time to consider the integration of CLT tools in my teaching.

Q4 – I do not know how to make use of the CLT tools in vocabulary teaching.

Q5 – I did not receive sufficient training to integrate the CLT tools in my teaching.

Q6 – I do not believe the CLT tools are useful in vocabulary teaching.

Q7 – I do not think my students are ready for computer-assisted learning.

Q8 – I do not think the CLT tools are suitable for the level of my students.

Q9 – I do not think the CLT tools are useful for improving student learning.

Q10 – What I do in class with traditional methods is sufficient in teaching vocabulary.

χ^2 = chi-square

* $p < .05$

** $p < .01$

Analysis of the responses to Q3 indicates that lack of time prevents some participants from referring to the CLT in teaching vocabulary. 41 respondents out of 72, more than half, agree that they do not have enough time to refer to this supplementary resource. This may be a plausible factor when the load of the syllabi at the level programs is considered. During the interview, one participant stated that although he received training on how to use the site, he could not find time to refer to it.

(A10) We can use the concordance tool for example and implement it in the syllabus. I learned things at the CCTD and designed and prepared activities using the [concordancer] tool. But you know you have to prepare these and use them in class, but have no time for that.

Besides time, lack of knowledge about and training in using the CLT seem to be important factors. By looking at the number of responses given to Q5, it can be observed that most participants, 56 in total, either agree or strongly agree with the statement that they did not receive training to integrate the CLT tools into their teaching. Participants who disagree with the statement in Q3 may have wanted to emphasize that it was not time which prevented them from using the CLT, but lack of training. Responses to Q4 and Q5 seem to support the assumption that the major factor that prevents teachers from using the CLT may be lack of training, and thus lack of knowledge of how to make use of the program and its tools. Responses to Q4 and Q5 are also supported by interview findings:

(A2) The major factor? I wasn't even aware of the existence of such an online resource. If I knew, if I had training on how to use it, I'd use it. I repeat, before your questionnaire I had no idea what this resource was about.

(A4) I remember a workshop on this online resource. But it was "about" the site. It wasn't actually a workshop which actually introduced and showed us the site and how to use it. They only said it's a useful site we can refer to, like we can scan texts and identify

AWL words in them and etc... we haven't been given a chance to analyze the site effectively or in detail. We didn't exploit the site.

(A5) We were told about the resource and its tools...and I know that we can refer to it as a supplementary resource in teaching vocabulary... I think we should have also been given some further suggestions and training maybe on how to integrate these tools into our teaching in an effective way.

(A6) I didn't know that there's such an online resource offered until I saw it in your questionnaire... actually I don't remember if they have advertised it or not, maybe I didn't pay much attention.

(A7) I didn't know about such a resource until your questionnaire...I know about the concordance concept but I don't know how to use it... I believe they [concordances] can be useful data and resources in that way... I mean we weren't really informed about this resource.

Distribution of the responses to Q10 indicates that a highly significant number of teachers, 51 of them, disagreed that what they do in class with traditional methods is sufficient in teaching vocabulary. 12 participants remained undecided, and 12 indicated agreement with the statement. This result may imply that many teachers acknowledge the importance of using supplementary resources in teaching vocabulary. Yet, such factors as lack of time and training may prevent them from referring to these resources.

The second part of Section Four contained 4 questions, Questions 11, 12, 13, and 14, and aimed to further investigate the possible factors behind the avoidance of computer technology, as well as investigate teachers' general opinions about the usefulness of computer technology resources in improving language instruction. In this part, the participants were asked to what extent they agreed with each statement. They were asked to circle the answer that best matched their opinion. Table 14 presents the results gathered from responses to these questions.

Table 14

Teachers' opinions about the usefulness of computer technology resources

Questions	N	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	χ^2
Q11	75	1	19	14	33	8	39.06**
Q12	75	3	6	6	39	21	61.20**
Q13	74	2	2	13	37	20	57.49**
Q14	76	33	31	6	1	5	62.95**

Note:

Q11 – Simply providing technology resources is not enough to persuade me to use them in teaching.

Q12 – I need to be provided with training to develop pathways for integrating technology into my instruction.

Q13 – If I knew how to use make use of the CLT tools, I would consider using them as supplementary tools in teaching vocabulary.

Q14 – I do not believe in the usefulness of technology resources in improving language instruction.

N = number of participants responded to the question.

χ^2 = chi-square ** p < .01

The last question of Section Four, Q14, asked teachers whether they believe in the usefulness of computer technology resources in improving language instruction. This question specifically aimed to solicit attitudes of those teachers who do not make use of the online resource, CLT, towards the use of technology in language instruction. 61 out of 76 respondents either strongly disagreed or disagreed with the statement. This shows that most teachers at the SFL believe in the usefulness of computer technology resources in improving language instruction. What they lack may be sufficient training support to integrate technology resources into their instruction. Responses to questions 11, 12, and 13 support this assumption.

Responding to Q11, 41 teachers out of 75, more than half, indicated agreement with the statement. However, the number of teachers who disagreed with or remained undecided about the statement is high, 34 in total. This might be interpreted to mean that some participants may not have understood the question. While there was not full agreement with the statement in Q11, responses to the statement in Q12 revealed highly significant results. Responding to Q12, 39

participants agreed and 21 strongly agreed that they need training to integrate technology resources into their teaching practices.

Q13 was designed to reveal whether most teachers knew much about the online CLT, and if they did whether they would consider using it in their instruction. Results gathered from the questionnaire seem to support this assumption. Responding to Q13, 57 participants out of 75 indicated agreement with the statement. Taken together, the responses to Q12 and Q13 can be interpreted to mean that the CLT and its tools have not been advertised sufficiently and no training has been provided for teachers on how to make use of the resource. In the interview, many teachers confirmed that they would use the CLT tools if they received proper training and guidance.

(A1) We have a running program, the CCTD... we can ask trainers to timetable training... during summer or February break so that everyone can at least learn how to use the CLT tools.

(A2) The CCTD trainers or CT [Curricular Team] members could train us on how to make use of the resource for teaching and learning purposes. After I experimented with the site [CLT] I now believe it can be something useful in teaching vocabulary.

(A4) Definitely [a workshop training teachers on how to use the site]. If there's such a useful resource, we'd like to learn more about it and make use of it, so that we wouldn't limit our students to the texts but use other resources as well.

(A6) They [trainers] can organize sessions, training workshops to show us how to use this program, what kind of tools it includes... so this might be a way to encourage teachers to use this resource.

(A10) Training is also an issue. Apart from teachers who take the CCTD, other teachers should also receive training in order for successful integration.

(A11) I think we need workshops or care-and-share sessions to share these ideas [using computer technology resources in teaching] among ourselves... for example you come here for the questionnaire and we talk about this tool for five minutes and I realize one value of it: using the concordance tool, so we do need more information channels.

The final section of the questionnaire was designed to investigate the approaches of those participants who actually make use of the online technology resource and its tools in their teaching. The following section of the chapter looks at the CLT applications in teaching.

Teachers' Applications of the CLT Tools in Vocabulary Instruction

Section Five of the questionnaire was composed of 4 separate parts and contained a total of 12 questions. Section Five was completed by those participants who indicated they *rarely*, *sometimes*, *often*, or *always* used the vocabulary teaching tools of the online CLT.

The first part of Section Five asked teachers to indicate which CLT tools they use in their instruction. It also asked teachers to rank these tools in order of their usefulness, with (1) as the most useful. The 6 CLT tools were presented as follows: a- concordance applications; b- vocabulary frequency profiler; c- hypertext builder; d- cloze text builder; e- vocabulary level tests; and f- vocabulary level quizzes in cloze text form. 17 teachers out of the 97 who participated in the questionnaire indicated they used the CLT tools in their teaching to varying extents. Table 15 below presents how these 17 teachers responded to Q1.

Table 15

The CLT tools ranked in order of usefulness

CLT tool	Not used	Used and ranked in order of usefulness, with 1 as the most useful					
		1	2	3	4	5	6
a - concordance applications	8	5	3	-	-	1	-
b - vocabulary frequency profiler	7	5	3	2	-	-	-
c - hypertext builder	10	-	2	2	-	1	2
d - cloze text builder	5	1	3	3	5	-	-
e - vocabulary level tests	6	5	1	3	1	1	-
f - vocabulary level quizzes	8	-	3	2	2	1	1

Note: not used = number of participants who indicated they have not used the tool.

The most used tools are the cloze text builder, vocabulary level tests, and the vocabulary frequency profiler. The most valued tools, on the other hand, are the concordancer and vocabulary frequency profiler. Although not most used, the concordancer is highly valued by those who use it. This may suggest that sessions on concordance applications and DDL sessions have been useful in showing teachers the value of this tool in supplementing vocabulary instruction and learning. The vocabulary frequency profiler, as interviews show, is frequently used by MLD teachers in order to select AWL words out of texts and place more emphasis on them.

The least used tool appears to be the hypertext builder. Although a very useful tool, hypertext builder is a complicated tool; it requires the user to follow a complex procedure of instructions to create an hypertext with every word hyperlinked to a pronunciation device, online dictionary, and concordancer so that learners can further work on any word they click on.

The findings suggest that those who make use the tools of the CLT know how valuable these can be as supplementary resources in teaching vocabulary. Responses to the open-ended question in the same section, which asked teachers how they make use of the tools of the CLT in their teaching practices, also supported the above findings. The cloze text builder is stated by many teachers to be quite useful. Some teachers reported using the vocabulary level tests to recycle vocabulary, or as quizzes or tests to evaluate students' knowledge of words.

Concordances are used by some teachers in activities where learners are asked to identify useful collocations and certain grammatical patterns and so on. Interviews further suggested that some teachers also guide their students on how to refer to this online resource, CLT, and use its tools for self-study and further practice.

10 teachers out of 17 stated they make use of the concordance software of the CLT program. These teachers were further asked a set of questions about the concordances. Questions 2 to 8 contained statements about the advantages of using concordance lists in teaching and learning vocabulary. Table 16 below presents the distribution of responses given to questions in this section.

Table 16

Advantages of using concordances in teaching and learning vocabulary

Questions	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	χ^2
Q2	0	0	1	4	5	11.00*
Q3	0	0	1	4	4	9.33
Q4	0	0	0	3	6	16.00**
Q5	0	1	1	4	3	6.00
Q6	0	0	2	5	2	9.33
Q7	0	0	2	4	3	7.11
Q8	0	0	2	3	4	7.11

Note:

Q2 – The information provided in concordance lists is useful for vocabulary instruction.

Q3 – Concordance lists help learners to identify useful phrases.

Q4 – Concordance lists help learners to identify collocations.

Q5 – Concordance lists help learners to identify grammatical patterns.

Q6 – The use of concordance lists challenges learners to actively construct generalizations about a word's meaning.

Q7 – The use of concordance lists challenges learners to actively construct generalizations about a word's syntactic patterns.

Q8 – Concordance based study of words is useful for learners to build their lexical knowledge.

χ^2 = chi-square * $p < .05$ ** $p < .01$

Since the number of participants who responded to this section was not high, the results gathered may not be enough to be statistically interpreted. Still, when the table is examined, it can be seen that the distribution of responses reveals significant groupings. Responding to Q2, most respondents agreed that the information provided in concordance lists is useful for vocabulary instruction. The majority of respondents similarly agreed with the next two statements, that study of concordance lists helps learners to identify useful phrases and collocations. The findings may be interpreted to mean that the participants who make use of the concordance lists in their teaching believe in the usefulness of these lists especially in identifying collocation patterns.

Interview data further supported the findings in this section.

(A3) It [concordance output] presents authentic language and how it's used in authentic contexts of different corpus. Corpora present words in real contexts. It's much better than relying on intuitions. Which preposition goes with that word? On, in, at? Check it in the concordances.

(A11) [It gives meaning in] context and shows different uses [of a word].

(A12) It strengthens students' awareness that English is not made of words only, but of collocations. [Concordance] lists make students see common collocations words have with other words. Students can also see different meanings of the same word used in different contexts, shows students that words have certain patterns.

While telling how they would present concordance lists and output, the teachers who used them also revealed some possible problems and disadvantages concordances may have unless carefully used.

(A3) I've used concordance lists with my advanced level students; I think such raw data wouldn't work with basic students, as it would be too difficult for them. With my advanced students I prepare tasks for them to refer to the output, for example which preposition is used with 'difference'.

(A11) I got different reactions [from my students], some of them found it [concordance output] difficult, but I tell them they don't have to understand all the words, they can just read and try to find out the words they can understand... parts of speech, guessing meaning from context, usage...again it depends on the level.

(A12) I don't use the concordance lists as they are, because they seem complicated. So I rearrange them; from the output I pick up sentences that students may be familiar with or guess the meaning from familiar collocations.

Most participants who were offered the DDL and concordance applications sessions in the CCTD in 2002-2003 academic year did not respond to these questions because they had not completed the sessions. The major reason for that, as the interviews support, was the sessions were offered online only. The CCTD was offered online for the first time during 2002-2003 academic year. For some teachers who attended the CCTD course, however, it was not useful but rather discouraging and demotivating.

(A8) I didn't find the online sessions useful. I didn't like it, I'd prefer having the sessions face to face... you can ask questions directly to the tutor when you have any problems... I tried doing some tasks and sessions online, I had problems...think it's time consuming.

(A9) Including the concordance-applications training sessions, the CCTD this year runs online. And we have 1 or 2 hours of workshop sessions... since we don't have further face-to-face sessions with tutors but online sessions only, we miss the pace and the sessions... so I get frustrated; I miss one session, and then another session and I get frustrated.

Actually the whole of the CCTD sessions in the specified year, and the workshops and tutorials were carried out online only. This innovative approach discouraged some CCTD trainees and resulted in dropouts from sessions. The following section will examine whether the CCTD training course has an impact on teachers' attitudes towards incorporating computer technology resources in their teaching; if yes, to what extent, and if no, what are the reasons.

The CCTD

Based on the results of the questionnaires, a stratified sample of 12 teachers was selected for follow-up interviews. The questionnaire results revealed statistically significant differences between teachers who have taken computer technology training and those who have not in terms of their attitudes towards computer use and towards integrating computer technology resources in language teaching. Follow-up interviews were used to determine whether positive attitudes or interests led people to undergo training or the reverse.

The first section of the interview was about the in-service training course, the CCTD (Certificate in Computers and Teacher Development). Different interview questions were designed for different participants in this section. Those who indicated in the questionnaire that they have not taken the CCTD course before were asked why they have not taken it so far and what they would expect from such a training course if they took it. For those who have completed the course, a different set of questions were asked: the first question was used to determine whether positive attitudes or interests led people to undergo the CCTD training course or the reverse, that is, whether the training resulted in attitude change. The second question asked whether the CCTD has been useful for integrating educational computer technology resources into teaching; if it has how, and if not why not. The following subsection will present the findings from the responses to the first section of the interview.

Computer technology training at EMU-SFL

The CCTD training course has been offered since 1999 at the EMU-SFL. It is an in-service professional development course offered on a voluntary basis. One of the concerns of the study was to find out why some people choose to take the course while others do not. The participants who have completed the course are divided into

two: ones who completed it before 2002-2003 academic year, and those who completed it in the specified year. The CCTD offered in the 2002-2003 academic year differs from the previous ones in two ways: first, it was offered online, as online sessions and tutorials, unlike in the previous years when it was offered as face to face sessions and tutorials in the computer lab; and second, the DDL and concordance applications were offered for the first time in that year.

Among the 97 teachers who participated in the study, 42 reported taking the CCTD course while 55 reported that they had not taken it. 14 teachers out of the 42 completed the course in 2002-2003 academic year, and 28 teachers took the CCTD training course in previous years. The following pages examine all three groups' responses and reasons.

Teachers who have not taken the CCTD course had their reasons, such as time and fear of failing the course since it would require computer knowledge. Responding to the question why they had not taken the CCTD training course so far, all 3 participants, A5, A6, and A7 stated that they had not had time and opportunity to start the course because they were busy with their MAs or other in-service professional development courses such as COTE and CEELT. A5 added that he had not been really interested in taking the course until a few years ago when he began observing the rapid advance of technology in every area of life, including education. He observed his colleagues who had completed the course and become confident and interested in incorporating computer technology in their language instruction. In addition, he witnessed the implementation of computer technology resources into the school's curriculum such as the online EAGLE learning environment that both teachers and students can refer to. He said he also wanted to attend the training

course but feared failure because he was not good at even basic computer skills. Thus he decided to improve himself first.

(A5) ...I wasn't feeling ready and had the fear of failure because the course offers advanced computer technology tools and resources. I first wanted to learn the basic computer skills by myself. Now I feel enough confidence to take further computer technology training.

A7, on the other hand, had a different reason. She reported that as soon as she completed her MA, she signed up for the CCTD in 2002-2003 academic year. She said she had always had a positive attitude towards integrating computer technology into instruction and wanted to learn ways of doing that. She attended a few sessions and then dropped the course. Her reason was that in the specified academic year, the CCTD course was offered online. It is clear that the new system demotivated A7:

...I couldn't sit before the computer and do all the work online by myself... what scared me was every session was online with chunks of background reading and online practice tasks for us to complete, for example how to send an e-mail, and again online feedback and evaluation of the session.

The second question asked the participants what they would expect from the CCTD course if they took it. There were a variety of expectations. A5 expected ways of integrating computer technology tools and resources that would involve students in language learning. He said besides traditional teaching and learning environments, he needs to find innovative ways of providing learning opportunities. Therefore, taking such a training course would encourage and enable him to find these ways of enriching the teaching and learning environment.

(A5) I expect the course to offer me ways of incorporating computer technology into my teaching practice and [bringing] new methods and techniques... which eventually enhance the communicative and interactive nature of relationship between learners, me, and learning materials. My opinion is that teachers should do whatever is needed to attract their students' attention and interest, and technology is one way of doing that. The CCTD

course, therefore, should also consider students' needs as well as teachers' needs.

A6 stated that one of her friends taught her how to use EXCEL and enter her students' grades into the program, and she really enjoyed the experience and felt her computer skills improved as a result.

(A6) I am able to use it [Excel] now... and what I would expect from such a course... may be some new tools to improve my general office management skills, or some new techniques and activities to improve my teaching.

A7 stated she needs to be provided with opportunities to reflect and discuss the computer technology integration, so that she can share outcomes and possible problems with each other.

(A7) We need training and care-and-share sessions to share these ideas among ourselves... for example you come here for the questionnaire and we talk about this tool for five minutes and I realize one value of it: using the concordance tool, so we do need more information channels.

Four interview participants were chosen from those who completed the course before the 2002-2003 academic year. A1 and A4 completed it in 1999, A3 in 2001, and A2 in 2002.

The first interview question directed to these participants was whether the CCTD course affected their attitude towards computer technology, and if yes, in what ways it had an influence. The responses varied. Some teachers said they already had a positive attitude towards and interest in computers and educational computer technology but wanted to improve their skills. Others said they felt either fear or lack of confidence in using computers and they wanted to take the training course to overcome these.

(A3) I used to be afraid [of computers] that I'd touch a wrong button and everything would be messed up, so the CCTD, in the first place, helped me not to be afraid of computers and now I can use them very confidently. Now I feel comfortable in using them

and that's an attitude change definitely. I didn't have a negative attitude, but I was scared [of using computers].

The second question asked teachers whether the CCTD has been useful for integrating computer technology tools and resources into their instruction. Most reported it has, but still there were varied opinions of the extent. A1 said she learned how to use Word and Front-Page programs to design paper and web-base tasks and materials and some of these were used in the Upper-intermediate supplementary packs, but she said she never had a chance to use these materials in class. She stated, however, she became more aware of ways of encouraging and guiding students in how to refer to and make use of online activities and CALL programs in the CCTD.

A2 pointed out that she learned how to use many computer tools and resources, but teachers were not given further suggestions on how to actually employ these tools and resources to make their teaching more effective. She thought that the content of the course should be changed so that there are more practical suggestions about how to integrate the computer tools they learned about into their teaching.

(A2) most of what we learned was knowledge about and introduction to technology and experimenting with its tools. So we just learned about many tools... but we didn't have any opportunity or given sufficient suggestions on how to actually make use of these tools and resources to make our teaching more effective. I think in this respect the content of the course [CCTD] should change.

A4 believed that having completed the CCTD, she had improved a lot in her computer skills; she could use Hot-Potatoes (software) to prepare interactive materials. She thought that the foundation of the EDCOMPS (Educational Computing Services) unit and the CCTD training program was a big step for technology integration in the EMU-SFL. She mentioned Web-quests as an example.

(A4) I also prepared some web-quests as well, adapted actually [from existing web-quests online]. And it really worked, the adaptations were successful and web-quests have been well

integrated into the course syllabus. Teachers can monitor stages, and students know that these web-based projects are part of their course content and that they will be assessed on what they've completed...

She also added that she is a part of the committee that is planning to integrate EAGLE online tasks into the course syllabus at the Faculty of Communications English courses.

Like A4, A3 said she has improved a lot in her computer skills. She added that she took part of the EAGLE online project, which encourages students to use the online resources for self-study and development. She contributed to the EAGLE project with lots of materials. In terms of personal integration in her classroom practice, however, she said she could not take computer technology resources into her classroom to any great extent due to the overloaded syllabus and lack of time for preparation. Responding to a further question on more effective integration of computer technology into classrooms, she said integration has already started, not on the personal level maybe, but in terms of syllabus integration:

(A3) The course I'm teaching now at the MLD, the technical report writing, requires students to refer to the EAGLE online and complete tasks there, and this makes up 10 % of their overall grade. In fact this is integration.

Five participants who took part in the interview were selected from those who completed the CCTD training course in 2002-2003 year. The course offered in the specified year has an importance in the study because it differed from the training course in the previous years in that it was offered online and provided sessions on DDL and concordance applications.

The first interview question investigated in what ways the CCTD has changed the participants' attitudes towards computers, both in general and in language teaching. With the exception of A12, all participants stated that they already had

positive attitudes and interest in computers, that is why they decided to take the CCTD to improve their knowledge and skill in computer technology.

(A10) I have already liked using computers. I'm enthusiastic about computers and I like using them in education... the main reason I took this training course was to learn other ways, possibilities of using computers in teaching... to find ways of involving students in ways of learning with computers.

They agreed that the course has been useful in broadening perspectives and suggesting ways computer technology might be integrated into language instruction.

A9 said:

I now see them [computers] more as pedagogical tools rather than surf-the-net, check-the-e-mail tools.

A11 added that the CCTD showed her how to integrate computer technology into language teaching and this motivated her.

A12's reason for taking the CCTD training course was different from the others. Before the CCTD he had neither knowledge about nor interest in computers. He asserted that he was afraid of computers and so did not have positive attitudes towards them. What forced him to take such a training course was realization that technology was of growing importance in education and he needed to equip himself to deal with this.

(A12) Our age is a technology age and I felt I was behind technology. My students would come up and tell me about CD ROMs and CDs and I was ashamed I had no knowledge about these things, so this also affected...my students made me aware in a way that I didn't know anything about computer technology. So, considering these, the CCTD really helped me to get rid of that mood and made me more friendly towards computers.

The second interview question asked teachers whether the CCTD has been useful for integrating computer technology tools and resources into their instruction. All the participants reported it has, but there were varied opinions of the extent. A12 stated that the CCTD was really helpful and now he not only applies what he has

learned in his classroom practices but also involves students in the use of technology.

He summarized how he had changed after taking the course,

(A12)...in the past six years I never integrated any computer technology into my teaching. I knew, for example, how to send e-mail but I never imagined I could use it for teaching purposes like assigning and collecting tasks via e-mail... now I am making use of computer technology more in my classroom activities. For example, I use Hot-Potatoes [material-design software] to prepare cloze-text activities and get my students to complete them in the SSSC [computer lab]. I also call my students into it... I teach them how to use the program to create their own exercises.

A11 said the course had been useful in many ways, such as designing both paper-based and online materials, and doing research on the Internet for material design and teaching resources and using such tools. She said she also used what she prepared in the class and this brought variety and motivation, both for students and for herself.

(A11) I tried to use all the materials and activities I designed in class. I sort of tried ways of motivating my students...it did not only motivate my students but also motivated us, it gave us motivation because what we did was something new and it's challenging...

A9, on the other hand, was ambivalent about the usefulness of the CCTD for integrating computer technology into language instruction. She said:

(A9) YES it has been useful because we learned different ways of integrating these resources into teaching... and NO because we do not have time to do the integration, and we are not given time so that we could do the integration.

She added that with such a busy teaching schedule and loaded syllabus, teachers cannot be expected to create extra time and space to find ways of integrating computer technology into their classes. She said this would only be possible if computer technology resources are integrated into the curriculum and course syllabuses.

Conclusion

This chapter has presented the findings of the analysis of data obtained from interviews and questionnaires. These data were related to the teachers' attitudes towards and approaches to computer technology use in language instruction, including the online concordance-based vocabulary enhancement tool.

EMU-SFL teachers seemed to have positive attitudes towards computer in general and towards computer technology use in improving language instruction and learning. On the other hand, not all teachers feel comfortable and confident that they can integrate computer technology resources into their teaching practices. The main reason for this seems to be lack of knowledge about and training in how to integrate these resources into instruction. Indeed, analysis of T-test results and interview findings revealed that training has an impact on attitude change towards and perception of computer use in language instruction.

Although the CCTD training course has been reported to be useful by most participants, a few possible problems were also observed. One problem is to do with the content of the course. It's been suggested that the course content should be more supportive and guiding in terms of how to better integrate computer technology resources teachers learned about into classroom instruction practices. A second problem is to do with format and organization of the course. Although offering the course online seems to be a good idea for addressing a wider population of participants, some teachers have yet to fully accept the new system. Finally, knowledge and training alone may not be enough for the use of computer technology resources in language instruction. A better integration of computer technology resources into the curriculum may help in eliminating such factors as time that prevent teachers from using these resources in supplementing their instruction.

CHAPTER V: CONCLUSION

Overview of the Study

This study investigated English as Foreign Language (EFL) teachers' attitudes towards the use of computer technology resources in language instruction in general, and their attitudes towards and approaches to a concordance-based online vocabulary enhancement program (Compleat Lexical Tutor-CLT) and its possible classroom application tools in particular. For the study, a questionnaire and follow-up interviews were used as data collection devices. The participants of the study were teachers working at Eastern Mediterranean University School of Foreign Language (EMU-SFL).

In the following sections of this chapter, the findings and implications drawn from the results of data analyses will be presented and discussed. The findings will be presented and discussed under four headings in relation to the major themes emerging from the study. These headings are: teachers' attitudes towards computers and the use of computer technology resources in language instruction, the impact of training on teachers' perceptions of and attitudes towards using computer technology resources in language instruction, factors influencing language teachers' use of computer technology resources, and CLT applications in vocabulary instruction. Finally, limitations of the study and suggestions for further research will be discussed.

Discussion of Findings

The findings that were gathered from the data analysis in Chapter IV are presented in four subsequent sections. The first section below presents findings that sought to answer the first research question: "What are teachers' attitudes towards computers and use of computer technology resources in language instruction?"

Teachers' Attitudes towards Computers and the Use of Computer Technology Resources in Language Instruction

Section Two of the questionnaire was designed to investigate EMU-SFL teachers' attitudes towards computers and the use of computer technology resources in language instruction. The results showed that computer use among teachers is very frequent. Most teachers use computers for such general purposes as e-mail, Internet, office work, typing and keeping lesson plans, and typing and storing materials. Most teachers also reported generally positive attitudes towards computers and stated that computers make completing tasks easier, both at work and in daily life. They also reported they like searching the Internet for general interest. The results gathered are the ones that may be naturally expected in an age in which people are surrounded by advanced computer technology resources. Computer technology has long entered into people's daily lives in almost every field, including educational system and schools. In many schools today, teachers are making use of computer tools for such general purposes as stated above (Gruich, 2002).

On the other hand, when it comes to teachers' opinions about and attitudes towards use of computer technology resources in language instruction, responses vary. Although many teachers stated they perceive computers as pedagogical tools and reported positive attitudes towards the use of computer technology resources in language teaching, a considerably high number of teachers remain undecided whether they would use these resources for teaching purposes. Moreover, many teachers are unsure whether they can take risks in teaching with computers although they think that computers can be a good supplement to support teaching and learning. It seems that the SFL teachers perceive computer technology resources as a support tool rather than something they can use for direct instruction.

Overall, these findings may imply that the SFL teachers are generally positive about computer technology use in language instruction and are willing to integrate computer technology resources into their teaching. Yet, they need to be more informed about computer technology resources and go through further training to consider computer technology integration. This need has also been identified by research in the literature (Dupagne & Krendl, 1992; Dusick, 1998; Ely, 1990; Hoffman, 1997).

The Impact of Training on Teachers' Perceptions of and Attitudes towards Using Computer Technology Resources in Language Instruction

The study also examined whether the computer technology training course (CCTD) offered to volunteer teachers at the SFL has been useful for developing positive attitudes towards computers and for integrating computer technology resources into their teaching. The questionnaire results revealed statistically significant differences between teachers who have taken computer technology training and those who have not in terms of their attitudes toward computers and in their willingness to integrate computer technology resources into language teaching. Follow-up interviews were used to determine whether positive attitudes or interests led people to undergo training or the reverse. The responses supported both cases for different individuals. Some teachers volunteered for training based on earlier positive attitudes towards computer technology use, while others reported developing positive attitudes as a result of participating in the training process.

When the reasons why people decide to take computer technology training were investigated through the interviews, interesting findings emerged. Some participants stated that they already had positive attitudes towards and an interest in computers and computer technology in language instruction, and so they were

interested in attending such a training course. For these teachers, the aim was to equip themselves with more knowledge of how to incorporate new technology resources into their teaching. Others said that before taking the CCTD they knew very little about computers and some feared using them. These teachers thought that if they took the CCTD training course they would learn more about computer technology and thus get over their fears.

Results of T-test data analysis and interview findings also suggest that teachers who have undertaken training are more willing to try out computer technology resources in their language instruction, if they are provided with time and access to resources. Results drawn from the T-test analysis also reveal that teachers who have undergone training have a more positive attitude towards using computer technology resources and innovations in language instruction when compared to those who have not. Such an attitude may result from the increased confidence which develops through training.

This interpretation is also supported by findings in the literature (Akbaba & Kurubacak, 1998; Clark, 2000; Dexter, et al., 1999). Kemp (2002) found that teachers who spent more time in professional development were found to have more positive attitudes toward technologies, including higher scores on self-efficacy practices and higher innovativeness scores, than their colleagues who spent less time in such activities.

One final finding gathered from the T-test analysis suggests that teachers without training seem to be unsure whether they are the type who can do well with computer tools and whether they are prepared to integrate computer technology resources in their teaching. Lack of knowledge might lead teachers to feel anxious about computers. It also results in a low sense of efficacy and confidence in

integration of computer technology resources in language instruction, which prevents them from using computer technology resources (Akbaba, & Kurubacak, 1998; Albion, 1999). Teachers who have undergone training, however, seem to have the confidence that they are prepared for computer technology integration in their language instruction because they have learned how to employ computer technology resources to supplement their teaching. Therefore, knowledge about the usefulness and training in the use of computer technology is a key factor for its integration (Dusick, 1998; Lam, 2000; Morton, 1996).

Factors Influencing Language Teachers' Use of Computer Technology Resources

While training seems to be a useful way of developing positive attitudes towards the use of computer technology resources in language instruction, interview findings reveal that training alone may not suffice for successful computer technology integration. There seem to be other factors that prevent teachers from the successful integration of computer technology resources into their teaching practices. These factors are lack of time, lack of integration of computer technology resources into the curriculum, and inadequacy of training courses which, while providing information about computer technology resources, fail to provide teachers with ways of incorporating them into language instruction.

Time

Among the resources not fully acknowledged and exploited, this study is particularly interested in the online software (CLT) and its vocabulary enhancement tools. The CLT offers many useful tools for vocabulary and language improvement. All the tools, the concordancer, vocabulary frequency profiler, and cloze-text builder in particular, are useful resources teachers can refer to when preparing

supplementary teaching and practice materials to use in class. The study found, however, that not many teachers are actually referring to the site and its tools (research question 2). Analysis of the questionnaire and interview data reveal that time is one of the major factors that affect teachers' use of the online lexical tutor, as well as other supplementary resources in vocabulary instruction. This factor seems to be a plausible one when the load of the syllabi in the level programs is considered. Heavily burdened with the load of the syllabus, teachers cannot create additional time to refer to supplementary resources, including the online vocabulary enhancement resource, to support their instruction. The problem of lack of time has also been identified by research findings (Dupagne & Krendl, 1992; Ely, 1990; Hoffman, 1997).

Curriculum integration and training support

One important finding from the data analysis is that supplementary resources that are not well incorporated within the syllabi do not receive much attention from teachers. Being already loaded with course content, teachers report they cannot consider referring to other supplementary resources, such as the online vocabulary enhancement tool (CLT) and the EAGLE online. Although both resources are useful for teachers and students, it seems that not many teachers use them to supplement their instruction. Again, this suggests that the useful resources are not advertised sufficiently, or that teachers are not fully aware of the potential of the rich resources available. The issue emerging from these discussions is that these resources need to be better integrated into the curriculum and course syllabi, and teachers need to be provided with training support and guidance on how to better make use of these resources (Herman, 2002).

The most revealing finding from data analysis in regard to factors affecting the use of the CLT is lack of knowledge about and training in how to utilize the CLT and its tools in vocabulary instruction. Analysis of responses to the questionnaire and findings from the interviews strongly suggests that most teachers do not know much about the CLT tools because they have not received proper training. Lack of knowledge and training were also prominent factors behind teachers' responses to questions about the usefulness of the CLT tools; as they did not know much, teachers could not tell whether this online tool and the resources it offers are useful in vocabulary instruction and practice, and whether the tool is also appropriate for students to refer to for self-study and further practice.

Format and content of the training program

Out of 97 participants, only 17 of them reported using the CLT tools to various degrees in their vocabulary teaching practices. Most of these teachers are the ones who completed the sessions on DDL and concordance applications offered during the CCTD training course in 2002-2003 academic year. Some of them, however, did not use the site even though they were offered the sessions. Their reasons were of a different sort: the content of the training course, and attitude towards the format: online sessions and tutorials.

The study investigated whether the CCTD training course and the sessions it offered have been useful in encouraging teachers to incorporate CLT tools into their vocabulary teaching practices. Only two participants responded to these two questions. Most participants who were offered the DDL and concordance applications sessions in the CCTD in 2002-2003 academic year did not respond to these questions because they did not attend and complete the sessions. The major reason for that, as the interviews revealed, was that the sessions were offered online

only. Actually the whole CCTD session in the specified year, and workshops and tutorials were carried out online only. Ironically, this innovative approach discouraged some CCTD trainees and resulted in dropouts from sessions. The problem with the CCTD training course in the previous years was that training sessions clashed with teachers' schedules, and it was difficult to arrange session and tutorial schedules to fit every individual participant. This was one of the major factors that led trainers to adopt this alternative approach so that more people would be able to participate in the course. However, at least for some teachers it didn't turn out to be an appropriate solution. Some teachers could not adapt to the idea of online sessions and could not follow the course. They reported they missed the comfort level created during face-to-face tutorials and care and share atmosphere created during the hands-on practice sessions. Once again, this issue is supported in the literature (Kassen & Higgins, 1997).

Some teachers also stated that although the CCTD has been useful in showing how to use computer tools and resources, it failed to provide teachers with further suggestions on how to actually employ these tools and resources to make their teaching more effective. The issue emerging from these findings is that the content of the course should be changed in such a respect that there are more practical suggestions and hands-on experience about how to integrate computer technology tools and resources into language instruction.

CLT Applications in Vocabulary Instruction

The second research question sought to determine the extent to which teachers make use of the online vocabulary enhancement software and its tools in vocabulary instruction. The study found that only a small number of teachers use this resource and its tools. However, the findings suggest that teachers who make use of

the CLT know how valuable these tools can be as supplementary resources to support vocabulary teaching and learning practices. Responses to open-ended questions that asked teachers how they utilize the tools also indicate that the training teachers received regarding exploitation of the CLT tools proved to be useful. The use and benefits of concordance output in particular, which was one area of interest for this study, are explicitly revealed by teacher responses to the section on their perceptions of the concordances.

Concordances are believed to be useful and many teachers reported using them in activities where learners are asked to identify collocations and certain grammatical patterns. In addition, they are perceived as useful as a means of providing students with opportunities to actively construct generalizations about language. Interviews further suggested that some teachers also guide their students on how to refer to this online resource, CLT, and use its tools for self-study and further practice.

In terms of possible problems with using concordances in class, results gathered were similar to findings in the literature. Learners and even teachers might need training in how to use concordances (Nation, 2001; Stevens, 1991). Exposing learners to concordances, without sufficient training and information on how to make use of them, might cause negative reactions (Thurston & Candlin, 1998). Some teachers reported that the amount of information in concordances confused some students, particularly since this is chunked in list form. This problem has also been identified in the literature. Reporting on his students' reflections about studying concordances, Johns (1997) advises that learners should not try to understand everything in them. Johns also suggests that teachers may need to reorganize information in the concordance lines so that it is meaningful for students. In short,

careful planning and appropriate teacher training needs to be carried out to overcome such constraints as limited time and space for computers in classroom instruction, and student and teacher attitudes toward computerized corpus tools for better integration and exploitation of concordances in language instruction (Pickard, Chan, & Tibbets, 1994).

Implications of the Study

The results of this study suggest that simply providing technology resources does not guarantee their use in language instruction. Therefore, it is necessary to convince teachers of the usefulness and benefits of these resources in improving teaching and learning. This suggests the need for effective guidance, support and training for teachers in integrating computer technology resources into language instruction through more hands-on and directly practical experience. The results gathered were interpreted to mean that most teachers at the SFL seem to strongly believe in the usefulness of technology resources in improving language instruction. The most prominent factors that influence use of computer technology resources identified in this study are provision of efficient and effective training support, and more systematic incorporation of technology resources into the curriculum. These are also supported by research findings (Clark, 2000; Dexter, et al., 1999; Herman, 2002).

Training should not be limited to how to use computer technology; it should show teachers how they can make use of technology in improving the quality and effectiveness of their instruction, as well as how such technology resources can be effectively integrated into the curriculum. In other words, findings suggest the need for ongoing training and assistance in helping teachers to better employ computer technology resources in pedagogic practices.

Although it is important to know that teachers need more equipment or more time to plan for technology use, it may not always be enough. It may also be important to understand teachers' reasons for technology using or not using computer technology and their beliefs about the value of technology in teaching and learning practices. Internal barriers to computer technology use may persist even when external barriers are removed. As Ertmer, et al. (1999) suggest, while addressing barriers at each level of technology integration, certain strategies should be taken into account. First of all, while introducing computer technology resources to teachers, their pedagogical potential should be emphasized and guidance and assistance should be provided on ways of integrating these resources into instruction. This need was implied during the interview. Second, those who plan to integrate particular technology resources, as in the case of the lexis project at EMU-SFL, need to provide the rationale and grounding for better integration into language instruction and learning. Furthermore, during the integration process, teachers need to be provided with explanation, guidance and assistance from trainers and other colleagues, and also the opportunities to reflect and discuss the integration, share outcomes and possible problems with each other. Kassen and Higgins (1997) also highlighted this need.

Limitations of the Study

The first limitation is that this study is not generalizable. The study was conducted with teachers working at Eastern Mediterranean University School of Foreign Languages. The results of the study reveal the attitudes teachers and this institution. It would not be appropriate to generalise this situation to all English teachers working in preparatory schools in Turkey who may face very different conditions to the participants of this study.

Another limitation of this study is that no classroom observation was carried out by the researcher to understand whether the teachers actually use computer technology resources and the tools of the online vocabulary enhancement software as often as they report in the questionnaire, and whether they use them effectively.

The question of confidentiality was another issue. To be able to select teachers for the interview, questionnaire participants were asked to provide their names. Although teachers were informed that the personal information provided would be kept strictly confidential in any report deriving from the data they provided, providing their names might have affected some teachers' responses.

Suggestions for Further Research

This study examined how teachers perceive the incorporation and use of computer technology resources, in particular online concordancing software, in teaching practices. The study specifically investigated teachers' attitudes towards and approaches to using these resources in their vocabulary instruction. However, classroom observations to understand whether the teachers really do what they report doing in the questionnaire and interviews were not undertaken. Thus, further research using observations, might be carried out to understand whether, to what extent, and how EMU-SFL teachers actually apply computer technology resources and tools in their language instruction practices. Observations may also help reveal the effectiveness of computer technology resources in supplementing and improving teaching and learning. Also, case studies might be conducted to understand how teachers plan the integration of these resources into their teaching. A topic for additional research may be an investigation of the correlation between the teachers' use of computer technologies and student achievement.

In order to investigate the perceptions of other teachers working at other universities and their attitudes towards the use of computer technology in language instruction, future studies could be conducted, perhaps in the form of a wide-scale survey.

Finally, students' perceptions of the use and effectiveness of computer technology resources in language learning, and their approaches to using these resources could be investigated by future studies.

Conclusion

The findings of this study showed that teachers were largely underutilizing computer technology resources in their instruction even though these resources were available in their school. Despite generally positive attitudes, most of the teachers reported not using the online vocabulary enhancement resource at all for teaching vocabulary. To understand how to achieve better integration, we need to study teachers and what makes them use computers, and we need to study computer technology resources and what makes teachers want to or need to use them (Marcinkiewicz, 1994).

There are also practical implications to this study. Self-efficacy contributes to a teacher's use or non-use of computers. After a preliminary identification of teachers' level of self-competence and innovativeness, staff development and training programs could be provided. The innovative nature of technology, as it continues to change and expand, will require teachers to adapt and change the way they approach teaching and learning.

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APPENDICES
APPENDIX A
QUESTIONNAIRE

Dear Colleagues,

I am currently enrolled in the MA TEFL Program at Bilkent University. The aim of my research study is to learn about teachers' general attitudes towards computers, and towards integrating computer technology in language instruction. I am also investigating how much teachers know, and feel they need to know, about an online vocabulary enhancement program and its possible classroom applications. The online program is the ***Complete Lexical Tutor- CLT (available at <http://132.208.224.131/>)***, offered as a supplementary vocabulary teaching and learning tool within the new lexis project at the School of Foreign Languages (SFL).

The findings of the study may contribute to the improvement of the lexis project, the quality of materials, and the quality of educational technology courses and programs aiming to promote professional development. The results may be of benefit to you as teachers, to the administration, and ultimately to the students of the SFL.

This questionnaire is the first phase of the study. The second phase will be in the form of interviews. These will be held with teachers selected according to diversity of answers given to this questionnaire. Therefore, in order to get in touch with those teachers, I will ask you to provide your name and surname in *Section One*. The personal information provided will be kept strictly confidential in any report or article deriving from the data you provide.

If you have any questions, please do not hesitate to contact me or my thesis advisor, Dr. Endley.

Thank you in advance for your help and cooperation.

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Consent Form

I have read the above information. I hereby give my consent for the data acquired to be used by Erkan Arkin in this survey.

Name:

Date:

Signature:

SECTION ONE: BACKGROUND INFORMATION

Please *tick* (✓) the appropriate choices and provide the necessary information below.

1. Name & Surname:
2. Age: 20-25 26-30 31-35 36-40 41-45 45+
3. Sex: Male Female
4. Years of teaching experience:
 Less than 1 year 1-4 5-8
 9-12 13-16 17 or more
5. Currently teaching at
 IED level: pre-int intermediate upper-int
 MLD level: basic mainstream advanced
6. Have you completed the CCTD previously? yes no
If yes, indicate the year _____.
7. a) Are you currently taking the CCTD course? yes no
b) If yes, have you completed the sessions on data-driven learning (DDL) and concordance applications? yes no

SECTION TWO: GENERAL ATTITUDES

This section is to find out about your general attitudes towards computers in general, and towards using computer technology in language instruction.

1. What do you use computers for? Please tick (✓) the appropriate option(s), and also indicate your frequency of use (e.g., _✓_ *electronic mail* [1 2 (3)]).

1= rarely 2= sometimes 3= often

- | | |
|---|---|
| <input type="checkbox"/> electronic mail [1 2 3] | <input type="checkbox"/> chat rooms [1 2 3] |
| <input type="checkbox"/> games [1 2 3] | <input type="checkbox"/> surfing the Internet [1 2 3] |
| <input type="checkbox"/> online shopping [1 2 3] | <input type="checkbox"/> entertainment [1 2 3] |
| <input type="checkbox"/> materials design [1 2 3] | <input type="checkbox"/> web page design [1 2 3] |
| <input type="checkbox"/> typing and maintaining lesson plans [1 2 3] | |
| <input type="checkbox"/> office work: student records, administrative reports (e.g., word, excel) [1 2 3] | <input type="checkbox"/> assigning and checking homework via e-mail [1 2 3] |

___ other

2. How often do you use computers? Please tick (✓) the appropriate option.

- less than once a week 1-2 times a week
 3-4 times a week 5 or more times a week

For the following items, please **circle** the answer that best shows your opinion.

1= strongly disagree 2= disagree 3= undecided 4= agree 5= strongly agree

3. I like using computers.	1 2 3 4 5
4. I generally have positive attitudes towards computers.	1 2 3 4 5
5. Using computers makes me more efficient in my life.	1 2 3 4 5
6. Using computers makes me more efficient at my work.	1 2 3 4 5
7. Using computers generally makes completing tasks easier.	1 2 3 4 5
8. I like searching the Internet for general interest.	1 2 3 4 5
9. I perceive computers as pedagogical tools.	1 2 3 4 5
10. I generally have positive attitudes towards using computer technology in teaching.	1 2 3 4 5
11. I like using computers for teaching purposes.	1 2 3 4 5
12. I like searching the internet for teaching resources.	1 2 3 4 5
13. Computers can be a good supplement to support teaching and learning.	1 2 3 4 5
14. I believe I can take risks in teaching with computer technology.	1 2 3 4 5
15. If I have time, I would like to try out instructional computer technology innovations in my teaching.	1 2 3 4 5
16. If I have access to resources, I would like to try out instructional computer technology innovations in my teaching.	1 2 3 4 5
17. If I have training, I would like to try out instructional computer technology innovations in my teaching.	1 2 3 4 5
18. I am not the type to do well with computerized teaching tools.	1 2 3 4 5
19. I am not prepared to integrate instructional computer technology in my teaching.	1 2 3 4 5

If you have indicated that you have taken the CCTD, please respond to the items below.

20. The CCTD has been useful for changing my attitudes towards computers.	1 2 3 4 5
21. The CCTD has been useful for integrating instructional computer technology resources into my teaching.	1 2 3 4 5

SECTION THREE: THE LEXIS PROJECT AND NEW APPROACH TO VOCABULARY

This section of the questionnaire is to learn about your general impressions of the new lexis project (*i.e.*, *lexis section in the packs at IED; AWL at MLD; EAGLE based resources*). This project has been implemented to contribute to the development of learners' general and academic vocabulary.

To what extent do you agree with the following items? Please **circle** the answer that best shows your opinion.

1= strongly disagree 2= disagree 3= undecided 4= agree 5= strongly agree

1. The new lexis project has brought a principled approach to vocabulary instruction and learning.	1	2	3	4	5
2. The rationale behind the new lexis approach has been clearly stated.	1	2	3	4	5
3. The materials provided within the lexis worksheets are useful for teaching vocabulary.	1	2	3	4	5

If you have indicated 1 (strongly disagree) or 2 (disagree) with item 3 above, please go to item 4 below. Otherwise, please go directly to item 5.

4. In what ways were the worksheets not useful? Please tick (✓) the appropriate option(s) below.

- too complicated for students to complete
- vocabulary provided not appropriate for students' levels
- vocabulary provided not appropriate for students' needs
- too much material to cover in class time
- not flexible enough to be used in different ways
- no recycling of vocabulary
- other (please specify below)

.....

5. Are the lexis worksheets the **only** resources you refer to when teaching the general and academic words?

[] yes [] no

If *no*, what other resources do you use in vocabulary teaching? Please specify below.

.....

6. To what extent do you make use of the vocabulary enhancement tools of on-line lexical tutor in teaching vocabulary? (The online program is *The Complete Lexical Tutor, CLT- available at <http://132.208.224.131/>*, offered as a supplementary vocabulary teaching and learning tool within the new lexis project). Please **circle** the appropriate option.

1. never 2. rarely 3. sometimes 4. often 5. always

If you have indicated *never*, please complete SECTION FOUR only.

If you have indicated *rarely, sometimes, often, or always* please complete SECTION FIVE only.

SECTION FOUR: FACTORS AFFECTING TEACHERS' NON-USE OF THE CLT

If you indicated you have *never* used the vocabulary teaching and learning tools that the online *CLT (Computer Lexical Tutor)* software offers, please respond to the items in the table below.

To what extent do you agree with the following items? Please *circle* the answer that best shows your opinion.

1= strongly disagree 2= disagree 3= undecided 4= agree 5= strongly agree

I do *not* use the CLT tools in vocabulary teaching because

1. I do not have adequate access to computers.	1 2 3 4 5
2. I do not have adequate access to the Internet.	1 2 3 4 5
3. I do not have time to consider the integration of CLT tools in my teaching.	1 2 3 4 5
4. I do not know how to make use of the CLT tools in vocabulary teaching.	1 2 3 4 5
5. I did not receive sufficient training to integrate the CLT tools in my teaching.	1 2 3 4 5
6. I do not believe the CLT tools are useful in vocabulary teaching.	1 2 3 4 5
7. I do not think my students are ready for computer-assisted learning.	1 2 3 4 5
8. I do not think the CLT tools are suitable for the level of my students.	1 2 3 4 5
9. I do not think the CLT tools are useful for improving student learning.	1 2 3 4 5
10. What I do in class with traditional methods is sufficient in teaching vocabulary.	1 2 3 4 5

To what extent do you agree with the following items? Please *circle* the answer that best shows your opinion.

11. Simply providing technology resources is not enough to persuade me to use them in teaching.	1 2 3 4 5
12. I need to be provided with training to develop pathways for integrating technology in my instruction.	1 2 3 4 5
13. If I knew how to make use of the CLT tools, I would consider using them as supplementary tools in teaching vocabulary.	1 2 3 4 5
14. I do not believe in the usefulness of technology resources in improving language instruction.	1 2 3 4 5

SECTION FIVE: THE CLT APPLICATIONS IN TEACHING

If you have indicated you have *rarely, sometimes, often, or always* used the vocabulary teaching tools that the online *CLT (Computer Lexical Tutor)* software offers, please respond to the items below.

- The *CLT (Complete Lexical Tutor)* offers the following tools for use in vocabulary teaching.
 - Please write *N* in the blanks before any tool you have **not** used.
 - For the remaining tools, please rank them in order of usefulness, with (1) as the most useful.

- | | |
|----------------------------------|----------------------------------|
| __ concordance applications | __ cloze text builder |
| __ vocabulary frequency profiler | __ vocabulary level tests |
| __ hypertext builder | __ quizzes in cloze passage form |

Please respond to items 2-8 if you have indicated above that you have used *concordance applications*. Otherwise, please go directly to item 9.

To what extent do you agree with the following advantages of using concordances in teaching and learning vocabulary? Please **circle** the answer that best shows your opinion.

1= strongly disagree 2= disagree 3= undecided 4= agree 5= strongly agree

2. The information provided in concordance lists is useful for vocabulary instruction.	1	2	3	4	5
3. Concordance lists help learners to identify useful phrases.	1	2	3	4	5
4. Concordance lists help learners to identify collocations.	1	2	3	4	5
5. Concordance lists help learners to identify grammatical patterns.	1	2	3	4	5
6. The use of concordance lists challenges learners to actively construct generalizations about a word's meaning.	1	2	3	4	5
7. The use of concordance lists challenges learners to actively construct generalizations about a word's syntactic patterns.	1	2	3	4	5
8. Concordance based study of words is useful for learners to build their lexical knowledge.	1	2	3	4	5

9. To what extent do you apply the CLT tools in your vocabulary instruction? Please **circle** the appropriate option.

1. rarely 2. sometimes 3. often 4. always

10. Which CLT tools do you use most in teaching vocabulary and **how** do you make use of them? Please **specify** in the space below.

.....

.....

.....

.....

If you have indicated that you have completed the CCTD sessions on data-driven learning (DDL), concordance applications, and other applications of the CLT tools, please respond to the items below.

11. The DDL session was useful for changing my attitudes towards computer assisted vocabulary instruction	1	2	3	4	5
12. What I learned from the sessions is applicable in my vocabulary instruction practices.	1	2	3	4	5

APPENDIX B

INTERVIEW SCHEDULE (VERSION 1)

CCTD

[Those who have not taken it]

In the questionnaire you indicated that you have not taken the CCTD course.

1. Why haven't you taken the CCTD so far?
 2. If you took a computer technology training course, do you think your attitudes toward computers change, as well as toward integrating instructional computer technology resources into your teaching?
 3. What would you expect from an educational technology course in order for it to be useful (for improving your teaching)?
-

THE LEXIS PROJECT

[bring in a sample worksheet from the intermediate pack]

4. What are your perceptions of the new lexis approach to vocabulary teaching and learning, by which we aim to place more focus and teach the most frequent and academic words in English?
5. How do you make use of the lexis worksheets in class?[refer to the sample worksheet]
6. Do you think the worksheets have been useful in teaching the general and academic vocabulary?
 - * if not, in what ways were the worksheets not useful?
 - * if yes, in what ways?

7. What other resources do you refer to teaching the words in focus?
8. Do you also emphasize in class that the lexis worksheets are useful for students?
 - * if yes, how do you encourage them to study these words on their own?
 - * if no, why not?

FACTORS AFFECTING NON-USE OF THE CLT IN TEACHING VOCABULARY

[Those who indicated they do not use the CLT tools]

9. What is the major factor that prevents you from using the online lexical tutor (CLT) in teaching vocabulary?

10. How could this factor be overcome?

11. Do you think your students are ready for computer-assisted learning?

*If no, why not?

* If yes, why do you think so?

[Closure]

Is there anything else you would like to add to about the topics we have covered?

THANK YOU VERY MUCH INDEED FOR YOUR PARTICIPATION AND CONTRIBUTION!!

7. Do you also emphasize in class that these words are useful for students?
 - * if yes, how do you encourage them to study these words on their own?
 - * if no, why not?

CLT APPLICATIONS IN VOCABULARY INSTRUCTION

[bring in the sample concordance output]

8. How would you present the concordance data here to your students in class?

9. What would you ask students to do with it?

10. How do you make use of the CLT tools in teaching vocabulary?

Do you encounter any problems (e.g. concordance output too complicated for students, or students not willing or interested, or the CLT tools too complicated to use in designing materials)?

[Closure]

Is there anything else you would like to add to or say about the topics we have covered?

THANK YOU VERY MUCH INDEED FOR YOUR PARTICIPATION & CONTRIBUTION!!

THOSE WHO RECEIVED CLT APPLICATIONS BUT DO NOT MAKE USE OF THEM

8. Although you have received training on the CLT applications in vocabulary instruction, you indicated you do not make use of them. What are the reason(s) for not using the online lexical tutor applications?

9. How could this factor be overcome?

10. Do you think your students are ready for computer-assisted learning?

* if no, why not?

* if yes, why do you think so?

[Closure]

Is there anything else you would like to add to about the topics we have covered?

THANK YOU VERY MUCH INDEED FOR YOUR PARTICIPATION and CONTRIBUTION!!

APPENDIX E

SAMPLE PRE-INTERMEDIATE LEXIS WORKSHEET

Topic: Honesty

Keyword Box

NOUN	ADJECTIVE	VERB
confession	fair	accuse
effect	honest	beg, bless
fault	suspicious	confess
honesty	unfair	defend
influence		forgive
lie		influence
liar		lie
reality		persuade, promise
truth		suspect
secret		trust

Task 1

Use the correct form of the word and fill in the gaps. Be careful with the tenses.

confess/ confession

1. The murderer made a full _____ to the police.
2. The children _____ to their mother that they spent all the money on sweets.

suspect/ suspicious

1. Everybody in the class _____ Jill of stealing Bill's money from his bag.
2. It's very _____ that he wasn't at home on the night of the murder.

honest/ honesty

1. I want all my friends to be _____ to me all the time.
2. _____ is a very important quality that I look for in people.

fair/ unfair

1. It's not _____ to give all the work to the same person.
2. It was _____ to Mary to ask her to work late.

lie/ liar

1. John tells everyone things which are not true. He's a _____.

SAMPLE INTERMEDIATE LEXIS WORKSHEET

Task I Abstract Nouns	Affairs Attitude Attraction authority	evidence guidance manners	mercy presence rights
Task II	Nouns Admission custom Applicant training Warning	Verbs pretend regret admit remind object	Adjective essential

Task I

Match each beginning (1-10) with the appropriate ending (a-j) to make a meaningful sentence.

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. If you change your attitude towards school 2. Each person's rights must be respected, 3. I don't have the authority to lend you this car, 4. We need your guidance, 5. We have to put all our affairs at school in order, 6. My niece has awful table manners, 7. My professors have no mercy, 8. I couldn't say a word in the manager's presence, 9. The police have enough evidence now, 10. I don't understand men's attraction to fast cars, | <ol style="list-style-type: none"> a. she often talks with her mouth full. b. we're going on holiday this weekend. c. for me, they're just a form of transport. d. I have to finish six projects in two weeks. e. they'll be able to send the man to prison. f. even if you don't agree with them. g. I'm sure your grades will improve. h. we can't deal with this problem alone. i. I'm just the company driver. j. I was too scared to look him in the face! |
|--|---|

Task II – Sentence Completion

Complete the sentences below as you like.

1. I really like the customs we have in my country, especially _____.
2. It's essential for students to come to class every day with _____.
3. All job applicants should _____.
4. When I saw Jack, I pretended I hadn't seen him and _____.
5. There was a warning on the radio about _____.
6. Next week at work I will get training in _____.
7. I wish I hadn't _____ because I regret it now.
8. To gain admission to a university, you must first _____.
9. My parents always object when I _____.
10. My mother is always reminding me to _____.

APPENDIX F

SAMPLE CONCORDANCE OUTPUT

Think of a collection of words or phrases that students consistently overuse (e.g. bad, big, good)

For example, overuse of *big* in contexts like,

<i>big</i>		<i>city(ies)</i>
		<i>difference(s)</i>
		<i>problem(s)</i>

Or misuse of *big* in words like,

**big punishment*

➤ Now, let us look at the following concordance lists to see how words like difference, problem, or punishment collocate with other words.

1 round for Classic fillies. **What a difference** a few precious centimetres can m
3 eon Spilett, "but there is a **great difference** between that and an earthquake.
4 the window. There is a **tremendous difference** in the kind of work he is produ
6 onal one. This is **one significant difference** between fiction and existence. I
7 ones. This is not so: **the crucial difference** between old and new is how it k
9 its release height. The estimated **difference** between the heights was no more
10 ine has been that there is a **huge difference** between the image of Britain acc
11 Santeiro did it long ago. **The huge difference** between the official and parall
12 and Zwingli. There is now **little difference** between them: they focus on the
14 s that one wall could make such a **difference**, " he said. It was hard to beli
15 the lightest article **to produce a difference** in its vertical position. The ap
17 he most poignant examples of this **difference** in perspective. John knew what w
18 hat good parenting **can make a big difference** in preventing early alcohol and
19 bably won't make a **vast amount of difference** in the long run. As Jeffrey Rich
20 had shown that "**people can make a difference**". Living in a totalitarian syst
23 ock to find that **this makes a big difference**. Now that Japanese interest rate
26 l. "One more will **make but little difference**, poor beast!" exclaimed Pencro
28 he point of view of **simple finite difference** schemes due to the term. This
30 e of how biotechnology **can make a difference**. The method used for centuries

54 been willing to confront a **serious problem**. It will be fascinating to see how
55 ly pedestrian but **the fundamental problem** lay elsewhere. Apart from Kevin Mo
52 proach every problem as a **specific problem**. It is what makes us different fro
56 take the strain. The play's **chief problem** lies in the fact that its
Russia identify, but bruises are the **big problem**. This development should reduce pr
8 utline what we see as an **important problem** associated with each of the common
19 wound odour can represent a **major problem** for patients and their
46 ointy end of a jumbo jet. **The real problem** is that he is Swiss and not Danish
50 or the merely excellent? **The main problem** is the large, virtually all black c
51 least 100,000 children. "The first **problem** is to stop adults being afraid of
52 proach every problem as a **specific problem**. It is what makes us different fro

3 and chains, a domain of **perpetual punishment** and pain -- this, too, is grimly
6 to. We're not allowed to wreak **punishment** apart from when our floor Tha
7 e her business, and command, after **punishment** as G53 0480 11 the bench see
8 s the reason for stopping **capital punishment** at Stamford. According to the Re
9 doomed G55 0050 12 to **eternal punishment**, but that God through Jesus Chri
16 lt with; the abolition of **capital punishment** for criminal offences in 1753 le
17 ous coup attempts the most **severe punishment** for leaders was 12 years' hard l

APPENDIX G

Different Age Groups and Their Attitudes towards Computer Technology Integration

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q3	Between Groups	1,850	5	,370	,794	,557
	Within Groups	42,398	91	,466		
	Total	44,247	96			
Q4	Between Groups	1,980	5	,396	,681	,639
	Within Groups	52,907	91	,581		
	Total	54,887	96			
Q5	Between Groups	2,919	5	,584	,872	,504
	Within Groups	60,957	91	,670		
	Total	63,876	96			
Q6	Between Groups	,875	5	,175	,343	,885
	Within Groups	45,865	90	,510		
	Total	46,740	95			
Q7	Between Groups	1,172	5	,234	,328	,895
	Within Groups	64,235	90	,714		
	Total	65,406	95			
Q8	Between Groups	2,667	5	,533	,767	,576
	Within Groups	63,250	91	,695		
	Total	65,918	96			
Q9	Between Groups	1,862	5	,372	,558	,732
	Within Groups	59,338	89	,667		
	Total	61,200	94			
Q10	Between Groups	5,490	5	1,098	1,420	,224
	Within Groups	70,345	91	,773		
	Total	75,835	96			
Q11	Between Groups	2,832	5	,566	,661	,654
	Within Groups	77,158	90	,857		
	Total	79,990	95			
Q12	Between Groups	5,786	5	1,157	1,515	,193
	Within Groups	69,493	91	,764		
	Total	75,278	96			
Q13	Between Groups	1,139	5	,228	,446	,816
	Within Groups	46,531	91	,511		
	Total	47,670	96			
Q14	Between Groups	3,830	5	,766	,841	,524
	Within Groups	79,202	87	,910		
	Total	83,032	92			
Q15	Between Groups	3,768	5	,754	,879	,499
	Within Groups	77,190	90	,858		
	Total	80,958	95			
Q16	Between Groups	3,823	5	,765	,853	,516
	Within Groups	79,798	89	,897		
	Total	83,621	94			
Q17	Between Groups	5,686	5	1,137	1,400	,232
	Within Groups	72,272	89	,812		
	Total	77,958	94			
Q18	Between Groups	12,042	5	2,408	1,874	,107
	Within Groups	116,968	91	1,285		
	Total	129,010	96			
Q19	Between Groups	2,387	5	,477	,335	,890
	Within Groups	129,654	91	1,425		
	Total	132,041	96			

APPENDIX H

Teachers With Different Years of Teaching Experience and Their Attitudes towards Computers

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q3	Between Groups	2,464	4	,616	1,356	,255
	Within Groups	41,784	92	,454		
	Total	44,247	96			
Q4	Between Groups	1,162	4	,291	,497	,738
	Within Groups	53,725	92	,584		
	Total	54,887	96			
Q5	Between Groups	1,330	4	,333	,489	,744
	Within Groups	62,546	92	,680		
	Total	63,876	96			
Q6	Between Groups	,396	4	9,895E-02	,194	,941
	Within Groups	46,344	91	,509		
	Total	46,740	95			
Q7	Between Groups	,693	4	,173	,244	,913
	Within Groups	64,713	91	,711		
	Total	65,406	95			
Q8	Between Groups	5,942	4	1,485	2,279	,067
	Within Groups	59,976	92	,652		
	Total	65,918	96			
Q9	Between Groups	,812	4	,203	,303	,876
	Within Groups	60,388	90	,671		
	Total	61,200	94			
Q10	Between Groups	5,527	4	1,382	1,808	,134
	Within Groups	70,308	92	,764		
	Total	75,835	96			
Q11	Between Groups	5,036	4	1,259	1,529	,200
	Within Groups	74,953	91	,824		
	Total	79,990	95			
Q12	Between Groups	7,459	4	1,865	2,530	,046
	Within Groups	67,819	92	,737		
	Total	75,278	96			
Q13	Between Groups	1,100	4	,275	,543	,704
	Within Groups	46,570	92	,506		
	Total	47,670	96			
Q14	Between Groups	4,728	4	1,182	1,328	,266
	Within Groups	78,305	88	,890		
	Total	83,032	92			
Q15	Between Groups	5,151	4	1,288	1,546	,196
	Within Groups	75,807	91	,833		
	Total	80,958	95			
Q16	Between Groups	4,577	4	1,144	1,303	,275
	Within Groups	79,044	90	,878		
	Total	83,621	94			
Q17	Between Groups	2,747	4	,687	,822	,515
	Within Groups	75,211	90	,836		
	Total	77,958	94			
Q18	Between Groups	7,895	4	1,974	1,499	,209
	Within Groups	121,115	92	1,316		
	Total	129,010	96			
Q19	Between Groups	3,777	4	,944	,677	,609
	Within Groups	128,265	92	1,394		
	Total	132,041	96			

APPENDIX I

Attitude Differences Between Male And Female Participants

Question	Participants	N	M	sd	t
Q3	Male	26	4.62	.57	1.17
	Female	71	4.45	.41	
Q4	Male	26	4.58	.64	1.70
	Female	71	4.31	.79	
Q5	Male	26	4.42	.76	1.66
	Female	71	4.13	.83	
Q6	Male	25	4.44	.87	0.39
	Female	71	4.37	.64	
Q7	Male	25	4.24	.97	-0.26
	Female	71	4.30	.78	
Q8	Male	26	4.42	.76	1.02
	Female	71	4.24	.85	
Q9	Male	24	3.92	.78	0.84
	Female	71	3.76	.82	
Q10	Male	26	4.12	1.03	0.95
	Female	71	3.90	.83	
Q11	Male	26	4.00	1.06	1.05
	Female	70	3.76	.86	
Q12	Male	26	4.12	.82	-0.57
	Female	70	4.23	.91	
Q13	Male	26	4.54	.65	1.03
	Female	71	4.38	.72	
Q14	Male	25	3.60	1.04	0.87
	Female	68	3.40	.92	
Q15	Male	26	3.96	.92	0.43
	Female	70	3.87	.93	
Q16	Male	26	4.08	.93	0.90
	Female	69	3.88	.95	
Q17	Male	25	4.00	.91	0.13
	Female	70	3.97	.92	
Q18	Male	26	2.04	1.31	-0.90
	Female	71	2.30	1.10	
Q19	Male	26	2.19	1.27	-1.26
	Female	71	2.55	1.13	

APPENDIX J

Attitude Differences Between IED and MLD Teachers

Question	Participants	N	M	sd	t
Q3	IED	68	4.44	.70	
	MLD	29	4.62	.62	-1.25
Q4	IED	68	4.35	.75	
	MLD	29	4.45	.78	-0.55
Q5	IED	68	4.15	.82	
	MLD	29	4.34	.81	-1.10
Q6	IED	67	4.28	.71	
	MLD	29	4.62	.62	-2.33*
Q7	IED	68	4.25	.85	
	MLD	28	4.36	.78	-0.60
Q8	IED	68	4.35	.75	
	MLD	29	4.14	.99	1.04
Q9	IED	66	3.74	.75	
	MLD	29	3.93	.92	-0.97
Q10	IED	68	3.93	.90	
	MLD	29	4.03	.87	0.55
Q11	IED	67	3.78	.93	
	MLD	29	3.93	.88	-0.76
Q12	IED	68	4.13	.83	
	MLD	29	4.34	1.01	-1.00
Q13	IED	68	4.41	.74	
	MLD	29	4.45	.63	-0.24
Q14	IED	67	3.37	.95	
	MLD	26	3.65	.67	-1.30
Q15	IED	68	3.78	.99	
	MLD	28	4.18	.67	-2.29*
Q16	IED	67	3.85	1.00	
	MLD	28	4.14	.76	-1.55
Q17	IED	66	3.88	.95	
	MLD	29	4.21	.77	-1.77
Q18	IED	68	2.24	1.21	
	MLD	29	2.21	1.05	0.11
Q19	IED	68	2.50	1.19	
	MLD	29	2.34	1.14	0.60

Note.

* $p < .05$