An investigation into English language teachers’ CALL use in secondary education in Cyprus, their beliefs about using technology in teaching, and the factors that influence EFL teachers’ CALL use.

Submitted by Maria Papayianni to the University of Exeter as a thesis for the degree of Doctor of Education in Teaching English to Speakers of Other Languages

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I certify that all material in this thesis which is not my work has been identified and that no material has been submitted and approved for the award of a degree by this or any University.
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Abstract

This study explores the use of CALL for EFL teachers in secondary education in Cyprus, EFL teachers’ beliefs about using technology in teaching, and the factors affecting EFL teachers’ use of CALL.

In this thesis, a general picture of the current situation is formed with information obtained from the questionnaires and data from interviews and classroom observation. The results show that teachers seem to welcome the introduction of computer technology in education and believe that it can positively affect English language teaching and learning, particularly in terms of student motivation. However, the study shows that teachers generally use computer technology in a rather teacher-centred manner, which maintains rather than transforms their teaching practice. They do not seem to be aware of, or convinced of the potential benefits of ICT in terms of serving curricular goals. Nor do they seem to believe that students know how to use computers for learning. Despite all these matters, the Internet is gaining in popularity, and some teachers appear to be exploring the possibility of integrating computer technology. There seems to be a desire among teachers to learn how to integrate computers into their practices, but do not appear to know how to make this happen. It is evident that extrinsic factors, concerning the environment (lack of hardware and software and difficulty in accessing CALL facilities), available support and training and intrinsic factors, including teachers’ beliefs about technology as well as contextual factors, appear to exert a great influence on teachers’ CALL use. The results raise implications for the Ministry of Education and Culture in Cyprus as well as language teacher education and for teachers themselves.
List of Abbreviations

BA = Bachelor of Arts
CALL = Computer assisted Language learning
EFL = English as a Foreign Language
ELT = English Language teaching
ESC = Educational Service commission
ICT = Information and Communication Technology
IT = Information Technology
KEEA = Education Research and Evaluation Centre
LR = Language Room
MA = Master of Arts
MOEC = Ministry of Education and Culture
SPSS = Statistical Package for Social Sciences
TESOL = Teaching English as a Foreign Language
Chapter 1 - Introduction and Background

This study reports on an investigation into EFL teachers’ CALL and IT use in secondary education in Cyprus, EFL teachers’ beliefs about using CALL and IT in the classroom and the factors affecting their use. This chapter is divided into five parts. In the first part, the background to the study and the rationale behind it is provided. The second and third parts then present the purpose and significance of the study. In the fourth part the teaching context in question will be described, as well as issues around it in relation to English language teaching and learning. The final part provides an overview of all the chapters in this thesis.

1.1 Introduction

‘TESOL operates in a volatile and changing world, involving the expansion of knowledge-based industries in which new knowledge is created, applied and adapted to changing circumstances’ (White, 2001, p. 199).

TESOL, within my educational context, does not seem to be an exception to the above quote. Given the need - real or artificial - for educational reform, the Ministry of Education and Culture in Cyprus decided to introduce an innovation, namely the Language Room (LR) in the year 2000. The LR, according to the ministry, was defined as a classroom consisting of such equipment and facilities that would enhance Computer Assisted Language Learning (CALL), aiming among other things at ensuring more efficient language learning and promoting learner autonomy (Ministry of Education and Culture, 2000, p. 6).

There is a growing consensus in educational research that emphasis on technology, particularly CALL and IT, has increased, and the demand for technologically literate teachers who have the skills to prepare students to be successful in a technology-infused, knowledge-based society has also grown (Pachler & Field, 2001; Hampel and Stickler, 2005; Hubbard, 2009). An important tenet is that technology (computers/the Internet/e-mail) offers great potential to foreign language teachers and learners, an assumption also held by the Ministry of Education and Culture in Cyprus. These recent
developments in content, medium and pedagogy impose new demands on teachers, especially in the area of online teaching. As a result, expectations of what teachers should know and are able to do are continually increasing as teachers are being asked to learn new content, pedagogies and technology tools for learning, but time and resources are often unable to meet the career-long professional needs of teachers (Resta, 2005, p. 1). Indeed, as Hubbard (2009) argues, the question is no longer whether to use computers or not, but how. To this end, researchers emphasize that the need to equip teachers with the skills to teach with technology seems more important than ever (Willis, 2001; Hubbard and Levy, 2006; Pelgrum, 2009). In similar vein, Paraskeva et al. (2008) argue that empowering teachers should be an essential component of both pre-service and in-service courses.

Given the current trends in issues related to the diffusion of computer technologies in English language teaching at the beginning of the 21st century, the Ministry decided to equip a room with computers and other resources. Although this was deemed to be necessary for CALL to be implemented, this was certainly not the number one issue. For centuries now, reformers have been seeking to bring about educational change, and there is little doubt that they are now turning to technology, which some see as a panacea for educational reform (Cuban, 2001). Many reformers, including the Ministry in Cyprus, seem to hold the view that most educational problems can be solved by wiring schools and giving students and teachers access to technology, so for them, further investments are necessary to expand and integrate teacher and student use of technologies into schooling. As a result, while hardly anyone has used them since many teachers are still trying to learn the most basic technical skills, computers in some LRs have been replaced by even more costly updated versions. The experts in the ministry - decision makers, curriculum designers, inspectors of English – may be keen to reduce the digital gap, but computers in schools may be “oversold and underused”, as Cuban (2001) emphasizes, as when it comes to technology integration, the availability of equipment may only be part of a complicated scenario.

The quote below is an indication of the manner in which our inspectors approached the introduction of CALL.
‘As for using computers, teachers should bear in mind that they ought to familiarize themselves with new applications or new programmes as technology advances rapidly [...] If teachers are technophobic, they should share their worries with other teachers and seek advice from more experienced users, even from experienced students who are willing to help. If possible, they should observe other teachers using CALL or try team-teaching’. (Ministry of Education and Culture, 2000, p. 20).

The introduction of CALL in the LR seems to have put teachers of English in Cyprus “in a troubling situation” (Mckay, 2000), as neither their views nor their attitudes or feelings were taken into consideration. This reminds us of Freeman and Johnson (1998 cited in Troudi, 2005, p. 2), who point out that ironically, although it is in their classrooms that researchers learn about what teaching and learning involves, language teachers have for a long time been left out of the debate on teacher education. One might argue, though, that sometimes the most practical and viable way for the Ministry of Education to introduce change would be to impose changes on teachers without first asking for their consent, as this may never be granted by some teachers, or indeed sometimes the teachers themselves may not be interested in being involved. However, it is important for change agents to understand the receivers’ (teachers’) viewpoint in regards to innovation, as this will increase the possibilities of implementing it. Lee (2000) notes that there is a natural tendency for organisations to be resistant. Therefore, it would appear that despite the fact that the need for change may be obvious, rationality alone is probably insufficient in bringing about the expected outcome.

Previous research has revealed the influential role of teachers’ beliefs in determining their professional behavior (Veen, 1993; Wolzey et al., 2006; Teo, 2007; Teo, 2010). Thus, it makes sense to consider the beliefs that teachers hold about using technology in teaching, which may interact with their professional development, may determine their approach to teaching, and may lead to resistance to change in general and computer technology in particular. CALL appears to be a complex process, which seems to have led earlier researchers, including, Ertmer (1999), Becker, (2000), Pelgrum, (2001), and Meskill, (2006), to conduct studies to identify additional factors
that exert an influence on technology use. Given this complexity, the purpose of the study is set out below.

1.2 Purpose of the Study

In this study I explore CALL and IT use for EFL teachers’ in secondary education in Cyprus, EFL teachers’ beliefs about using CALL and IT and the factors affecting teachers’ CALL use in EFL classrooms in secondary schools in Cyprus. Therefore the questions this research sought to answer were:

1) What is the nature of the use of CALL for English language teachers in secondary schools in Cyprus?
   a) What is the environment for CALL in EFL classrooms?
   b) What is the support for CALL in EFL classrooms?
   c) What types of training are provided for EFL teachers?
   d) How is CALL used in EFL classrooms?

2) What are EFL teachers’ beliefs about using technology in teaching?

3) What factors influence CALL use in EFL classrooms in secondary schools in Cyprus?
   a) To what extent do extrinsic factors influence CALL use in secondary schools?
   b) To what extent do intrinsic factors influence CALL use in secondary schools?

1.2.1 Definition of CALL in the present study

CALL has been used in second language teaching and learning since the 1960s, but as Chappelle (2003) notes, until 2000, computer technology was used in a rather superficial manner, with activities focusing mainly on the interaction between the learner and a computer programme. This was the “pre-network CALL” (CALL that does not
require networking) and cannot be considered to be the same as NBLT (network-based language teaching) which usually focuses on human to human communication, collaboration and creativity (Chappelle, 2000). Even if computers have a role to play in all approaches to CALL, it does not necessarily follow that all approaches are the same. Yet as Patrikis (1997 cited in Chappelle, 2000, p. 204) notes, approaches to CALL coexist, rather than being linear. Thus, many of the issues that appeared in earlier CALL generations, including the need to evaluate the effectiveness of CALL in second language acquisition and the role of the teacher, are still with us today.

Recently, however, CALL has focused on interactive learning and individualized learning, taking into consideration principles of language pedagogy and methodology which derive primarily from constructivist theories. This expands the scope of CALL activities to suggest new roles for both teacher and learner, but it does not in any way conceptualize CALL as a method of instruction. It is within this current philosophy that CALL in my study can be defined. In other words, CALL in my study will refer to computer-related technologies rather than to traditional CALL or simply to “canonical desktop and laptop devices we label computers” (Hubbard, 2009), and the focus will be on how technology is used, rather than on technology itself. Therefore, the concept of CALL in my study will include terms such as NBLT (network-based language teaching), which as Chappelle (2000) argues, is associated with CALL and appears to have contributed to its evolution.

Within the context of this paper, the two terms, CALL and IT, will be used interchangeably with technology, computers, computer technology, ICT and new technologies. CALL and IT will imply all kinds of computer related materials, such as computer software and the Internet.

1.3 Significance of the study

During the evolution of Computer-Assisted Language learning (CALL) in the last 30 years, particularly since the development of the Internet and its potential for effective teaching and learning, investments have been made across the world that aim at
integrating this innovative technological tool with a view to improve the quality of teaching and learning. The literature, particularly in the last decade, abounds in studies investigating issues around CALL. Initially, studies explored CALL in terms of the number of computers, software and hardware and the frequency with which computers were used, and later the factors that affect CALL use while more recent studies tend to focus on how computers are used.

However, this considerable body of literature indicates that there have been many unsuccessful attempts to integrate technology, and to date, effective technology use is rather limited (Lee, 2000; Smerdon et al., 2000; Cuban et al., 2001; Hubbard, 2003; Bauer and Kenton, 2005). Despite the amount of relevant literature, we have “only the beginnings of definitive answers as to how to use computers most effectively to support language learning” (Hubbard, 2009, p. 1). Similarly, Ertmer and Ottenbreit-Leftwich (2010) note, that although there have been increases in technology access and technology training, technology is not being used to support the kinds of instruction that are believed to be most powerful. It appears that because CALL is a complex process involving so many different components, there are still many unanswered questions as to why it does not occur.

There seems to be consensus among researchers, though, that the success of technology in an educational context depends primarily on the teacher. Indeed, the relevant literature highlights the importance of the teacher’s role in designing teaching and learning activities in their classroom. (Balanskat et al., (2006), the importance of teachers’ attitudes towards technology (Teo, 2010), the need for providing teachers with the required knowledge (Hughes, 2005; Hubbard and Levy, 2006) as well as with the required training and skills (Hampel and Stickler, 2005; Reinders, 2009) to enable them to achieve effective use of technology. It may also be seen that although successful ICT use depends primarily on the capacity of the teacher to exploit it efficiently for pedagogical purposes, there are factors, sometimes beyond teachers’ control, that influence ICT uptake. It should also be borne in mind that every environment is different, and certain factors may be unique to a specific context.
In Cyprus, although an evaluation of the LR claims that the LR is the “most successful innovation in education in the Cyprus Educational System regarding the teaching and learning of languages,” (Ministry of Education and Culture, 2005, p. 36) no research so far has been conducted to provide an in-depth look at CALL and IT use in the EFL classroom or explore the factors influencing computer use. This information is critical in ensuring that technology integration achieves its maximum level of effectiveness and impact. By shedding light on teachers’ use (or lack thereof) of technology and the factors that influence it, the present study would provide the Ministry of Education and Culture (decision makers, inspectors of English, teacher educators), with a picture of the current situation in Cyprus and important insights into what EFL teachers need, to be able to integrate technology into their practices. As a result, the information gained from this study could also enable professional development evaluators and staff developers to design useful and worthwhile programmes for teachers and ultimately improve student learning.

As CALL researchers, developers and practitioners have a critical role to play in helping the overall field of second language learning come to grips with this domain, as Hubbard, (2009, p1) contends, the present study is significant as it will add to the existing literature and extend the important debates in the field particularly CALL in the EFL classroom. Although literature abounds with studies investigating if and how computers are used in language teaching and learning, and the difficulties of integrating ICT into the classroom, much of this research involves settings other than EFL, such as L2 (e.g. Lam, 2000), ESOL (English for speakers of other languages (eg. Meskill, 2006), and MFL (modern foreign languages) (e.g. Pachler and Field, 2001) to name a few. Thus, there seems to be a need for additional research to identify the key issues around EFL teaching classes. By gaining an understanding of EFL teachers’ CALL use and their attitudes towards CALL from secondary education in Cyprus, as well as insights into the factors affecting technology use from the teacher’s perspective, the present study might thus contribute to the field of study, given that the understanding arrived at might well be relevant to other EFL contexts.
1.4 My Teaching Context

In this section of the chapter I now outline the Public Secondary Educational system in Cyprus in relation to English language teaching and learning. The issues around it which will be presented include how Secondary English language teachers qualify and get appointed, standards in EFL, the textbooks used, language teacher education (the available training for EFL teachers), and the availability of computers.

1.4.1 State Secondary Educational system in Cyprus

State secondary general education is offered to pupils between the ages of 12-18 through two three-year levels, the Gymnasium (Lower Secondary) and the Lyceum (Upper Secondary). The curriculum includes both core subjects and optional subjects.

*The Gymnasium (Lower Secondary)*

The gymnasium offers full-time compulsory education to pupils 12 to 15 years of age. In the gymnasium there are no optional subjects and English is taught for 3 periods a week in the first and second year, and 3.5 in the third year. The aims and objectives of the gymnasium include the provision to students with the knowledge, skills and attitudes that will help them understand their own language and culture and to communicate in various situations with people who are linguistically and culturally different (Ministry of Education and Culture, 2000).

*The Lyceum (Upper Secondary)*

The Lyceum (Upper secondary) offers a three-year education programme for pupils aged between 15 and 18. It offers common core subjects which are compulsory for all pupils, and optional subjects. In the first year, English is compulsory and is taught for 3 periods a week while in the second and third years it is optional and can be chosen out of seven languages to be taught for either two periods or six periods a week. (Ministry of Education and Culture, 2008 p. 305) It is worth pointing out that the by far the greater majority of students choose 2 periods, while only a small percentage opt for the 6 period option.
1.4.2 Getting appointed as a secondary EFL teacher in Cyprus

The minimum prerequisite for being appointed as a secondary teacher is a university degree in the subject and the appointment is made by the Educational Service Commission (ESC), an independent body nominated by the President of the Republic. The ESC assesses the documents submitted by teachers, and the teachers' names are put on a waiting list with a number of points awarded according to their qualifications, date of graduation and previous teaching experience. It should be noted that the graduation date carries greater weight than the rest of the criteria. The waiting period can be many years in duration. In 2008, for example, there were 1370 applicants on the list for English against an average of 18.6 permanent appointments per year. Teachers on the waiting list may teach in the private sector or may join other occupations in the meantime. As a result, teachers joining the public sector may have had no experience of it, or indeed may have had experience of teaching elsewhere, since completing their studies perhaps many years before. Once the candidate is appointed, they have to attend a one-year-pre-service programme run by the Pedagogical Institute.

1.4.3 EFL Standards

While English operates as a lingua franca among people of a non-Greek-speaking background, there seems to be concern among parents and educators that standards in foreign languages in public secondary education are not sufficiently high. Indeed, there seems to be a gap in English language standards between the curriculum and the university entrance examinations (Pancyprian examinations). This mismatch between the school leaving certificate (apolytirion) and the university entrance examinations is a source of considerable anxiety for parents and students. Many parents wish to provide their children with a competitive edge, and this results in increased pressure to invest in supplementary private tuition (frontisteria) (Experts' report Cyprus, 2004).

It is noteworthy that this low language proficiency is attributed to a number of possible factors, including limited curricular time and the quality of teaching (Experts’ report Cyprus, 2004, p. 13). However, students’ views seem to be different from those of adults as they do not consider that by increasing the number of periods of English a week will raise the standards but rather they tend to believe that teachers need to
improve their practices by adopting more effective methods (ibid). This brings in the issue of CALL and IT which although as Lock (2002) notes, is not a methodology in itself, it could positively affect English language teaching and learning. Indeed, inspectors emphasize that language teachers cannot afford to teach ‘in the Dark Ages’ (Ministry of Education and Culture, 2000, p. 13) and that it is only when teachers see the computer and IT in general as an integral part of teaching that they will appreciate the power of IT in learning and its true place in the classroom as a tool for pupil development.

1.4.4 Textbooks

Textbooks developed for use in other countries (notably the United Kingdom) are heavily used which is understandable from an economic point of view, since economies of scale do not favour national production of textbooks in Cyprus. However, these publications from abroad do not correspond fully to national programmes of study and to the pedagogical goals prioritized by the Ministry of education and Culture, although there is a valuable liaison with publishers about this matter. A further issue pertaining to textbook use is that different syllabuses appear to be in operation in different books (skills based, grammar based, function based or topic based). This is probably the result of using textbooks which are not written by the same group of authors.

1.4.5 Teacher Education

Pre-service training

Pre-service training lasting one academic year is provided to teachers of English (like all other teachers in secondary education) by the Pedagogical Institute and shows a balance between work in the classroom (two to three days) under the supervision and guidance of the teacher trainers and coursework at the Pedagogical Institute.

In-service training

Optional in-service training for serving teachers is provided by the Pedagogical Institute, while both optional and compulsory in-service training is provided by the Inspectorate.
Compulsory EFL training consists of two - two-hour seminars, one of which is conducted in September and the other in February. It is of note that since the introduction of CALL in secondary education which occurred with the introduction of the LR in 2000, none of those seminars involved technology integration. What should also be pointed out, is that each of these seminars is attended by about 100 teachers, and in most cases it is in the form of a lecture or a power point presentation. Optional training whether organized by the Pedagogical Institute or the inspectorate, is only intended for a small number of teachers if it takes place during the school day. The content can cover any aspect of language teaching and learning and the criteria for selection is hardly ever transparent, which may often cause frustration among teachers who have shown interest in attending but have been rejected without being given any (convincing) explanation.

Since the year 2000 when CALL was first introduced only one (optional) in-service ICT seminar was organized which was specially designed for the EFL classroom and involved an IT specialist. The first part of this course was conducted in June, 2008 and the second in June, 2009 and each part of the course lasted four days. There were 35 participants out of the 570 EFL teachers employed in state secondary education in Cyprus (Ministry of Education and Culture, 2010, p. 306).

1.4.6 Availability of computers in the EFL classroom/The Language Room

Computers are used in all Lyceums (upper secondary schools) as a teaching tool in courses such as Typing, Physics, History and Languages …One to twenty PCs have been placed in the Typing and Technology classes of every Lyceum in Cyprus. Additionally, one to six computers have been placed in rooms such as History and Languages” (italics mine) (Annual report, 2010, p. 338).

The availability of facilities and tools in Cypriot public schools may be an indication of how seriously a school subject is taken in national educational policy. It should be noted that the LR is to be shared by all modern languages namely, Greek, English, French, Russian, Spanish, Italian and German (Ministry of Education and Culture (2005).
It seems that although English acts as a lingua franca in Cyprus, it is not given as much importance as other subjects. Naturally, as long as English is not taken seriously by the Ministry of Education and Culture, teachers and students are likely not to take it seriously either, an argument presented in the Experts’ Report (2004).

It should be emphasized, however, that in each school with a LR, a teacher (not necessarily a teacher of English) is appointed by the Ministry every year to be in charge of the LR. Among other duties, the role of the teacher in charge involves the following:

- preparing a detailed list of available materials for the use of every teacher;
- ensuring that all colleagues are informed about and can use the equipment to the best effect;
- ensuring that materials/resources are provided, produced and updated
- keeping a record of the use of equipment;
- evaluating the overall work done and submit a report to the head of the school and the Ministry at the end of the academic year.

The criteria (skills, experience, knowledge) considered for the appointment of a teacher to be in charge of the LR are unknown, however, as the selection procedure does not seem to be sufficiently transparent.

1.5 Thesis Overview

This thesis consists of 6 chapters:

Chapter 2 reviews the literature in three main areas: CALL, teachers’ beliefs about CALL use and factors affecting computer technology integration. It discusses previously published relevant work from these areas and draws on the research from mainstream as well as EFL education.

Chapter 3 describes the set of fundamental beliefs I drew upon in terms of research methodology explaining the rationale, namely the epistemological and ontological assumptions underlying my decision to employ a qualitative approach. After describing
my research methodology, I go on to explain the types of data collection methods used, as well as describing the participants and the selection procedure. Finally, the chapter considers data-analysis and interpretation, including validity issues and triangulation, as well as limitations and ethics.

Chapter 4 reports on the findings drawn from quantitative and qualitative methods I used to answer my research questions. In other words, it shows that by conducting a questionnaire, I was provided with a general picture of the situation in Cyprus concerning CALL use among teachers of English in state secondary education, while a deeper understanding was obtained from interviews and classroom observation.

Chapter 5 presents a discussion and interpretation of the results in relation to the literature in chapter 2. In this chapter I identify problems concerning CALL and IT use for EFL teachers in public secondary schools as well as possible causes of such problems.

Chapter 6 presents the future implications, contributions/suggestions for future research and strengths and limitations of the study.
Chapter 2 - Literature Review

2.1 Introduction

This study investigates English language teachers’ CALL use in secondary schools in Cyprus, EFL teachers’ beliefs about using technology in teaching, as well as the factors that influence EFL teachers’ CALL use. This chapter brings together three main areas: CALL, teachers’ beliefs about CALL use and factors affecting computer technology integration. The literature review will discuss previously published relevant work from these areas and will draw on research from mainstream as well as EFL education.

2.2 The history of CALL

Since the early 1960s, language teaching has undergone dramatic changes in the context of which one of the most significant areas of innovation in language education – computer assisted language learning (CALL) – has developed (Kern and Warschauer, 2000; Lee, 2000; Hampel and Stickler, 2005). This forty-year period may be divided into three main stages: behaviorist CALL, communicative CALL and integrative CALL each of which corresponds to a certain level of technology and certain pedagogical theories without necessarily rejecting the programmes and methods of the previous phase (Warshauer, 1996; Lee, 2000). The behavioristic CALL was based on drill and practice courseware as the rationale behind it was that repeated exposure to the same material was beneficial or even essential to learning. The second phase of CALL, communicative CALL, allowed for more authentic communication, providing students with a fair amount of choice, control and interaction. Before long, however, a number of educators seeking ways of teaching in a more integrative manner, came up with integrative CALL, which was facilitated by advances in computer technology, namely multimedia. Yet despite the advantages of multimedia for language learning, several problems arose, as teachers lacked the training or the time to develop their own multimedia programmes leaving the field to commercial developers, who often failed to take into account pedagogical principles. Soon, however, technological breakthrough - electronic communication and the Internet - enabled the computer to serve as a medium of local and global
communication and a source of authentic materials giving both students and teachers a new role. Teachers are now facilitators of the learning process rather than transmitters of knowledge, allowing learner control, autonomy and self-direction in language learning (Warshauer and Healey, 1998). This new role of the teacher can create a powerful environment which focuses on active and cooperative learning, and where the curriculum is tailored to meet the needs and capabilities of individual students (Smeets, 2006). This suggests a shift towards a more constructivist approach to teaching and learning, where new roles coexist with, support and encourage new student roles.

2.3 What is CALL?

There does not seem to be consensus to the definition of CALL, as the rapid pace of development in computing has meant that any ideas about what exactly CALL is are often quickly out of date (Lock, 2002). The different definitions of CALL, for example by Levy (1997, p. 1 cited in Warshauer, 2006, p. 184), who claims that it is “the search for and study of applications of the computer in language teaching and learning”, or by Egbert (2005, p. 4), who sees it as “learners learning language in any context with, through, and around computer technologies” indicate important changes in perspective. The current philosophy of CALL emphasizes student-centredness, which encourages interactive and individualized learning (Egbert et al., 2007). This continual evolution of CALL, which has extended to the use of blogs, wikis and other web 2.0 applications (Kessler, 2009; Davies et al., 2010) has meant that it is difficult to come up with a definition to bridge any controversies. However, there seems to be consensus that CALL is not a methodology in itself, but rather a tool for second language teaching and learning (Paramskas, 1999; Lam, 2000; Warschauer, 2005). It may thus be the case that comparing and contrasting CALL with other ELT methodologies will be useful, as it will help us see not only how CALL is different, but what the similarities are. The most important aspect of CALL is still language learning and language teaching, as McKenzie (2001) and Lock (2002) remind us. In other words, whatever methodology or approach one subscribes to, it applies equally to teaching CALL, as the focus on second language acquisition (SLA) in CALL is the same today as it was in
the beginning of the field. Despite these similarities, however, teachers appear to have a problem with the concept of CALL because there are some significant differences between a regular class and a CALL class. These include the need for technical knowledge, lack of homogeneity of learner abilities, the potential for distraction and the very presence of computers, which may scare some teachers (Lock, 2002). In fact, Hampel and Stickler (2005) note that the rapidly changing environment, especially online language teaching and learning, imposes new demands on teachers while it is difficult to know exactly what to include in terms of training. In similar vein, as Reinders (2009) explains, the use of technology requires both pedagogical as well as extensive technical skills on the part of the teacher. This suggests that conducting a successful CALL class is a challenge for teachers, as it requires skills and abilities that are not traditionally part of the teacher’s role, and shows that technology use is a complex process. An additional aspect of this complexity is the new role of students, which requires skills that students may not have. The responsibility for teachers to provide their students with this training can be quite challenging.

A major characteristic of a CALL environment in EFL classrooms is the creation of opportunities for learners for effective and efficient language learning (Barson et al. cited in Debski, 2000; Egbert and Yang, 2004; Egbert et., al, 2007). Such opportunities, they argue, are created when language learning principles are used as a framework for technology application in the classroom and they go on to present the following eight conditions that are based on such principles:

1. Learners have opportunities to interact socially and negotiate meaning.
2. Learners interact in the target language with an authentic audience.
3. Learners are involved in authentic tasks.
4. Learners are exposed to and encouraged to produce varied and creative language.
5. Learners have enough time and feedback.
6. Learners are guided to attend mindfully to the learning process
7. Learners work in an atmosphere with an ideal stress/anxiety level.

8. Learner autonomy is supported.

It should be noted that each element of optimal language learning classroom in some way affects, and is affected by the others. For example, more feedback and less stress may cause excitement for learning, while authentic tasks may increase motivation and peer interaction. I would agree with Egbert and Yang that teachers cannot possibly incorporate “every condition for every student in every lesson” (ibid, p. 285) but it is important that they develop tasks that present each and every learner with a variety of opportunities. In similar vein, Newman (2000) notes that technology is a means to an end, stating that IT cannot produce learning if the instructional environment fails to provide opportunities for genuine problem solving, decision making and authentic communication.

To understand CALL better, we will also need to look at it from a sociocultural perspective, as Warshauer (2005), suggests. “Does a blind man’s sensory mechanism end at the end of his hand, at the end of his stick or somewhere in between?” is a thought-provoking question posed by Bateson (1972, cited in Warshauer, 2005, p. 41) that makes us think about the relationship between tools and human action, which lies at the heart of sociocultural theory. A common saying among CALL advocates is that the computer should not be viewed as an end in itself, but rather as just another tool to promote learning (Warshauer, 2005) which suggests that what is important to know is not simply the tool (CALL) or those who use it, but rather what they can do when using it (McKenzie, 2001); how, in other words, CALL can transform human activity and behaviour. The challenge, Warshauer (2005) points out, should not be so much on powerpointing, spreadsheeting or word processing, but on how it can make a difference in teaching and learning on a daily basis. He argues, that understanding CALL involves considering the broader social, cultural and economic contexts in which it occurs. Educational reforms, including computer technology integration, have been set out by governments in many countries, but implementation priorities may differ
from country to country as technology integration may involve among others, changes in the curriculum and technological infrastructure. This is important, as the significance that society places on technology affects how teachers and students view technology and what their attitudes toward technology use are.

2.4 Why use CALL?

The literature abounds in research as to why computer technology should be used in language teaching and learning (Meskill and Anthony, 2005; Thorne and Payne, 2005; Ertmer and Ottenbreit-Leftwich, 2010). In the past decade, computer technology has not only changed the nature of resources, communication and information but it has also transformed the way we live, work and learn (Mcgrail, 2005; Acikalin, 2009). As a response to these societal transformations, technology advocates have brought computer technology into classrooms, seeing it as a catalyst for change that can contribute significantly to motivation, will encourage information processing and problem solving, as well as student-centered learning, critical thinking and creativity (Warshauer and Healey, 1998; Jonassen et al., 1998 cited in Becker and Ravitz, 1999; Lee, 2000; Mcgrail, 2005; Egbert et al., 2007; Chen, 2008). The World Wide Web, they argue, makes it possible for students to learn by doing things themselves and as the way information is presented is not linear, users develop thinking skills and choose what to explore. CALL programmes provide multimedia with video, sound, graphics, and text which allow learners to be exposed to the target language and culture (Chen, 2008). Also, the World Wide Web offers a vast array of resources for both teachers and students to search and access authentic materials (ibid).

The computer can play multiple roles in education, particularly language teaching (Warschauer, 1996; Kern and Warschauer, 2000; Beaty, 2003; Egbert and Hanson-Smith, 2007; Warschauer, 2010). According to Lee (2000), research and practice suggest that, appropriately implemented, network-based technology can contribute significantly to motivation, enhance student achievement, and lead to greater interaction and individualization. In addition, highlighting the potential of technology-
enhanced education many researchers including Egbert et al., (2007) and Warschauer, 2010, explain how foreign language instruction can benefit from web tools such as wikis, blogs and Skype. Thus, incorporating information technology in ELT could provide students with experience that would otherwise not be available to them. Indeed, the recreation of the Project-oriented CALL (ProCALL) innovation at the University of Melbourne showed that students appreciated projects that were meaningful and not available in traditional classrooms (Debski, 2000). Likewise, Zhong and Shen (2002), argue that effective integration of computers will not happen unless classroom instruction allows more interaction, encourages learner autonomy and provides students with tasks which will help them develop higher order skills. Otherwise, they add, by delivering a “prepacked information kit through an electronic blackboard and digital exercise books we will witness the emergence of a technologised traditional classroom (Zhong and Shen 2002, p. 46).

Nonetheless, technology should not be a panacea. McCarthy (1999), advises us to use computers for what they are good at, and avoid using them when something else will do the job better and/or more simply, while McKenzie (2001) reminds us that learning is the goal whereas technologies are mere delivery systems. Recent government policies in education, as Newman (2000), notes, give the impression that people believe that information technology will cure all of education’s ills claiming that it facilitates the development of communication, decision-making and problem solving abilities. However, she adds that information technology cannot do much of the above unless the classroom environment allows for that. In other words, if the classroom environment fails to provide opportunities for communication, decision making and genuine problem solving to occur, information technology cannot produce noteworthy outcomes. Consequently, what matters ultimately is the experience that learners have and what they make of that experience. Egbert and Yang (2004, p. 289) note, that “although in some cases we would recommend against its use, we often use it because we are required to, because students like it, or because it can support tasks more efficiently or effectively than we can”. It appears, though, that even if improvement in student performance has not been confirmed, technology will form the future direction of education, as computers are here to stay. Hence, there will be a
strong need to explore this pathway to education. It is important, however, that teachers do not use technology simply because of its availability, but because it will contribute to the lesson plan and the language learning. Thus, it is important that a distinction be made between the impact of CALL on foreign language learning and how effective it is as a way of teaching a foreign language. Availability of and easy access to facilities, for example, or changes in teachers’ and learners’ roles may not in themselves constitute evidence of the effectiveness of CALL.

2.4.1 Computers as facilitators of constructivist practice

The importance of student-centred and student-active learning which is often called constructivism, is highlighted by current educational reform movements (National Council of teachers of English, 2000). Research indicates that there is a connection between teachers’ constructivist or student-centred beliefs about instruction and their use of technology, suggesting that teachers who readily integrate technology into their instruction are more likely to maintain student-centred classrooms where computer technology is a powerful tool. Although constructivist-compatible teaching can be implemented by various approaches, existing research emphasizes the potential of computer use to increase constructivist practices on the part of the teachers which may even lead to pedagogical change (Becker and Ravitz, 1999; Egbert and Yang, 2004; Bellefeuille, 2006). Becker and Ravitz (1999) add, though, that a number of conditions are required for constructivist-oriented practices to be implemented, including a local culture favorable to constructivist innovation as well as sufficient resources and support. Similarly, Zhong and Shen (2002), argue that effective integration of computers into English language teaching cannot occur unless there is a change in how learning and teaching are viewed by all stakeholders and the role of the teacher and the student are redefined. Indeed, the Second Information Technology in Education Study (SITES) provided evidence that the use of ICT in the classroom has an effect on the pedagogical methods employed by teachers (Pelgrum, 2008). This may suggest that teachers who use technology in their classes may find themselves in
a virtuous circle, as the more use they make of technology the more likely it is for them to shift to more learner-centred approaches.

In contrast, Cuban (2000, cited in Becker, 2000) and Zhao and Frank (2003) argue that computers have many disadvantages - hard to use and often break down - which render them largely incompatible with the requirements of teaching; therefore it is not worthwhile, they add, either for students or teachers to invest effort in using them. The fact that technology is constantly changing is, I think, one disadvantage in terms of teacher use, as it is very difficult for teachers to keep up to date with the latest technology and this may cause them to feel incompetent and not knowledgeable enough. These controversies over the value of computers in education may also, to a certain extent, be responsible for the low and ineffective use by teachers. It is my feeling, though, that there is no way back and even if computers are too hard to master for many teachers, or not always reliable, the effort to use them as an instructional tool in language teaching would be worthwhile provided, of course, they are used to improve the nature of school learning since learning is the ultimate goal.

2.5 CALL use by teachers

Although the potential of the Internet for educational use has not been fully explored, the number of teachers using CALL is increasing (Pennington, 1999; Lee, 2000; Warner, 2004 cited in Chen, 2008;) as the Internet is becoming more and more popular in language teaching and culture (Kramsch et al., 2000; Thorne, 2003 cited in Chen, 2008). However, as with other innovations, it is not surprising that while many language teachers are enthusiastic about computer technology others remain skeptical of its use (Warschauer and Kern, 2000). It seems that the way in which we choose to use various technological tools seems to be based on what we believe about learning (Newman, 2000), which suggests that the way computers are used indicate a teacher’s underlying philosophy.

The two main approaches prevailing among teachers in relation to beliefs about teaching and learning are behaviourism and constructivism. In spite of the fact that
teachers may adopt both behaviourist and constructivist principles, one approach always dominates; thus behaviourist oriented teachers tend to be more concerned about “covering the curriculum” while constructivist oriented teachers seem to be more interested in “integrating the curriculum” (Collinson, 1996). In other words, most computer-engaged teachers appear to be more constructivist-oriented than teachers who believe in a more traditional-oriented approach and make limited use of technology (Becker, 2000; Ravitz et al., 2000; McKenzie, 2001). However, much of this research relies on surveys which are not always considered effective measures of technology integration (Willis et al., 1999) as teachers may report to hold student-centred views while observation shows inconsistent practices. In fact, there seems to be a mismatch between research and practice which may be attributable to the fact that technology use does not have the same effect universally but affects and is affected by its historical, social and cultural contexts (Light, 2001, p. 711 cited in Meskill, 2006, p. 448). It may also be argued that even if a teacher is constructivist-oriented, they may not be able to use computers in ways that are compatible with their beliefs because effective use of CALL involves both pedagogical and technical skills which teachers may lack.

The way in which technology is used in classrooms has been examined by numerous studies (Smerdon et al., 2000) but these earlier studies were mainly quantitative in nature. It would also be useful to point out that classroom observations of technology integration are missing from these studies and data relied mainly on self-reported practices. These studies focused on the number of computers available (and have reported that the availability has grown substantially) and on how much time was spent on computer activities rather than on the manner in which the technology was used (Ertmer, 1999; Hubbard, 2009). Interestingly, as Smerdon et al., (2000) point out, although the availability of technology has grown, the manner of how teachers teach has not dramatically changed, revealing that only half of the public school teachers who had computers or the Internet available in their schools used them for classroom instruction. Indeed, according to Cuban (2001), despite the availability, less than 5% of teachers integrate technology into the regular routines of their classrooms.
More recent research has also shown that if and when technology is used, it is not used to support student-centred instruction which is believed to be most effective (Bauer and Kenton, 2005; Smeets, 2005; Hubbard, 2009). Word processing seems to be the most often used software reported by teachers (Becker, 2000; Meskill, 2006). Classroom visitors, though, according to Judson (2006), often see technology integrated in a variety of ways. As a result, he adds, it is commonplace to discover teachers using technology for a variety of purposes, including record-keeping, accessing lesson plans, creating study guides and communicating with parents. Some teachers maintain tight control and use technology only for presentation purposes, while others with the same resources and access, allow students nearly full reign of technology decisions (ibid). It may be the case that that such varied pedagogical styles for technology integrated lessons exist because of teachers' beliefs about teaching and learning. Indeed, as Judson explains, a teacher who firmly believes the best way for students to learn content is through informative teacher-delivered lectures will give little consideration to the idea of using technology as a means for student exploration. Likewise, he adds, it appears logical that a teacher who firmly believes in exploratory learning is not going to be an advocate for drill and practice software. However, a change in teachers’ pedagogical beliefs may not guarantee high levels of effective use of CALL, as influential factors may overlap.

In acknowledging a continued low ratio of frequent technology users among classroom teachers, other researchers have focused on determining the confluence of factors prevalent among teachers who are frequent technology users (; Ravitz, et al., 2000; Becker, 2000; Becker & Ravitz, 2001). These studies have shown that teachers with greater technical knowledge, as well as those with five to eight computers in their classroom, were more likely to make frequent use of computers compared with teachers with access to computers limited to computer labs. Becker (2000) points out that there is a connection between the frequency of computer use in class and the number of computers available in a classroom. Interestingly, he argues that despite computer labs having large number of computers, teachers are less likely to provide
frequent opportunities for their students to use them than when they only have about one third of them-five computers-in their own classrooms. That is to say, that the likelihood of frequently using computers for language teaching in shared spaces is rather low. Ertmer and Ottenbreit-Leftwich (2010), on the other hand, argue that the extent to which classroom integration is achieved cannot possibly be determined by the number of computers available or the length of time they are used, but rather by the extent to which the classroom environment has facilitated teaching and learning. It is argued that while many EFL classrooms around the world still remain low-tech, using language learning principles as a framework for technology application can create opportunities in CALL classrooms (Egbert and Yang, 2004; Egbert et., al, 2007). However, it is evident, that to date, neither the amount nor the quality of technology use has reached its full potential.

It is noteworthy that IT integration in education has not been without its criticism. Without questioning the value of computer technology, more recent research argues that while the Internet has created a new situation in communication, we should be careful when making claims about enhancing language proficiency, as the language used in chat rooms for instance, has little connection with the language used in schools (Koutsogiannis and Mitsikopoulou (2004). Moreover, while learners can experience flow when working with technology which according to Egbert, (2005) is a state in which there is full involvement and enjoyment of the CALL activity, whether there are better language learning outcomes when learners are fully immersed in an activity remains to be seen in future research. Looking at computers in schools from a critical perspective, Cuban (2001) emphasizes that they seem to be oversold and underused, explaining that the billions of dollars already spent on wiring, hardware and software have yet to approach what has been promised in academic achievement, creative classroom integration of technologies and transformations in teaching and learning.

Admittedly, however, as Lee (2000) notes, even if the potential of computer technology for educational use has not been fully explored and most schools still make limited use
of computers, it is obvious that we have entered a new information age, in which links between technology and TEFL have already been established. It would appear that teachers cannot deny the existence of computers in schools, as by the time the average student has finished secondary school, students may have spent more time in front of a computer outside class than in class. Consequently, the question is not about using or not using computers, but about when and how to use them (Hubbard, 2009). It is no longer appropriate, as Ertmer and Ottenbreit-Leftwich (2010) claim, to suggest that teachers’ low-level uses of technology are adequate to meet the needs of the 21st century learner. To be able to meet the challenges of the fast-changing world, students will need to learn to do things which include seeking information, thinking critically or taking initiatives which are skills that are not usually developed in a traditional class. Teachers, in other words, will need to teach their students new skills and not simply teach them old skills better. As a result, the need to equip teachers with the required skills to teach with technology seems more important than ever.

2.6 Factors influencing CALL use

For a number of years researchers have attempted to identify the factors affecting computer in the classroom which has resulted in a long list of factors that exert an influence on technology use in schools (Zhao and Frank, 2003). Although the main contention is that the teacher is the major influential factor, it seems that even if teachers are eager to integrate technology into the curricula, efforts are often limited by both external (first-order) and internal (second-order) barriers (Ertmer, 1999; Bauer and Kenton, 2005). First-order barriers are extrinsic to teachers and are institution related, whereas second-order barriers are intrinsic, teacher related and found in teachers’ underlying beliefs about teaching and learning (Veen, 1993; Ertmer, 1999; Zhao and Frank, 2003). Research has shown that both extrinsic and intrinsic factors play a role in determining the extent to which teachers will use technology (Lam, 2000; Poynton, 2005) but second-order barriers, although not easily apparent even to the teachers themselves, are more personal and more deeply ingrained, and their strength can reduce or increase the effect of first order-barriers (Ertmer et al., 1999; Teo, 2010).
Clearly, the integration of ICT into school education is a complex process, and therefore, it is affected by many different factors (Balanskat et al., 2006). Thus, it is important to examine and understand how these factors interact with each other and with technology, as studying them in isolation may not give the full picture.

2.6.1 Extrinsic barriers

Ertmer (1999) explains, that lack of adequate resources (first-order barriers) can constrain any integration effort. If, in other words, teachers do not have sufficient equipment, time, training, or support, meaningful integration will be difficult, if not impossible, to achieve (Ertmer, 1999, p. 56). Extrinsic barriers include a lack of training and professional development (Tsitouridou & Vryzas, 2003 cited in Teo, 2010), a lack of access to facilities (Cox et al., 1999; Zammit, 1992, cited in Lam, 2000), availability (Pelgrum, 2001), technical and administrative support (Cox et al., 1999; Mcgrail, 2005) as well as size of classes (Egbert and Yang, 2004). Further reported impediments to technology use in classrooms include scheduling, pressure of curriculum coverage, faculty and staff reluctance with time and resources being reported as the chief barriers (Becker and Ravitz, 1999; Becker, 2000; McCarthy, 1999; Meskill, 2006). However, other studies have shown that effective technology integration is not happening, despite increases in computer access and technology training (Ertmer and Ottenbreit-Leftwich, 2010).

McCarthy (1999, p. 9) explains how the constraint of time poses as a significant factor in the effective use of CALL particularly as most teachers are “of the pre-computer generation” and “almost by definition not IT specialists” and need time to become acquainted with the medium. Cox et al., (1999) argue that time and support are the two most crucial factors in integrating computer technologies into a school’s curriculum while for Brand one of the greatest roadblocks is the lack of teacher training (1998, p. 13 cited in Brown, 1999). It seems to be the case that in any field of knowledge, learning opportunities are likely to be maximised if teachers have specialized knowledge in that
field. It is problematic, however, for teachers to gain specialist knowledge in the area of CALL if the time and duration of professional development provided do not allow teachers to “reflect on their current practices, understand the new knowledge and skills they have gained and incorporate them into their teaching” (Schaetzel et al., 2007). In a similar manner, if scheduling does not allow teachers to regularly use CALL, their anxiety will increase and they may never become confident enough to stop relying on other colleagues’ pre-prepared lessons and activities (Lock, 2002). Although there does not seem to be overall agreement as to which factors are the most significant, it seems that time is indeed one of the most significant obstacles for both teachers and students as lack of it was reported as a hindering factor for teachers to learn how to use computers while it also prevented students from using technology in class.

While Lee (2000) finds that the most significant aspects of computer integration in education are hardware and software, with the availability of high quality software being the most pressing challenge, much of the research done so far shows that the mere availability of computers cannot, on its own, achieve technology integration (Cuban, 1986; Ertmer, 1999; Means & Olson, 1997, p. 1 cited in Ertmer, 1999, p. 47; McKenzie, 2001; Egbert and Yang, 2004; Meskill et al., 2006). Indeed, McKenzie (2001) feels that investing money only in equipment and networking is like putting the horse before the cart while Meskill et al. (2006), have shown that despite increased access to technologies in public schools in New York neither the quantity nor the quality of use has increased. This may suggest, they claim, that teachers are in no apparent rush to use them; nor, as Cuban (2001) argues, are teachers in a rush to revolutionize their beliefs and practices as desired or expected by reform advocates. Similarly, Ertmer (1999) and Egbert and Yang (2004) explain how effective language teaching and learning can take place in limited technology contexts, which shows, I think, once again that it is not ‘new technologies that hold the key to human progress’ (Cole cited in Egbert and Yang, 2004, p. 281) but the teacher for the unique contribution she can make to the classroom environment by providing effective language learning experiences in CALL regardless of the technologies available. Indeed, classroom observation in a school “famous for its advanced school networks” as well as a second observation in a “well-resourced school’ described by Zwong and Shen (2002) shows
that the integration of computers into the language class did not bring about any pedagogical changes, and that the difficulty is more of a conceptual character than a technological one.

It seems that while teachers are often required to use CALL because of student expectations and school policy (Brown, 1999) or because ‘administrators push for it because they perceive technology as the ultimate goal’ Mcgrail (2004), they are not familiar or confident in its use, as professional preparation of teachers does not address teachers’ technical or pedagogical needs (Ertmer, 2000; Reinders, 2009). Lee (2000) agrees that there is a lack of technical and theoretical knowledge, and that even instructors make improper use of technologies. As a result, there is always some risk, when a new tool is available, to use it on the basis of novelty rather than for sound pedagogical reasons. In such contexts, the integration of technology can occur at a superficial level by changing only the physical appearance of the traditional English classroom and transforming it into a “technologized traditional classroom” (Zhong and Shen, 2002) or in McKenzie’s words, leading to “powerpointlessness” (2001).

2.6.2 Intrinsic factors

It seems that the importance of the teacher as a primary factor or catalyst in the provision of successful CALL or any other form of innovative teaching is generally accepted as critical (Brown, 1999; Hughes, 2005; Teo, 2010). It’s perceived usefulness and perceived ease of use, but mainly its compatibility with teachers’ beliefs, attitudes and experiences, will determine its likelihood of being used (Mcgrail, 2005; Teo, 2010). In fact, Sugar (2002) argues that even if first-order barriers are removed, teachers may still be reluctant to use technologies while Egbert and Yang (2004) explain that CALL activities can happen regardless of the technologies available. Research has shown that beliefs about teaching and learning (Veen, 1993; Chen, 2008;) attitude towards technology (Ertmer, 1999; Huang & Liaw, 2005 cited in Teo, 2010; Teo, 2010), social contexts, and reliance on routine practices (Mcgrail, 2005) determined teachers’ perceptions of and use of technology in their classrooms. In addition, a lack of confidence (Cox et al., 1999; Ertmer et al., 1999; Zammit, 1992, cited in Lam, 2000; Teo, 2007), a lack of motivation (Ertmer, 1999) and the feeling that technology use is a
top-down rather than a bottom-up innovation (Lam, 2000; Toll, 2001) are major intrinsic factors that can affect teachers’ use of CALL. In similar vein, Windschitl and Sahl (2002 cited in Mcgrail, 2005 p. 10), found that English teachers’ decisions about the use of technology in their classrooms were influenced by their beliefs about learners and learning activities, as well as by the degree of control over the classroom environment they wished to place in students’ or their own hands, depending on the individual teacher’s instructional philosophy.

While some research in teacher technology use has shown that teachers gain confidence and their attitudes towards the use of computer technologies improve through formal teacher education coursework (Lam, 2000) and through knowledge about computers (Mukti, 200 cited in Teo, 2010), other researchers including Egbert et al. (2002) argue that coursework seems to have little or no impact on teachers’ practices. In fact, what can cause teachers to accept a change is to see a gain for their students as well as for their own instructional practices (Mcgrail, 2005). Similarly, Teo (2010) notes, that much depends on the extent to which teachers believe it is easy to use as well as the extent to which they believe it will enhance their job performance. However, many teachers, Egbert et al. (ibid) add, may change their practices and beliefs when they are convinced of the potential of computers, but some will not, even if they are presented with evidence that technology enhances teaching, simply because they do not know how to make this happen in their classrooms. Thus, it makes sense that teachers are less likely to embrace technology use if they lack computer knowledge (Mukti, 2000 cited in Teo, 2010) or computer confidence (Yildirim, 2000; Teo, 2007). CALL seems to be about language literacy rather than computer literacy, which renders computer knowledge a side benefit. However, teachers may wish to acquire computer knowledge and skills before they develop pedagogical skills, as they may see skills happening one after the other rather than simultaneously.

Culture and context (Zwong and Shen, 2002; Debski, 2000; Anderson, 2004) have also been identified as two major factors that affect technology integration. Debski (2000) found, for example, that the local context affected the recreation of the Project-Oriented
CALL innovation at the University of Melbourne. The teachers joined the innovation mainly because they believed it would enhance their knowledge of computers, which seemed to be more effective than curricular and social incentives and the students were motivated because they appreciated learning situations that were personally meaningful and different from traditional classrooms. Zwong and Shen (2002) concluded that cultural difficulties deriving from the traditional educational system will need to be overcome before substantial changes occur.

As we have seen, the decision as to whether to use computers depends on two categories of factors: school-level factors and teacher-level factors. Moreover, the manner in which computers are used, may also depend on the same factors as factors tend to intersect.

2.7 Teachers’ beliefs

2.7.1 The Nature of Beliefs

Beliefs are difficult to define, and have been labelled as a “messy construct” (Pajares (1992, p. 2), “maxims” (Richards, 1996), “personal pedagogical systems” (Borg, 1998) ‘personal theories” (Borg, 1999), and “pedagogical principles” (Breen et al., 2001).

It is instructive to point out, however, that belief in this paper refers to a “proposition” (Borg, 2001, p. 186 cited in Borg, 2005) which whether held consciously or unconsciously, is always accepted as true by the individual, and is therefore “imbued with emotive commitment”, (ibid), serving further as a guide to thought and behaviour, before we look at the sources of teachers’ beliefs and how these underlie teachers’ classroom actions. Beliefs are formed early in life as a result of a person’s education and experience (Johnson, 1994) and it seems that the strongest beliefs about teaching and learning are well established by the time a student completes schooling. Indeed, as research shows, teachers’ beliefs build up over time and come from a variety of life experiences and sources including teachers’ personality, established practice but probably the most significant are their own experiences as language learners during their schooling (Richards and Lockhart, 1994; Borg, 2003; 2005; 2006). The extensive
experience that a teacher may have had as a learner was coined by Lortie as the “apprenticeship of observation” (Lortie, 1975, cited in Borg, 2005) and held largely responsible for the teacher trainee’s preconceptions. However, although Milton et al. (2000) may be right in arguing that teachers’ principles do not necessarily precede practice but can emerge in the classroom and can have a great impact on their daily practice, it is generally accepted now that it is important to understand language teaching from the view of the teacher because of these prior experiences, personal beliefs and goals that teachers bring to the act of teaching which guide their practical classroom actions and which cannot and should not be ignored (Freeman and Johnson, 1998; Borg, 2006).

The relationship between teachers’ beliefs and practices has been highlighted in several studies. There seems to be general consensus, though, that little attention has been given to teachers’ beliefs about technology and their experiences with it in their practices (Becker and Ravitz, 1999; Borg, 1999; Borg, 2003). Teachers’ beliefs affect not only their teaching, but also filter new input, suggesting significant implications for the implementation of educational innovations and teacher education programmes (Johnson, 1994; Richards and Lockhart, 1994; Borg, 2003; 2005; 2006; Farell, 2006; Watson, 2006). Likewise, Kennedy & Kennedy (1996 cited in Lam, 2000, p. 391), note that the likelihood of an innovation being used is affected by its compatibility with the teacher’s beliefs and attitudes but also point out that the teaching context has a role to play. It would appear that teachers’ beliefs about CALL are not an exception to this. Indeed, the study carried out by Warschauer (2005) investigating computer-based language learning in diverse contexts, revealed that teachers used the new technology to better put into practice their individual beliefs about language teaching and learning.

In essence, teachers’ beliefs tend to sieve information presented to them and then this filtered information is used to confirm and support, rather than confront or challenge their pre-existing conceptions. Thus, teachers’ use of computers cannot be fully understood without considering their educational beliefs. Cuban (2001), though, has argued that the way teachers’ use of technology is not always determined by their beliefs but is affected by other contextual and organizational factors. Although Cuban
may be right, the question of teachers’ attitude to computers, according to Teo (2010), is central to any successful use of computers in education. Indeed, contextual and organizational factors may interact with each other and have an impact on teachers’ attitude to computer use. In other words, teachers’ attitudes towards implementing technology in their classes may, on the one hand, shape the manner in which they use it but these attitudes and beliefs are not inflexible but can be influenced by the specific institutional context.

2.8 Language Teacher Education

Given the above assumptions that teachers’ beliefs play a central role in the process of teacher development and the contention that teachers’ beliefs are inflexible and resistant to change (Almarza, 1996; Johnson, 1994), it is necessary to look at whether teacher development and training programmes are effective in changing or influencing teachers’ approach to teaching. Although the terms teacher training and teacher development are frequently used interchangeably, there is a distinction to be drawn between them, which, at this stage, I would like to point out. While teacher training is managed by others, teacher development is done only by and for oneself (Edge cited in Wallace, 1991, p. 3) and implies change and growth. Teacher training expects teachers to acquire predetermined skills, and as it is often a one-time event, these externally observable changes are unlikely to last longer than the training itself. Research indicates that the duration of professional development has an impact on outcomes and that one-day workshops with little or no follow-up do not have lasting effect on teaching practices (Richards & Farrell, 2005). Teacher development aims to cause teachers to become reflective practitioners which will lead to changes in teachers’ beliefs and practices; this, however, cannot happen overnight but is rather career-lasting learning (Freeman & Johnson, 1998; Richards & Farrell, 2005). As a result, teacher educators today have started to see teacher learning more as a process rather than a product of training (Crandall, 2000) and as Wallace (1991) argues, the knowledge provided by the training-oriented approach is not the kind of knowledge teachers need to be able to cope in their specific contexts. In contrast, teacher development “the lifeblood of
teaching” (Warschauer et al., 2000, p. 11) is about making our teaching more responsive to the needs of the recipients by allowing more trainee participation (Bax, 1995, p. 347). This means that professional development needs to be relevant to teachers’ experiences and to build on those experiences in active learning opportunities. However, as Richards and Farrell (2005) argue, despite the fact that teacher training is focused on the teacher’s present responsibilities and short-term goals whereas teacher development addresses the teachers’ long-term goals and “seeks to facilitate growth of teachers understanding of teaching and of themselves as teachers” (p.4), professional development for teachers of language learners needs to focus on both teacher training and teacher development.

Previous research has indicated that English language teachers lack professional training on how to integrate technology into their classroom practices (McGrail, 2005) as traditional-training programmes do not help teachers acquire the skills needed to make meaningful use of technology (Ertmer, 1999). It seems that although CALL implementation and awareness have become recognized attributes for language teachers, little has been done to determine how these needs are addressed in teacher training programmes (Kessler, 2005; Kessler, 2006). While instructors who have had formal training in anticipation of public school careers are likely to have experienced similar training established by colleges of education, this is not the case for CALL professionals (Carrier, 2003). It is difficult to find many language instructors who have received the same extent and type of training in language instruction preparation specifically geared toward CALL (Kessler, 2005) which is probably why we have ended up with a varying set of expectations, practices and standards.

‘There is far too little assessment being done to guide professional development’ (McKenzie, 2001, p. 11) although the integration of technology within the language classroom has benefited from a wealth of research during the past decade. While this research is still in a nascent state, there are other compelling areas on the periphery that have yet to be addressed. It seems that among these is the nature of the teacher training that underlies this integration of technology within the language classroom. Perhaps one of the first necessary steps along this path is an assessment of the extent
of CALL training among TESOL teacher training programmes as well as the perceived appropriateness and effectiveness of this training by teachers. Yildirim (2000) notes for example, that despite attempts to teach inservice teachers basic computer skills as well as how to integrate several computer applications into the classroom, teachers do not feel prepared enough. In the process of infusing schools with technology, there are a lot of decisions to be made about how to help teachers become proficient users of technological tools. In fact, the need to continue in-service initiatives that not only better prepare teachers to effectively integrate technology into the classroom, but also increase their technology skills has been confirmed in a study carried out by Spaulding and Rakes (2009). The study showed that both pre-service and in-service teachers with higher technology skill levels revealed significantly more positive attitudes and perceptions about technology integration than those who were less skilled.

The true challenge of professional development is to inspire and prepare classroom teachers to make meaningful use of new technologies. Knowing how to use technology hardware or software may not be enough to help teachers integrate it meaningfully. Teachers will probably need to expand their knowledge of pedagogical practices, so that they are able, for example, to select computer applications that meet both curricular needs and the learning needs of their students. They will need to help students develop collaborative skills and skills which will enable them to work autonomously in a technology rich environment as Webb and Cox (2003 cited in Ertmer and Ottenbreit-Leftwich, 2010) explain. This indicates, it would seem, the complexity and the uncertainty of what teacher education programmes need to include. What I mean is that helping teachers acquire technical and pedagogical skills, although necessary to be able to implement technology successfully, may not be enough. This shows that Reinders (2009) is right in arguing that teachers must also be able to support their students in learning with the new technology, as the fact that many students feel comfortable with computers does not suggest that they can use technology for learning purposes. Further, it may also be necessary to identify and assess alternatives to formal training which may guide CALL teacher trainers toward more effective methods.
However, Ministries of Education or schools hire expensive outside consultants to do batches of one-day inservice-training sessions or courses, offering useful tips, teaching these tools in a vacuum (Newman, 2000) with no opportunity for teachers to see this happen “back in the classroom on Monday morning” (McKenzie, 2001). Teachers need to be recruited (ibid). That is to say, teachers must be convinced of the value of CALL and then given ample time to work on teams to invent effective lessons. Interestingly, Ertmer (1999) argues that in order to achieve meaningful use of technology all stakeholders will need to develop a shared vision, so that they all know what they want to do, first without, and then with, technology. Teachers, he explains, need opportunities to observe models through on-site demonstrations of technology-integrating peers or mentors. They also need to reflect on and discuss ideas with peers and mentors, as well as engage in continual on-site collaboration with colleagues and experts. In similar vein, Sandholtz (2002) points out that in-service education should be a collaborative effort among all parties involved, including teachers, so that they will all feel a sense of commitment. Teacher education and professional development programs are responsible for helping teachers change their mindsets to include the idea that teaching is not effective without the appropriate use of technology (Ertmer and Ottenbreit-Leftwich, 2010).

Although the primary factor or “most important catalyst’ (Wolff, 2002) that will or will not facilitate change is the individual teacher herself and the extent to which each teacher allows “input to become intake” (Pennington, 1996), by designing the content of teacher development programmes to be more contextual, teacher trainers can help these programmes to be more effective. In other words, identifying problems within a specific situation and designing a course which is localized and relevant to the needs of the participants, is less likely to end up in “tissue rejection” (ibid). It is the teacher educator’s job to help pre- and inservice teachers to figure out how to create a classroom environment that is fundamentally different from the one they have encountered themselves (Ertmer, 1999). If one genuinely wishes the classroom environment in the next few years to be any different from previous years, time and money must focus on
teachers, since it is the teacher who is “the key determinant of implementation” (Lee, 2000) and must be seen as an agent of change (Ertmer and Ottenbreit-Leftwich, 2010). Teacher educators will probably need to ask teachers themselves how they can be helped to achieve their goals, rather than do something they decide is good for teachers. The challenge is to see how teacher educators and school administrators can incorporate their vision of technology in English language education in ways that the teachers can support. To sum up, teacher development is about the needs and wants of individual teachers (Edge, cited in Wallace, 1991, p.3) and teachers’ responses to specific training sessions indicate whether those needs and wants coincide with the trainer’s hopes and aims.

Language teacher education, according to Crandall (2000) is a microcosm of teacher education and many of the trends in language teacher education derive from theory and practice in general teacher education adding that these trends include a major shift to a constructivist perspective of teaching and learning which renders teachers a primary source of knowledge about teaching. It would seem that since teachers are adults Knowles (1990) is right in saying that those involved in professional development also need to consider how adults learn; that adults prefer to be in charge of their own learning and responsible for its direction, that they are problem solvers and able to draw on their experiences as they gain new knowledge and that they prefer their learning to be immediately applicable to their lives. ‘If we invest in robust professional development with an emphasis upon adult learning strategies, we expect all teachers to learn, to grow and to move forward, sometimes relying on high touch, sometimes on high tech, sometimes with a magical blend of both’, (McKenzie, 2001). Considering teachers’ training preferences could be a step towards this direction (Meskill, 2006) Self-instruction and training by peers were teachers’ preferences for professional development (Jaber & Moore, 1999 in Meskill 2006) while workshops (Richards and Farrell, 2005), skilled partners working alongside during the lesson (McKenzie, 2001) and peer coaching (Robbins (1991, cited in Richards and Farrell, 2005) seem to be very useful for introducing educational innovation and preparing teachers for the change. However, according to constructivist theory, learning is an individual process of knowledge building, with each individual learning in different ways even when provided
with similar learning experiences (Williams and Burden, 1997) which suggests that professional development will not have the same impact on all teachers.

### 2.8.1 Language Teacher Educators

The importance of what quality requirements a teacher educator should have to be able to provide instruction, guidance and support to student-teachers should always been borne in mind. As Koster et al. (2005) maintain, teacher educators should be primarily concerned with bridging the gap between the theory that student teachers receive and their actual classroom practice. Richards et al. (1996) note that teacher educators need to find out what questions each teacher participating in a training programme is struggling with when they complete a training programme and whether teachers do have their own individual questions about teaching and learning which will guide their further development as teachers. The major challenge, however, according to Troudi (2005 p. 5) is what should be core in TESOL teacher education or what should constitute "a TESOL knowledge base" (Fradd and Lee, 1998), which can impact the planning and designing of teacher education programmes worldwide. Fradd and Lee (1998) argue, for example, that the integration of technology into language classroom teaching can provide valuable support, but because often teachers are not prepared to use technology in their teaching, it is important to provide them with opportunities for practical applications, as well as ‘practical strategies for handling the different barriers they will face’, (Ertmer, 1999). As Pennington (1996) and Richards et al. (1996) point out, teachers-in-training “follow individual paths in the absorption and application of knowledge”. Given this, individual training will be more effective. Considering how long computers have been part of the field of TESOL, and the fact that it is unclear what a teacher education programme in CALL should include, indicates that selecting the right content to meet individual needs is one of the challenges that CALL education is facing. Thus, it is apparent, as Beaver, (2004) points out, that teacher trainers need skills of a higher order than those needed, or acquired by teachers.

### 2.9 Summary
To sum up, research shows that teacher-education technology courses and programmes have a limited impact on how teachers think about and implement technology-supported teaching (Cuban, 1996 cited in Egbert et al. 2002). Therefore, it is not enough to develop new training models that will result in faster and better integration of technology. Teachers, must, I think, be encouraged to embrace self-directed, constructivist learning and be convinced that technology will improve the quality of their instruction and ultimately, student learning. One hundred additional hours of learning computer software is not likely to transform traditional teachers into constructivist teachers. The transformation of teaching styles, preferences and behaviours requires persuasion, learning by experience and the provision of highly personalized learning journeys (McGrail, 2005; Mckenzie, 2001). It seems that schools have relied too much on training models which involve a series of skills lessons, often out of context, with little adjustment made for learning styles, development stages or personal preferences. As Ertmer (1999) points out, the training model usually lasts a short period of time with insufficient guided practice, and remote from the classroom, leaving many teachers wondering about their usefulness and worth.

W.B. Yeats commented that “education is not the filling of a pail, but the lighting of a fire.” In other words, as Warschauer et al., (2000) argue, in order to light students’ fire teachers will have to rethink traditional ways of thinking and start involving students in authentic and challenging communication, inquiry, and problem solving using information technology. The process of helping students achieve their full potential in the age of information technology is worthwhile despite the frustrations caused by technical problems (ibid; Becker, 2000). It is important to consider how we can best help to prepare students for the different demands that the future will make but at the same time we need to think about the content and significance of our materials, the values and attitudes we project. In fact, given that teachers possess the potential to transmit values and attitudes to students, it is important to understand, as Teo (2010) argues, that the success of implementing technology in schools depends primarily on the support by and attitudes of the teachers involved. This has major implications for language teacher development.
Chapter 3 - Methodology

In this chapter I shall clarify the set of fundamental beliefs I drew upon in terms of research methodology explaining the rationale, that is the epistemological and ontological assumptions, underlying my decision to employ a qualitative approach. I then go on to describe the participants and the selection procedure which is followed by an explanation of the types of data collection methods I used, including triangulation procedures (validity issues). Finally, I discuss data-analysis and interpretation as well as the limitations and the ethical aspects of the research.

3.1 The Interpretative paradigm

The Interpretative research paradigm, also known as constructivist, naturalistic and qualitative approach to educational research (Ernest, 1994, p. 24) or alternatively referred to as phenomenology, ethnomethodology, hermeneutics and social anthropology (Bassey, 1995) is mainly concerned with human understanding. As also noted by others including Denzin & Lincoln (1994), Hitchcock and Hughes, (1995 cited in Cohen et al., 2000, p. 23) and Merriam (1998), within the interpretive approach there are many methods – however, all of these share the same philosophical assumption, namely that reality is constructed by individuals interacting with their social worlds. In other words, qualitative researchers are concerned with how individuals make sense of their world and their experiences.

This, undoubtedly constitutes a major shift from the scientific research paradigm. ‘Interpretivists argue for the uniqueness of human inquiry, and to understand human action by means of interpretation is to argue for an altogether different aim from natural science’ (Erickson, 1990, p. 98 cited in Radnor, 2001, p. 4). Researchers are no longer merely ‘the fly on the wall’ able to distance themselves from what is happening. Rather, they participate actively in what they are studying (Bassey, 1999, p. 13).

Ernest’s contention that individuals’ perceptions are starting points in studying social phenomena is important (Ernest, 1994). The interpretive paradigm emphasises the
individual differences in human behaviour since humans perceive and interpret the world in various ways. These different individual interpretations of social phenomena in turn influence individual and social behaviour. Consequently, interpretive research does not see humans as responding merely to simple stimuli, but as making decisions based on their individual knowledge, experiences, intentions, and interpretations of social reality. Thus, the purpose of interpretive enquiry is to advance knowledge by providing interpretations which according to Cohen et. al., (2000) are sometimes contradictory.

Pring (2000) highlights the difference between the objective world of scientific enquiry and the kind of enquiry suitable for understanding human mind. This may lead us to take a look at the form of truth, the kind of reality that seems to underpin the interpretative research paradigm.

3.1.1 Ontology
In the interpretive approach people are no longer ‘passive dolls’ (Becker, 1970 cited in Cohen et al. 2000, p. 22) but are actively involved in interpreting events and situations. Consequently, multiple interpretations are provided which shows that we live in a world of multiple constructed realities (Cohen et al., 2000; Miles and Huberman, 1994; Richards 2003; Bassey, 1995; Radnor, 2001; Pring, 2000). As Pring (2000) argues, each person lives in a world of ideas and it is through those ideas that both the physical and social world are constructed. It seems to be the case, that humans live in a world which is independent of them and at the same time inhabit a social world which has the meaning they themselves bring to it. This meaning which is constructed by the individual rather than discovered, constitutes the concept of reality in this school of thought and in fact, lies at the heart of interpretivism, constructivism or naturalism.

3.1.2 Epistemology
According to Carr and Kemmis, (1986, p. 71) ‘subjective and social factors play a crucial role in the production of knowledge’. Thus, the knower and known are inseparable as there seems to be no meaning without a mind. Pring (2000, p. 33) appears to question this contrast arguing that educational research is ‘both and neither’ and I think he is right.
3.1.3 Methodologies and data collecting methods

Ethnography, phenomenology and case study are some core methodologies employed within the interpretive paradigm. Le Compte and Preissle, (1993 cited in Cohen et al., 2000, p. 139), suggest that ethnography is concerned more with description than prediction, induction rather than deduction, generation rather than verification of theory, and subjective knowledge rather than objectivities (objectivity is not an assumption here).

In other words, ethnographic approaches seek to describe and understand the behaviour of a particular group of people. To be able to do this, the researcher, often as a participant observer, will need to use extensive fieldwork and try to see things through the eyes of the participants (Richards, 2003, pp. 14-15). Not surprisingly, participant observation, field notes (results of observations), interview, recording and documents are common means of data collection here (Cohen et al., p. 146). Phenomenology focuses on the lived experience (Richards, 2003). Central to the methodology of phenomenology is to ‘penetrate to the essential meaning of human experience’ in order to understand a phenomenon from within (ibid, 2003, p. 20), providing “insider accounts” (Hitchcock and Hughes, 1989, p. 53). Finally, a case study, as Richards (2003) notes, may mean different things to different people (2003, p. 20). However, what is important, he adds, is that it focuses on a particular unit or units, a singularity according to Bassey (1999) and its aim is to provide a thick description (Geertz, 1973, cited in Holliday, 2002, p. 77).

Any study, according to Punch (1998), ‘can have all quantitative data, it can have all qualitative data, or it can combine both types in any proportions’. However, qualitative data is a key element in interpretive research and to the qualitative researcher almost anything can be used as data. The researcher, who according to Radnor (2001) is a data collecting instrument, observes, interviews and takes notes. Naturally, this is something that may cause scepticism. If we accept that the researcher’s beliefs guide every stage of research, then we may wonder whether data collected in this way is indeed free of any bias. The answer comes from Cohen et al. (2000, p. 105) who state that we should not ‘think that threats to validity and reliability can ever be erased
completely’. It seems to be the case that the emphasis placed on the use of *triangulation* - multiple methods to collect data – eliminates bias and increases validity (Cohen et al., 2000, p. 112). The contribution that triangulation makes to the trustworthiness of the data is also emphasized by many others including Davies (1992) and Brown (2001).

### 3.2 Research Methodology

Since the aim of this study is not so much to resolve major theoretical questions, but to explore teachers’ CALL and IT use, beliefs and behaviours with a view to understand things better, and since the most common use of qualitative research is to provide an in-depth understanding of social phenomena within their natural context (Denzin & Lincoln, 2000) the present study was carried out within the interpretive paradigm as this kind of research sees reality as a construct of the human mind (Bassey, 1995). Educational institutions are societies in which teachers, students and teacher educators are participants, each observing and interpreting the world in their own individual way; as a result, they can come up with completely different views on what is real (ibid). Both the Ministry of Education and Culture and English language teachers may have acted rationally and sensibly within the reality of the world as they see it when CALL and IT were introduced into schools but it seems that innovators have to address not only the world they see, but also the world other people see, “however misguided, perverse and distorted they may think the outlook of others to be” (Everald & Morris, 1985, p. 171) as this would increase the likelihood of successful implementation of an innovation.

In considering all these, as well as the nature of my research questions and my paradigmatic stance, I employed a combination of both quantitative and qualitative methods. The concept of mixing different methods, Cresswell (2003) explains, probably originated in 1959 when Campbell and Fiske used multiple methods to study the validity of psychological traits. He notes that before long, others were encouraged to employ multiple approaches to data collection in a study, such that the limitations inherent in one method could be eliminated by other methods, echoing Patton (2002) and Tashakorri and Teddlie (2003) who argue, that this combination of mixed methods helps to minimize errors that could result from using a single technique. This soon led to
triangulation: a combination of qualitative data such as data from observations and interviews with quantitative data obtained in traditional surveys. According to Tashakorri and Cresswell (2007, p. 4), mixed methods studies are identified as those ‘in which the investigator collects and analyzes data, integrates the findings and draws inferences using both quantitative and qualitative approaches in a single study or a program of inquiry’. This definition seems to have bridged the gap among scholars in the mixed methods community in terms of reaching an agreement on what constitutes mixed methods research (Tashakorri, 2009).

The mixed methods research closely parallels everyday human problem solving in a way that neither qualitative nor quantitative methods can do (Tashakorri and Teddlie (2010). In other words, in their decision making, everyday problem solvers will use multiple approaches which are similar to qualitative and quantitative pathways. Bearing all these in mind, the mixed methods approach appeared to be most appropriate for my setting. I based my research on the assumption that using different types of data would help me minimize errors that could result from using a single technique as well as help me understand my research problem better. I collected my data in phases (sequentially) starting with a survey which provided me with a general picture of the situation. To obtain a detailed picture, I conducted semi-structured interviews and classroom observations which provided me with the full picture and therefore a better understanding of the problem.

It has been argued that observations have contextual relevance not only in the immediate context but also in further settings beyond (Cohen & Manion, 1994). With such an approach the assumption is made, therefore, that the findings of this study are not only pertinent to the secondary schools involved in the study but also to other secondary institutions in Cyprus and elsewhere with a similar profile. Indeed, seeking to minimize my effects on the behaviour of the people being studied I aimed at increasing the chances that what was discovered would be generalizable to other similar settings.

Despite the many advantages, interpretative or qualitative research also has disadvantages, one of which relates to the subjectivity of the researcher. Put differently, the results of the study, namely the understanding arrived at, are little more than the
investigator’s interpretation of the data. This raises questions of reliability and/or internal validity. To achieve objectivity one must consider internal validity which amounts to a simultaneous demonstration of reliability (Guba and Lincoln, 1985).

### 3.3 Data collecting methods

Table 3.1 below details all the data collection methods and the procedures (including which participants did what and when).

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Collection Methods</th>
<th>Data Collection Date</th>
<th>Data Analysis</th>
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</thead>
<tbody>
<tr>
<td>1a. What is the environment for CALL in EFL classrooms?</td>
<td>Questionnaires (61)</td>
<td>February 2010</td>
<td>SPSS Qualitative content analysis (thematization)</td>
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<td></td>
<td>Interviews (13 EFL teachers)</td>
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<td></td>
<td>Classroom observations (9 EFL teachers)</td>
<td>February-March 2010</td>
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<td>April-May 2010</td>
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<tr>
<td>1b. What is the support for CALL in EFL classrooms?</td>
<td>Questionnaires (61)</td>
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<td>SPSS Qualitative content analysis (thematization)</td>
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<td>1c. What types of training are provided for EFL teachers?</td>
<td>Questionnaires (61)</td>
<td>February 2010</td>
<td>SPSS Qualitative content analysis (thematization)</td>
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<td>1d. How is CALL used in EFL classrooms?</td>
<td>Questionnaires (61)</td>
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<td>SPSS Qualitative content analysis (thematization)</td>
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Table 3.1 Data Collection methods and procedures

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<th>Question</th>
<th>Method</th>
<th>Time</th>
<th>Software</th>
<th>Analysis</th>
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<tr>
<td>2. What are EFL teachers’ beliefs about using technology in teaching?</td>
<td>Questionnaires</td>
<td>February 2010</td>
<td>SPSS</td>
<td>Qualitative content</td>
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<td>3. What factors influence CALL use in EFL classrooms in secondary schools in Cyprus?</td>
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<td>February 2010</td>
<td>SPSS</td>
<td>Qualitative content</td>
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The study combines survey and qualitative methods for several reasons. Given my goal of finding the tools that would best serve the purposes of my particular project, it was the case that combining questionnaires and interviews as well as considering other alternatives such as classroom observations would be most appropriate (Brown, 2001). “In fact, the best way to find out what people think about any aspect of a language program is to ask them directly in an interview or on a questionnaire” (ibid, p. 13). It would appear, however, that both interviews and questionnaires, despite their advantages, are at one stage from the real action, since they are merely recollections or interpretations rather than records or verifications of what actually happened. This would seem to be especially true with regard to technology use in the classroom. Teachers may, for example, over-report computer technology integration but the actual extent to which technology is used can only be examined by systematic classroom observation.

3.3.1 Questionnaires

Rationale

Questionnaires have regularly appeared in studies exploring teachers’ beliefs and practices (MacDonald et al., 2001) and it is not surprising that there were, several advantages to using a questionnaire in this study. To begin with, using an anonymous questionnaire seemed to be quite appropriate as anonymity must have prevented
teachers from concealing their real feelings and giving misleading data. In addition, Wallace (1998) notes, questionnaires “more easily generate conclusive findings” (p. 47) and being easy to administer because the presence of the researcher is not necessary and easy to analyze mainly for being straightforward (Wilson and Mclean, 1994 cited in Cohen et al., 2000, p. 245), in this study they have proved to be quite appropriate.

However, questionnaires require much thought and organization. The questionnaire can always be a potentially intrusive technique either in terms of time taken to complete the questionnaire or by possibly invading the respondents’ professional or private life (Wallace, 1998; Cohen, et al., 2000). Moreover, the questions need to be formulated carefully so that they do not pose a threat to the respondents. It may be added, though, that very often the degree of intrusion can be mitigated by sensitive handling (ibid).

Design

Having defined my research objectives and considering all the above issues, I developed a questionnaire by generating items after identifying studies that explored relevant issues such as Wozney et al., (2006) and England, (2007). The items that I adapted from the questionnaire in the study by Wolzey et al (2006) have to do entirely with the section on teachers’ beliefs such as item 16 (It is very important to use computers/IT in my teaching) and item 28 (Technology makes learning more motivating). The study by England (2007) facilitated the generation of items that were concerned with the physical environment such as the availability of facilities and tools as well as items about technology use and training. I designed items with respondents in mind so terminology is understood and defined terms that might lead to confusion.

The questionnaire consisted of 44 closed items, the first nine of which sought background information about the respondents. The participants were asked to respond using a five point Likert scale running from “strongly agree” (SA) to “strongly disagree” (SD) or to choose from a variety of options. The first nine questions sought personal/background information about the respondents. Part A aimed to elicit information about the respondents’ current use of technology while Part B was designed to elicit responses that would reveal their underlying beliefs and views about CALL use.
Part C was about their attitudes towards the provision of training in computer/IT training while Part D aimed to shed light on what other factors (support/resources etc) influenced CALL use. This served to provide a general, yet necessary picture of the situation in Cyprus. I was also provided with the contact details of the 13 teachers who agreed to a follow-up interview.

*Distribution*

The questionnaires were completed at the participants’ convenience. This academic year (2009-2010) I was attending a compulsory in service training programme for assistant principals in secondary education which consisted of 26 full day sessions held once a week. The programme provided me with the opportunity to meet with 29 other assistant principals (some of them English language coordinators) teaching in different schools. As a result, after obtaining official permission from *KEEA* (Education Research and Evaluation Centre) to undertake research among English language teachers in secondary education, the questionnaires were hand delivered to teachers in different schools by an assistant principal. The teachers completed them at their own convenience and without my presence eliminating stress levels. Following this, the self-administered questionnaires were returned to me by the assistant principals within two weeks. Further details regarding how I ensured that the data collection methods I used did not cause any harm or unreasonable stress will be provided in the final section of this chapter under “Ethical considerations”.

It is widely accepted that while questionnaires are a useful means of collecting data about people’s habits, interviews can be more appropriate for collecting information about people’s attitudes. Interestingly, even though questionnaire surveys may be impressive in terms of the number of cases included, what they gain in quantity they lose in quality as they “are often filled in hurriedly” (Cohen et al., 2000, p. 269). For these reasons, despite the reliability of the questionnaire mainly for being anonymous, the study included interviews in order to clarify issues and get deeper into teachers’ reasons for responses.
3.3.2 Interviews

It is generally agreed that interviewing is one of the most powerful tools used in attempting to understand people’s points of view, beliefs and attitudes. Because of its interactive nature, interviewing has many advantages over other types of data collection strategies (Kvale, 1996; Best & Kahn, 1998; Cohen et al., 2000). Interestingly, Kvale (1996, p. 147) notes that because the researcher is the research instrument in order to be effective they need to be experts in interaction and communication. Developing an atmosphere that fosters trust and ease is of the utmost importance not just for the interview to be worthwhile, but especially if there is the need to continue contact with the participant – as was in this case with classroom observations. It has been well documented, though, that face-to-face interviewing is both time consuming and personally draining (Borg & Gall, 1989; Cohen & Manion, 1994).

Nonetheless, in the present study one-to-one interviewing was chosen for two reasons. Firstly, it provided an ideal means of exploring teachers’ beliefs and perceptions as it was easier for teachers to be themselves. Secondly, it helped to establish rapport with teachers. I attempted to be as sympathetic as possible, ensuring that teachers were convinced that their opinions were valued and that the interview had nothing to do with their assessment or inspectors To achieve this, in many cases, I began with a question about the weather or some other “irrelevant” topic following Brown’s advice (Brown, 2001) which helped to create a more relaxing atmosphere. Building rapport helped teachers to feel more important and sufficiently confident to provide honest and open responses as well as volunteer for classroom observation.

In the words of Patton (1990, p. 278) the purpose of an interview is to explore what is “in and on someone else’s mind” regarding in the present study, English language teachers’ behaviour, view, attitude and feelings toward IT use in teaching and learning. Indeed, as Richards (2003) states, the aim of the qualitative interview is not merely to accumulate information but to deepen understanding which is achieved by negotiating the territory between “the Scylla” of too many unfocused questions and “the Charybdis” of accumulating details from too many Wh- questions (ibid, p. 54). As a result, I used semi-structured interviews which allowed me to gain a deeper awareness of teachers'
behaviour, views, attitude and feelings toward CALL and in service provision in IT as well as make comparisons. The number of times the teachers included CALL activities in their practices or the amount of time they spent in the Language Room, for example, could be easily measured quantitatively. Yet, their responses to individual interviews, to questions about the reasons why they did or did not incorporate technology in the classroom or the kind of provision in IT they would like to see made available in the future could not be measured quantitatively but proved to be more interesting to me. It is widely agreed, of course, that one approach does not contradict the other but complements it so that new insights are achieved and not existing prejudices are not confirmed, as Wallace (1998), indicates.

Given all of the above, a question guideline was developed, adapted from Lam, (2000) and Acikalin, (2009) which was used in the oral interview (Appendix B). In this study, the interviews, although time consuming, remained practical in nature. A particular problem that presented itself, however, was attempting to schedule interviews over a relatively short period of time with 13 busy professionals as I conducted all of the interviews over a period of three months. The interviews ranged from 30-45 minutes and they all took place in schools. Being aware of the busy schedules of the participants I ensured that the interview did not impinge unduly on their time. The participants were given the option of viewing the interview schedule prior to the interview. An essential part of the interview protocol was that prior to the commencement of the interview each participant was asked to give their consent for the recording of the interview. The use of the recorder on my laptop enabled me to maintain eye contact with the respondent, observe their body language and listen not only to what the interviewee said but how they said it (Richards, 2003)

The interviews were conducted in Greek. This was to be expected, given that the participants’ mother tongue was Greek. I did not require them to use English but encouraged them to use Greek, since I felt that given the choice, some of them - if not all - might have been too embarrassed to say they preferred Greek which would cause them to provide me with far less information. Hence, since one of the things my study focused in part on was teachers’ beliefs, it was felt necessary for the participants to
describe complex thoughts, ideas, perceptions, experiences or events in an oral form; being an English learner and teacher myself I was well aware of the anxiety involved when having to use a foreign language to express ideas and of how this might prevent one from articulating exactly what one wishes to convey. In other words, I considered the use of Greek to be a good way to avoid potential language–related problems which might cause me to end up with less, or even misleading information. It is important to mention that in order to ensure reliability, after transcribing and translating the interviews I asked a bilingual former colleague (ex-inspector of English) who had retired to compare and check the two versions.

3.3.3 Observations

*Who would you rather believe? Me, or the evidence of your own eyes* (Groucho Marx).

Observation has been described as the essential basis for all research methods in social sciences (Creswell, 2005). Observations, it is argued, enable the researcher to see things that might otherwise be unconsciously missed that make observational data particularly attractive as they afford the researcher the opportunity to gain insight into situations which is unlikely to gain in interviews (Cohen et al., 2000). Although the art of observation is an accessible skill, through observing human behaviour in one’s personal and professional lives, research requires observation to go beyond the subjective and impressionistic, so that the researcher is aware of bias, and can eliminate it as well as be more open about one’s procedures so as to open them up for public scrutiny. In other words, we need to realize that what goes on in the classroom should not be recorded in a “black box” (Long, 1980) but rather others will need to be able to check the bases on which we reach conclusions.

There are degrees of participation in observation ranging from complete participation to complete detachment. Indeed, the first and most fundamental distinction among observational strategies concerns the extent to which the observer is also a participant in the program activities being studied. Experiencing an environment as an insider is what makes the participant feel part of participant observation. At the same time, there
is an observer side to this process. The challenge is to combine participation and observation so as to become capable of understanding the experience as an insider while describing the experience for outsiders (Genzuk, 2003). It should be stated, however, that understanding will not necessarily require a researcher to become a full member of the group being studied.

It is difficult to provide a precise set of rules and procedures for conducting fieldwork as (it is a highly personal experience) what one does depends on the situation, the purpose of the study, the nature of the setting and the skills, needs and points of view of the observer. The purpose of observation in the context of the present study was not to evaluate the teaching. Rather, observing the teachers in action allowed me to assess the extent to which the teachers’ beliefs and reported practices corresponded to what actually happened in the classroom. It was also a form of data triangulation. While it seems inevitable that the greater number of observations, the greater the reliability of the data, as far as the present study is concerned, I stopped observing when the nine volunteers had been observed but it was also clear that the data I was receiving from classrooms appeared to be repeating itself. It may also be noted that as direct observation tends to be more focused than participant observation it also tends not to take as long (Trochim, 2006).

As with other data collection techniques, criticisms and concerns may be advanced regarding observations. Issues of validity and reliability do have a place here, too, and according to Cohen et al., (2000) these issues can be handled to a greater extent by introducing systematic observation. Nonetheless, the validity and meaningfulness of the results obtained depend directly on the observer’s skill, discipline and perspective which is both the strength and weakness of observational methods (Genzuk, 2003). The effect on the behaviour of the observed, possible consequences of the observed as well as the ethics of the observer’s actions are issues which need to be addressed (Richards, 2003). Clearly, it is the responsibility of the researcher to try to act in ways that are ethically acceptable as “the ultimate arbiter of what is right and decent is your own conscience” (Richards, 2003, p. 139).
It may also be argued, perhaps justifiably, that observation techniques have further limitations as they seem to be unable to tell us anything about why teachers behaved in the way they did. Wellington et al., (2005, p. 98) suggest that we should not make claims to represent people’s beliefs and values following an investigation which has used only observational methods and has not directly sought the views of the people concerned through methods such as interviews or questionnaires. The example they provide of a mother smacking her child in a difficult moment despite her being against physical punishment shows that observations can lead to wrong interpretations and conclusions. We cannot, they explain, contend that this mother believes in physical punishment. In a similar manner, to say that teachers who have been once observed to use IT in the classroom believe in it because they were seen to do it would be just as erroneous. As a result, observations are criticized as being subjective, biased and impressionistic (Cohen et al., 2000, p. 313). In this study I did not use an observation sheet with a checklist as checklists are often viewed as too restrictive, but rather I used an ad hoc one focusing on the teacher’s use of technology (Appendix C).

### 3.4 Population and Sampling

The sample for the teacher beliefs questionnaire survey consisted of 61 teachers (14% male and 86% female) who, at the time of the data collection, were all teaching English in the state secondary education in Cyprus. Through the 29 assistant principals who attended the compulsory in-service course (a year-long course conducted once a day, specially designed for newly appointed assistant principals which I attended) at the Pedagogical Institute, 70 questionnaires were distributed to 70 teachers of English. The teachers came from 12 secondary schools which included both Lower Secondary (or Gymnasium) and Upper Secondary (or Lyceum) as well as rural and urban schools. They taught English at many different levels and were all fluent in Greek. 57 valid questionnaires were returned, achieving overall return rate of 81%. The additional four teachers of English in my school who agreed to participate in the research made the final number of participants 61. The reported number of years of teaching English in secondary education in Cyprus was a minimum of 3-5 (5%) and a maximum of 16+.
(31%) while 51% of the participants had teaching experience which ranged between 11-15 years (see Table 3.2 below).

<table>
<thead>
<tr>
<th>Number of years</th>
<th>Frequency</th>
<th>Percent</th>
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</tr>
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<td>5</td>
</tr>
<tr>
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<td>11,5</td>
<td>11,7</td>
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<td>Total</td>
<td>61</td>
<td>100,0</td>
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</table>

Table 3.2 Experience in teaching English
The participants mean age was 49.53 with a low of 32 and a high of 60, and a standard deviation of 5.478 (Appendix H).

Because this was a small-scale study, my purpose was not “generalization in a statistical sense” (Merriam, 2001, p. 61). Thus, rather than using probability sampling or random sampling, I applied two non-probability types of sample, namely purposive and convenience sampling, to select the participants (Cresswell, 1998; Merriam, 2001, Cohen et al., 2000). My purposive sampling included a criterion sampling strategy for suitability which caused me to “handpick the cases” (Cohen et al., p. 103) in order to build a sample that could satisfy the specific needs of the study. As Ritchie et al. (2003) suggest, this approach involves choosing samples which share particular characteristics that enable detailed exploration and understanding of the phenomenon that the researcher wishes to study. Convenience sampling, as Palak and Walls (2009) point out, involves drawing on individuals that are both easily accessible and willing to participate in the study. Thus, the selection included the following criteria:

1. Teachers of English who taught in government secondary schools (Lower secondary for students between 12-15 and Upper Secondary for ages ranging from 15-18) but were different in terms of geographical location (rural and urban), size of student population and the students' socioeconomic backgrounds. Although generalizing the results was not an issue in this study, using schools that were different from each other would make the results more transferable to other contexts.

2. Schools which had a Language Room (LR). It would not be possible to be able to observe a teacher’s CALL use in a school where computers were not available. The LR, according to the ministry, was defined as a classroom consisting of such equipment and facilities that would enhance CALL, (Ministry of Education and Culture, 2000, p. 6).

3. Teachers who were willing to participate in the study. Without the teachers' voluntary participation very little could have been achieved.

Along with these criteria, “maximal variation sampling” (Creswell, 2005, p. 204)-samples that differ on some characteristics- was employed to ensure diversity among
the participants and settings to enable me to make comparisons. Teachers’ age, educational background, teaching experience and experience with computers as well as involving both Lower and Upper Secondary schools in urban and rural areas, as stated earlier, contributed to the heterogeneity of the sample.

It is worth mentioning, however, that the purpose of the research, the time scales and constraints on the research as well as the data collection methods caused me to choose the sample with the required characteristics from those to whom I had easy access - convenience sampling or sometimes called accidental or opportunity sampling (Cohen et al., 2000, p. 102). Personal experience has shown, however, that convenience samples may not necessarily be easy to recruit, but such samples may be deemed to be ‘convenience samples’ because the researcher uses whatever individuals are available, rather than selecting from the entire population. Interestingly, as with non-probability sampling, population elements are selected on the basis of their availability (e.g., because they volunteered or because of the researcher’s personal judgement that they are representative) the consequence is that an unknown portion of the population is excluded (e.g., those who did not volunteer). Hence, because some members of the population have no chance of being sampled, the extent to which a convenience sample – regardless of its size - actually represents the entire population cannot be known but for a convenience sample generalization is “an irrelevance” (Cohen et al., 2000, p. 103). Recruiting a probability sample was not a priority at all in the present study as a researcher is able to demonstrate that a particular characteristic or phenomenon occurs within a given group or alternatively, demonstrate that not all members of that group manifest a particular trait. Moreover, a probability sample was not necessary because I wished to describe a particular group (teachers of English in government secondary schools in Cyprus) in an exploratory way. Interviewing 13 teachers about their experiences with CALL and IT was deemed to provide valuable insights about training and coping with technology, for example, despite being unable to generalize this to teachers in the entire population who share those experiences.

3.5 Data analysis
The data collected from the three research tools included information from the questionnaire, extensive comments from the interview and detailed descriptions of participants’ behaviour (use of technology) from classroom observations. In the interpretive paradigm, data are analysed inductively, rather than deductively with constructs deriving from the data during the research (Cohen et al., 2000).

3.5.1 Questionnaire Data

Although the method and procedures employed in qualitative research develop a grounded theory (Lincoln and Guba, 1985, pp. 39-43) the information collected from the closed-response items on the questionnaire was amenable to quantitative analysis. Hence, these data were input and stored in an Excel file and then analyzed and summarized using SPSS. Data from the different sections of the questionnaire were analysed in different ways according to whether participants were asked to respond using a 5-point Likert scale, or by choosing one of a variety of options provided. Details as to how the data were analysed are included in Chapter 4 - Findings, where tables are used to illustrate the responses with the most relevant or important information.

3.5.2 Interview Data

“What must be organised and presented are quotations from interviews. Sufficient quotational data should be presented to illuminate and support whatever analysis the evaluator presents in narrative form” (Patton, 1990, p. 420).

As far as the interviews are concerned, analysis forms part of the ongoing process of interviewing from the perspective of both interviewer and interviewee. This may include clarification, extension, making connections with earlier statements, making comparisons or resolving contradictions. In the present study, the interviewee had the opportunity to reply, for example, “I did not mean that” or “That was precisely what I was trying to say” (Kvale, 1996, p. 189). Put differently, analysis was embedded within analysis (Richards, 2003, pp. 80-81) and was an ongoing process.

Although there are a number of qualitative software packages available, I decided to conduct my analysis manually for several reasons. While I do appreciate what software can do, I am also aware of what it cannot do. As Cadorath (2005, p. 94) explains,
software “focuses on determining linguistic patterns based on group words; however, frequently meanings are expressed on more ‘round-about’ ways, which do not fall into one particular pattern.” Also since thinking is one of the things software is incapable of doing, as well as the fact that my data set was not too big, manual coding and interpretation seemed to be the obvious option. In order to demonstrate the validity of my findings I am reporting my analytical procedures in a detailed fashion.

A major initial step in organizing and preparing the data for analysis was to transcribe the interviews and read through all the data to get a sense of the whole. This was the stage at which the transcripts were returned to the interviewees for validation (Radnor, 2001). The next step I took was to go through all the transcriptions more carefully thinking about the underlying meanings, highlighting chunks of data and making notes. This was followed by ‘meaning categorization’ (Kvale, 1996, p. 192) which involved gathering all the chunks of data belonging to each of the categories which were based on the wording of the research questions I was addressing. In writing up the analysis I compared and contrasted the data to capture “some recurring pattern” in the study (Merriam, 2001, p. 179) and to identify all of the statements or phrases that went with each category (Miles and Huberman, 1994, pp. 245-246) (Appendix L). I noticed that while many of the participants’ replies overlapped, some meanings did not match any of the initial categories so I used these to form sub-categories such as “Section 5.4.5 Contextual factors”. It should be noted that all meanings relevant to my research questions, even those expressed by one participant were included in the description.

3.5.3 Observation Data

I based my observation on Cresswell’s (2005, p. 211) definition of this procedure as “the process of gathering open-ended, firsthand information by observing people and places at a research site”, and that it “serves a formulated research purpose and is planned deliberately” (Kidder, 1981, p. 264), I developed a classroom observation chart (Appendix C). The purpose of my observation sessions was to monitor how CALL was used in the EFL classroom. I took field notes during the classroom observations and recorded date and time of each observation. I made notes about things like how the computer/s was/were used and made sure my field notes included both descriptive and
inferential data. It should be clarified that observational data were only used as supplementary data and my field notes were used rather than actual classroom data.

I conducted nine observations which involved the nine participants who had agreed to be observed. Although one might suggest that a larger number of observations would probably have yielded more reliable results, in this study more observations would have had little difference as teachers’ behaviour, as far as CALL use is concerned, appeared to be repeating itself.

The first step in organizing and preparing the data for analysis was to fill in any missing details after each observation was completed before these slipped from memory. On the same day whilst at home, I spent time writing down my reflections on each observation when I had time to do so. This was an important step as it provided me with valuable insights that would otherwise have been forgotten. I entered my field notes into a word processing programme to help me analyse data later. I analysed observational data in a similar way to the procedures adopted in analyzing the interview data. In particular, I read through all the data thinking about the underlying meanings, highlighting chunks of data and making notes. During this procedure I considered the categories of data that could help me to address my research questions and gathered all the chunks of data that belonged to each of the categories which were based on the wording of my research questions.

I attempted to adopt an open minded approach in critically and as objectively as possible allowed patterns to emerge without being influenced by my own prejudices, arguably easier said than done. Being aware of my own subjectivity assisted in this process, in increasing the trustworthiness of the study but being faced all the way through with my own beliefs and perceptions about computer technologies and in-service provision of IT has presented significant challenges. This leads to a consideration of emic and etic analysis (Arsenault and Anderson, 1998; Cohen et al., 2000). Etic analysis involves adopting the beliefs and points of view of the participants as an insider while emic analysis involves maintaining objectivity as an outsider so that
one may raise questions that would not occur to the participants. In taking into account the importance of an emic view, I sought to describe, interpret and (re-) construct the participants’ reality “as they understood it and participated in it” (Hornberger, 1994, p. 689). Nonetheless, Agar (1996) claims that it is not possible for qualitative researches to eliminate etic perspectives because of their very human nature. This, appears to lead to the researcher’s inevitable sense of subjectivity in the process of sense-making to be unavoidable. As a result, what seems to be crucial is the researcher’s awareness of this subjectivity in the process of constructing knowledge. In my case, the problem was that in being a teacher and a coordinator myself and being professionally involved with the participants I may have influenced the results, in particular by showing (though being unaware of it) my views to the interviewees. However, being aware of my subjectivity from the outset and throughout the whole research process helped to eliminate a level of bias.

3.5.4 Validity and Reliability

Within the interpretive paradigm quality in research may be ensured by consistency, confirmability and transferability (Davies, 1992). Consistency suggests that research will yield similar data from similar respondents over a period of time while confirmability means that the data and their interpretation are supported with evidence. By transferability it is suggested that a study can develop a theory which can exceed the situation from which it emerged. It is analogous, according to Guba and Lincoln (1981) to external validity, that is, the extent to which findings may be generalized.

Guba and Lincoln (1985, p. 145) argue that terminology like internal validity, external validity, reliability and objectivity are associated with the quantitative research tradition and are not appropriate for qualitative analyses. Nonetheless, they propose four alternative terms to deal with the same, or at least analogous, research issues in order to ensure the trustworthiness of qualitative studies: credibility, transferability, dependability, and confirmability. Credibility is loosely analogous to internal validity in quantitative studies and this may be enhanced by using strategies such as systematic observations, triangulation, peer debriefing and/or member checking. Transferability is in some ways similar to external validity in quantitative studies, and this may be
enhanced by using thick description. Dependability is in some respects analogous to reliability in quantitative studies, and this can be improved by using overlapping methods, stepwise replications, and/or inquiry audits. Confirmability is roughly analogous to objectivity in quantitative studies, and can be improved through the use of audit trails (as described in detail in Lincoln and Guba, 1985). In other words, numerous strategies can be applied iteratively to enhance the validity or verification of the conclusions qualitative researchers draw from their qualitative data.

It seems clear, therefore, that despite their varied nature, qualitative research findings can be evaluated for accuracy through a variety of means. In this study the methodological safeguards I employed to add "rigor, breadth and depth" (Denzin and Lincoln, 1994, p. 2) and thus increase internal validity included data collecting methods (triangulation and member checking) as well as transparency of method.

3.5.5 **Triangulation**

"If we truly seek to understand better the professional world we inhabit, we need to be sensitive to *all aspects of the ways in which it presents itself to us*, and aware of our place within it" (Richards, 2003, pp. 61-62, italics mine).

The above quote brings in the issue of triangulation - the use of multiple methods to collect data - which increases the validity of a qualitative study (Cohen, 2000) by contributing to the trustworthiness of the data (Brown, 2001, p. 227) as it appears to look at different *aspects of the ways in which the world presents itself to us*. Nonetheless, since triangulation originates from Greek as “tria” means “three” using triangulation should refer to the use of three methods to collect data rather than multiple methods. In essence, though, the purpose of triangulation is to maximize the possibility of obtaining credible findings by cross-validating them. As Miles and Huberman (1984, p. 235) state, “Stripped to its basics, triangulation is supposed to support a finding by showing that independent measures of it agree with it or, at least, don’t contradict it.” Hence, combining the qualitative results of interviews and observations with the quantitative results of a questionnaire might prove to be an effective form of triangulation, (Brown, 2001, p. 231).
I shall briefly refer now to the different types of triangulation and what I chose to triangulate in the present study. Denzin (1978) lists four categories of triangulation: data triangulation, investigator triangulation, theory triangulation, and methodological triangulation. Freeman (1998) suggests a fifth type which might be actually viewed as two types: triangulation in time and/or location.

While it is not feasible, or even desirable to use all six forms of triangulation, using several can prove helpful. In this study, I have used two forms of triangulation: data triangulation—using multiple sources of information, and methodological triangulation—using multiple data gathering procedures. Data triangulation was done by gathering information from teachers and assistant principals/coordinators in both Lower and Upper secondary schools while methodological triangulation was accomplished by using questionnaires, interviews and classroom observation.

3.5.6 Member Checking

An additional qualitative research technique, that of member checking was used at various points in this study. Member checking involves verifying the data, analyses, interpretations and conclusions with the respondents themselves. Since the most important issue in evaluating the rigor of qualitative research is that of trustworthiness, using the strategy of member checks is critical to minimizing distortion. At each stage of this research, member checking was an important factor in developing the questionnaires, in deciding which questions to ask in the interviews and in verifying the conclusions as they crystallized. Indeed, during the interview, member checking consisted of my restating, summarizing or paraphrasing the information received from a respondent to ensure that what was heard was in fact correct. Following data collection, member checking consisted of reporting back preliminary findings to participants, asking for a critical commentary on the findings and potentially incorporating these critiques into the findings. Sometimes when participants agreed with my analysis, given that they were not researchers, was a matter for concern as this was probably an indication that my project did not show something new. Nonetheless, these two forms of member checking added both accuracy and richness to the final report. Moreover, a serious
attempt to specify precisely what I did prevented some problems of reliability from emerging.

3.6 Pilot study

The questionnaire and interview protocol were piloted by 5 teachers - three at my school and two from two other schools. Their suggestions led to a number of minor modifications relating to the layout of the questionnaire so that it would be more friendly-looking. Rephrasing some questions was also necessary. For example, Question 2 “I have been teaching English as a foreign language for” changed to “I have been teaching English in secondary education in Cyprus for”). Moreover, questions 29 (My students prefer the conventional classroom) and 30 (My students are pleased with the way I use the LR) were altered to “I think my students prefer … and I think my students are pleased …” as some of the teachers said that this is a view from the teacher about students and not how students themselves feel.

3.7 Ethical Considerations

Ethical issues may arise at any stage of the research process and need to be taken seriously. Serious academics “will be wary of spoiling the field, of closing doors to research, and of damaging the reputation of their profession”, (Punch, 1994, p. 94). For this reason, there are certain guidelines which should govern all kinds of research (Anderson, 1990). Indeed, the quality of the research will be enhanced if the researcher has navigated the ‘ethical minefield’ (Cohen et al. 2000, p. 49) successfully.

I placed a high level of importance on following all appropriate protocols prior to approaching the teachers themselves. Research stresses the importance of gaining access through a gatekeeper who can be the head of the department, the course coordinator or the principal of the school (Cresswell, 1998; Wrag, 1999). As a course coordinator myself and assistant principal doing a compulsory in-service course once a week organized by the Ministry of education and Culture for all new coordinators, I was
in frequent contact with other coordinators and assistant principals. This proved to be extremely helpful as they made contact with the rest of the teachers even easier.

3.8 Informed consent

Informed consent is not necessary in social research where no risk is involved. However, some guidelines for informed consent include an explanation of the procedures to be followed and their purposes, a description of the benefits to be expected and an instruction that the person is free to withdraw consent and to discontinue participation. (Cohen et al., 2000, p. 50-51). It seems, though, that being honest about the purpose of the study is a key underlying principle of ethical research. As Bell (1987, p. 42 cited in Cohen et al p. 53) notes, it is important for instance, to say that one is carrying out research as part of one’s degree course.

Although the nature of my research project in itself did not pose any major ethical problems, the procedures to be adopted and the possibility of publication could well have caused stress and harm. Therefore, I adopted a number of steps to prevent any such problems from arising. To ensure that teachers could make an informed consent as to whether or not to participate in the research, each blank questionnaire was accompanied by a consent form (Appendix E) and a cover letter (Appendix D) The consent form not only highlighted the voluntary participation of teachers but also their right to withdraw from the study at any time without giving reasons or being disadvantaged. In addition, the attached form provided assurances that responses would be treated confidentially and that anonymity would be preserved. The cover letter, among others, briefed teachers as to the purpose and benefits of the research (Cresswell, 1998, p. 115; Cohen et al., 2000, pp. 259-260), indicating how long it would take to complete it, set out how to return the questionnaire and thanked respondents in advance for their co-operation (Cohen et al., 2000, p. 260). Additionally, included in the questionnaire was a question asking respondents if they would be interested in a follow up interview. This required a simple √ to a yes or no box and those who responded yes were asked to leave their name and contact details. I then contacted them by phone to arrange a time for the interview.
In the present study, I conducted the interviews at the teachers’ convenience and I also tried to keep them as short as possible. Having piloted the interview I had a rough idea of how long it would take and the proposed duration of the interview was made known to the interviewees when I was inviting them to take part. I also made sure I did not over-run the time agreed. As all participants were native Greek speakers, interviews were conducted in Greek so as to involve minimal stress (as far as language-related stress is concerned). Having gained the participant’s consent in writing, I used a laptop computer for the recording. Once rapport had been established I asked the interviewees whether they would be interested in having me visit one of their classes and conduct a classroom observation.

Clearly, the most convenient approaches for professionals to put into effect are extensions or elaborations of what they would normally be doing anyway. This was not the case with the interviews conducted during teachers’ free time at school. Not only were they “intrusive” (Wallace, 1998 p. 47) but this may have also influenced the data. In terms of classroom observations, although teachers commented that this is what they would be doing anyway, asking me to allow them a rather long time to prepare their lesson might lead to a level of skepticism.

3.9 Summary

In this chapter, I have sought to describe the methodological design of the study. I have further clarified the set of fundamental beliefs I drew upon in terms of the research methodology explaining the rationale behind my decision to employ a qualitative approach. I also described the participants, the selection procedure and data collection methods. Finally, I discussed data-analysis and interpretation as well as limitations and ethical issues.
Chapter 4 - Findings

4.1 Introduction

The purpose of this study was to investigate the CALL use for English language teachers in secondary schools in Cyprus, EFL teacher’s beliefs about using technology in teaching, as well as the factors affecting CALL use in secondary schools. Quantitative and qualitative methods were used to achieve this purpose by conducting questionnaires, interviews and classroom observations. In this chapter I report on the findings drawn from the three data collection methods starting with some demographic details.

4.2 Teacher Demographic Information

4.2.1 Gender

Out of the 61 participants, 57 teachers indicated their gender, with 86% female and 14% male (see Error! Reference source not found.).

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Valid Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>8</td>
<td>13.1</td>
<td>14</td>
</tr>
<tr>
<td>F</td>
<td>49</td>
<td>80.3</td>
<td>86</td>
</tr>
<tr>
<td>missing</td>
<td>4</td>
<td>6.6</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.1 Gender

4.2.2 Teaching Experience

Participants in this study have extensive teaching experience. It is worth noticing that more than 80% of teachers have teaching experience of more than 11 years with 31% of them having been teaching English in secondary schools in Cyprus for more than 16 years. Table 4.2 illustrates participants’ teaching experience.

<table>
<thead>
<tr>
<th>Number of years experience</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Valid Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

75
4.2.3 Age

Among all the participants, there is only one teacher under 40 while 44% of those who responded are between forty-one and fifty while almost half of them (49%) are over fifty. Due to the fact that there are hardly any teachers of English in state schools in Cyprus under forty, it might be worth looking at whether age affects their use of computers which may have to do with the way they are employed by the government. As I have mentioned in Chapter One (section 1.4.2) in order to be appointed by the government in a state school the number one criteria is one’s age and not their academic qualifications or previous experience.

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Valid Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31-40</td>
<td>1</td>
<td>1.6</td>
<td>1.7</td>
</tr>
<tr>
<td>41-50</td>
<td>27</td>
<td>44.3</td>
<td>46.6</td>
</tr>
<tr>
<td>51+</td>
<td>30</td>
<td>49.2</td>
<td>51.7</td>
</tr>
<tr>
<td>missing</td>
<td>3</td>
<td>4.9</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.3 Age

4.2.4 Teachers’ Teaching Context

What is significant here is that the great majority of the participants are teaching in Upper Secondary schools which means that they have been provided with a LR and computers and other resources for a longer period than those in Lower Secondary schools. In fact, the LR was set up in Upper Secondary education ten years ago (in the year 2000) compared to half as many in Lower Secondary. To this date there are Lower secondary schools which do not have a LR as setting up this room in all schools has not as yet been completed.
Table 4.4 Type of School

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Valid Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Secondary (Gymnasium)</td>
<td>16</td>
<td>26.2</td>
<td>28.1</td>
</tr>
<tr>
<td>Upper Secondary (Lyceum)</td>
<td>41</td>
<td>67.2</td>
<td>71.9</td>
</tr>
<tr>
<td>missing</td>
<td>4</td>
<td>6.6</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.4 Type of School

4.2.5 Qualification

The results on Table 4.5 show that only 10% of the participants have an additional qualification to what is a prerequisite for English language teachers to be able to get a teaching position in secondary education in Cyprus. Thus the data may suggest that professional development is not among teachers’ high priorities or that teachers may lack incentives or reflection. This in turn is likely to influence teachers’ CALL use.

Table 4.5 Teachers’ academic qualifications

<table>
<thead>
<tr>
<th>Highest Academic Qualification</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Valid Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>53</td>
<td>86.9</td>
<td>89.8</td>
</tr>
<tr>
<td>MA</td>
<td>6</td>
<td>9.8</td>
<td>10.2</td>
</tr>
<tr>
<td>missing</td>
<td>2</td>
<td>3.3</td>
<td></td>
</tr>
</tbody>
</table>
4.2.6 Interview and Classroom Observation

Out of the 61 participants, 13 volunteered to participate in a follow-up interview and 9 of these 13 teachers also agreed to be observed in their classrooms. Teachers’ range of experience in teaching English varied from 6 years to more than 16 years. There was not much diversity among them in terms of age. By far the greatest majority of teachers were above 51 with three teachers being under 51 but above 41. The majority of teachers had a BA degree in English while one teacher had an MA degree and another had a PGCE. Two teachers taught in a Lower Secondary school and 11 taught in an Upper Secondary. 12 teachers were female and one teacher was male. All teachers who participated in classroom observation were female (see Appendix N for a summary of teacher profiles).

4.3 CALL use for English language teachers in secondary schools in Cyprus.

In order to depict how teachers use technology in their teaching, this section first deals with their environment for CALL, the available support, the provided training and how technology is used in classrooms.

4.3.1 CALL environment

Teachers in this study described the environment for CALL in EFL classrooms by considering the physical environment, the number of computers available, Internet connection in their schools and access to the LR, as well as what they would like to see done in their environment in terms of training and support so that they could employ technology effectively and on a more regular basis.

A number of questions were used both in the questionnaire and the interview. Table 4.6 shows that almost 99% of the respondents stated that they had a LR in their school, 93% of the respondents had computers available and 90% have an Internet connection.
Our school has the following facilities/IT tools available for the English classes:

<table>
<thead>
<tr>
<th>Facility</th>
<th>Responses</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Room</td>
<td>60</td>
<td>33.5%</td>
</tr>
<tr>
<td>Computers</td>
<td>57</td>
<td>31.8%</td>
</tr>
<tr>
<td>Laptops</td>
<td>6</td>
<td>3.4%</td>
</tr>
<tr>
<td>Internet</td>
<td>55</td>
<td>30.7%</td>
</tr>
<tr>
<td>Wireless Internet</td>
<td>1</td>
<td>.6%</td>
</tr>
</tbody>
</table>

Table 4.6 Availability of facilities

While the percentages shed light on one aspect of the CALL environment, this did not turn out to be the full picture. Qualitative data, as summarized in Table 4.7 below, illustrates that despite the high percentages in Table 4.6, the LR and the facilities/tools available for the English class did not really facilitate CALL and IT use. This is supported by the teachers’ responses to the interview question “Have you experienced any difficulties using CALL and IT in your teaching?” 11 interviewees stated that there were not enough computers in the LR, 10 of them mentioned the time factor, while 8 of them stressed the lack of Internet connection and 7 teachers stated what could be summarized in “technical problems”. All of the teachers who were interviewed and/or observed explained that due to the fact that technology equipment available for the English classes was only accessible in the LR and because this room had to be shared by all language teachers (Greek, French, Russian, Italian and Spanish), one might realize the difficulties facing an EFL teacher who wished to create a CALL environment.
Reported difficulties related to the environment for CALL in EFL classrooms

<table>
<thead>
<tr>
<th>Reported difficulties related to the environment for CALL in EFL classrooms</th>
<th>Interviews</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=13</td>
<td>N=9</td>
</tr>
<tr>
<td>Access to facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Facilities only available in <em>Language Room</em> (LR)</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>- LR shared by all language teachers/LR overbooked</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>- Location of LR inconvenient</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>- No projector in LR</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inadequate number of computers</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>- Low student-to-computer ratio</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>- Computers in LR not working</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Lack of Internet Access</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>- No Internet connection in LR</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>- No Internet connection in staffroom</td>
<td>3</td>
<td>___</td>
</tr>
</tbody>
</table>

Table 4.7 CALL environment

All teachers who participated in the interview appeared to adopt a critical stance when they reflected on the environment for CALL in their classrooms. ‘*Our LR is not suitable for 20 students, it has only got four computers, you need to be really lucky to get all four working, usually it’s just one or none,*’ Stalo explained. Chrysa, commented that she had to take her class to the computer lab one period a week explaining that:

‘*At the beginning of the year Internet connection in the Language Room seemed very distant but with the principal’s consent I made arrangements with the computer teacher, since the computer lab is meant to be used by computer...*’
teachers only, to get two of my classes in the computer lab one period a week. This started late last November”.

Nine teachers wondered whether they could use CALL with fewer computers than the number of students. As Andrie commented, “How can I possibly integrate technology when there is not even one computer for every five students? Another teacher (Vaso) remarked, “The computers in our LR are hardly ever working”. This was mentioned by three other teachers (Vana, Maria, Froso).

Observation data confirmed the difficulties faced by teachers in terms of CALL environment (see Table 4.7). Four out of the nine observations, showed that it was difficult for teachers to have access to CALL facilities, as even if the LR in their school were available there were not enough computers or there was no Internet connection. It is noteworthy that two of the observed teachers made special arrangements to take their classes to the computer lab (which is meant to be used by computer teachers only) and not the LR on the day the classroom observation took place which may be a further indication that not all EFL teachers are pleased with the available hardware and IT facilities in their institutions.

None of the teachers, in this study, however, questioned or rejected CALL altogether. Rather, they felt disappointed that they were not in a position to integrate technology more readily into their practices, five of them suggesting that more classrooms which are better-equipped would encourage more frequent CALL use. Alternatively, one teacher wanted students to bring their laptops to school.

Computer access

As was mentioned in Section 1.4.6, when computers were introduced as a teaching tool in all Upper Secondary schools (Lyceums), while up to twenty PCs were placed in the Typing and Technology classes of every Lyceum in Cyprus only “one to six computers were placed in rooms such as History and Languages” (Annual Report, 2010, p. 338, Ministry of Education and Culture). This suggests that in secondary education in Cyprus
languages including English are not taken as seriously or are not as highly valued as other school subjects.

The information in Table 4.8 shows that 60% of the respondents do not have access to the facilities/tools in their schools whenever they want while almost 40% do have access any time.

<table>
<thead>
<tr>
<th>I have access to the facilities/tools available in my school any time during the school day</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Valid Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>24</td>
<td>39.3</td>
<td>40</td>
</tr>
<tr>
<td>No</td>
<td>36</td>
<td>59</td>
<td>60</td>
</tr>
<tr>
<td>missing</td>
<td>1</td>
<td>1.6</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.8 Access to facilities

Qualitative data shows that while there are teachers who wish to use the facilities/tools available in their schools, accessing them can be a problem (See Table 4.7). Two lessons were conducted in the computer lab after the teachers had made special arrangements, while two other lessons were delayed due to difficulties in accessing facilities. One lesson was delayed due to the fact that there was no projector available in the LR, and the teacher had to fetch one from the principal’s office, while the other was delayed because of the LR being located far from other classrooms. Teachers having difficulties in accessing facilities were also supported by responses from the interviews such as the one from Yianna:

“One of the main difficulties I face is that in my school it is difficult to access the facilities available when I want to use them. Computers and Internet, for instance, are only available in the LR and accessing them is really a problem. The LR is located at one end of the school far from all other classrooms and when you are scheduled to have a class there you will get 5 minutes late if you have another
The data above show that an important consideration is the location of CALL equipment. If computer facilities are not easily accessible, teachers may be put off using them. On the other hand, the remark from one of the teachers (Zina), that despite the facilities in her school being always available she does not use computers because she does not have any computer skills, indicates that the mere accessibility to or availability of facilities do not seem to guarantee teachers’ use of CALL.

4.3.2 Support
As indicated in the Introduction to this chapter, where a 5 point Likert scale is used, 1 means ‘strongly disagree’ and 5 means ‘strongly agree’.

The information in Table 4.9 shows that teachers need support, guidance and resources whereas there is not enough support or computers to help them integrate CALL in their teaching. This is evidenced by the means of 3.9, 3.75, 3.75 and 3.57 of teachers’ replies to questions 35, 37, 39 and 40 respectively which indicate that teachers tend to agree with the statements which express their need for more support, guidance and resources. In effect, less than 30% (Appendix I) of the participants disagreed or strongly disagreed with those statements, which explains why the standard deviation is so high, varying from 1.147-1.325. Lack of guidance, support and resources is also indicated by the means of 1.8, 1.98 and 1.72 of the teachers’ responses to questions 36, 38 and 42 respectively. Teachers’ responses to these three statements (36, 38 and 42) seem to come as a reinforcement to show that teachers appear to disagree with the statements that express satisfaction with the available support, guidance and resources.
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>35. I need support in using computer software.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.9</td>
<td>1.121</td>
</tr>
<tr>
<td>36. I have guidance in using computers and IT at my school.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>1.8</td>
<td>0.917</td>
</tr>
<tr>
<td>37. I need guidance in using computers and IT in my teaching.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.75</td>
<td>1.22</td>
</tr>
<tr>
<td>38. I have support in using computers and IT in my teaching.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>1.98</td>
<td>1.147</td>
</tr>
<tr>
<td>39. I need support in using computers and IT in my teaching.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.75</td>
<td>1.325</td>
</tr>
<tr>
<td>40. There is a lack of resources at my school.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.57</td>
<td>1.147</td>
</tr>
<tr>
<td>41. I can handle most of the technical problems by myself</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>2.25</td>
<td>1.206</td>
</tr>
<tr>
<td>42. There is an adequate number of computers for my students</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>1.72</td>
<td>1.002</td>
</tr>
<tr>
<td>43. There is always help available if I need it.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>2.16</td>
<td>1.293</td>
</tr>
</tbody>
</table>

**Table 4.9 Support for CALL (Quantitative Data)**

The data here also show that only a small percentage (13%) of teachers can handle technical problems by themselves, whereas only 15% agree that there is always help available if they need it (Appendix J).

Further evidence is given by the qualitative data summarized in Table 4.10. All interviewed teachers felt that English language teacher educators and inspectors of English were unable to provide support or guidance in CALL use. Nicos’s remark that
‘our inspectors and teacher educators push for technology but I don’t really think they want or are able to provide us with answers to the problems we’re facing regarding technology use’ seemed to echo the views of all interviewed teachers in this study.

<table>
<thead>
<tr>
<th>Support for CALL in EFL classrooms</th>
<th>Interviews</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=13</td>
<td>N=9</td>
</tr>
<tr>
<td>Available support inadequate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Inspectors and teacher educators not in a position to provide guidance</td>
<td>13</td>
<td>___</td>
</tr>
<tr>
<td>- Lack of pedagogical support</td>
<td>5</td>
<td>___</td>
</tr>
<tr>
<td>- Schools not supportive enough</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>- Lack of communication/collaboration with colleagues</td>
<td>6</td>
<td>___</td>
</tr>
<tr>
<td>- Lack of supplementary material to match textbook</td>
<td>6</td>
<td>___</td>
</tr>
<tr>
<td>Technical support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Computer teacher in charge of technology equipment not always available</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>- Computers breaking down</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>- Internet failure</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Lack of Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Lack of computers</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>- Lack of Internet connection</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>- No projector</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4.10 Support for CALL (Qualitative Data)
Due to the inadequate number of computers in the LR and the risk of some being permanently out of order, as mentioned earlier, two of the teachers who took part in classroom observation conducted their classes in the computer lab after obtaining permission from the school principal and making special arrangements with a computer teacher.

Teachers’ responses to the interview question 13 (At the institution where you teach, is there support for teachers wishing to use technology in English language teaching? What type of support?) came as an additional indication that teachers feel that the available support is not enough at all. “I have to spend so much time to find a place with enough computers … it makes you wonder whether it’s worth it” Stalo commented. Indeed, eight teachers stated that there is a lack of resources in their schools and a lack of technical and human support while five teachers stated that there is not enough pedagogical guidance.

It should be noted that since the introduction of computers in schools, a computer teacher in each school is allocated one to two periods a week (depending on the size of the school) to attend to technical problems. The data show that teachers find that having to depend on one colleague can be frustrating. Seven of the teachers who were interviewed commented that having to depend on one colleague can be so embarrassing and time-consuming that it makes them feel like a ‘burden’. Ellie’s comment below is representative of how teachers view the available support in their institutions:

“It’s embarrassing and time consuming when you have to chase this colleague around the school to get help…and the feeling is even worse when you have to do this more than once during the day…in the end you just come to terms with the fact that perhaps it’s better not to use computers at all”.

Seven interviewees stated that they feel uncomfortable when something stops working in the middle of a class and “there is chaos” They stressed how frustrating it is and how embarrassed they feel to go and ask their colleague who is in charge of the technology equipment in their school for help. Indeed, classroom observation indicated that lack of
support and technical problems can cause frustration to teachers. Failure to get assistance from her colleague in charge of technical problems caused disruption to the lesson, and as a result the teacher (Ellie) appeared to be experiencing feelings of anxiety and frustration. The data suggest that teachers need training to handle technical problems themselves rather than ‘Getting student help, which is what our inspectors want us to do’, as Yianna stated. Another teacher, Rina, commented:

“You don’t always have students in your classes who can handle all technical problems…and the support we need does not always have to do with technical problems…it is us who need to know how to integrate computers and teach students and not the other way around’.

From this response, it would appear that teachers have a desire to integrate CALL into their classes, but they seem to need support to enable them to actually make this happen.

When asked interview question 14 “What kind of support they would like to see made available?’ teachers’ comments and suggestions in relation to support, were shared by the majority of the participants and these were grouped into the following two categories:

- Training (technical, pedagogical and human support such as communication and collaboration with colleagues)
- Resources (computers, internet connection, supplementary material to match textbook).

Similarly, four teachers (Stalo, Chrysa, Maria, Vana) stressed the importance of having all the classrooms and the staff room equipped with computers, or at least being able to connect to the Internet in all the classrooms and the staff room. This, they explained, would eliminate the problem of having to share the facilities with so many other teachers. They emphasized that it would help to save time, provide them with more opportunities for personal use of the technology, which would help them become more confident in using it in their classroom practices. This was supported further by
classroom observation as in four of the observed lessons, lack of resources such as Internet connection and inadequate number of computers appeared to be major hindering factors. In addition, six out of the nine observed lessons indicated that teachers appeared to need pedagogical guidance in incorporating technology as these lessons were primarily teacher-centred.

The data above indicate teachers' dissatisfaction with the available support regarding technology use and reveal a great need for teachers to acquire both technical and pedagogical skills and to be provided with easy access to the required resources.

4.3.3 Training

Table 4.11 shows the teachers' responses with regard to their in-service training in IT. The crucial role of language teacher education, and the qualities that a teacher educator should have, also come into play. The results here are widely dispersed. It is worth noticing the small number of teachers who agree with statements 32 and 34 with mean answers 2.2 and 2.08 and a standard deviation of 1.323 and 1.109 respectively. This means that teachers, on average feel that they do not have knowledge about information technology and there is general agreement that they have not received teacher training using computers or learned how to use technology through in-service training. In fact, the statistical results (Appendix K) show that only 16% of those who responded to item 32 agree with the corresponding statement while only 12% of them agree with statement 34. The lack of in-service training in technology is also highlighted by their responses to question 33, while CALL use requires teachers who are not only competent with the programmes being used but who are also aware of the pedagogical and curricular reasons for using them.
<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.</td>
<td>I have little or no knowledge of information technology in education.</td>
<td>61</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>32.</td>
<td>I have received teacher training using computers/ICT in English language teaching.</td>
<td>59</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>33.</td>
<td>There are in-service workshops or seminars on technology use available which I can attend.</td>
<td>60</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>34.</td>
<td>I learned how to use technology through in-service courses.</td>
<td>60</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

**Table 4.11 Training (Quantitative Data)**

The data on Table 4.11 is reinforced even further by the interview and classroom observations. Teachers’ replies to the questions “How did you start using technology in your classroom?” and “Has anyone ever talked to you about it or have you read something about it?” included,

‘I learned on my own. I also got help from my children” (Ellie).

“I attended a few compulsory two-hour in-service seminars spread out over a period of three years after the introduction of computers – but they weren’t very useful. The inspectors just led us into a discussion about the benefits of the Language Room. Noone wanted to know about our concerns” (Yiola).

‘During our pre-service course we were told about the computers in the Language Room but had only one session on technology. On that day we were working in groups of six and were asked to do something on the computer. One of us who had previous experience with computers carried
The interview data which reveals teachers’ lack of training and lack of knowledge, is summarized in Table 4.12 below.

<table>
<thead>
<tr>
<th>Training for EFL teachers</th>
<th>Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=13</td>
</tr>
<tr>
<td>Lack of training</td>
<td></td>
</tr>
<tr>
<td>- In-service training not responsive to teachers needs</td>
<td>13</td>
</tr>
<tr>
<td>- Lack of training in generic computer skills</td>
<td>5</td>
</tr>
<tr>
<td>- Lack of training in pedagogical skills</td>
<td>7</td>
</tr>
<tr>
<td>- Lack of training in technical skills</td>
<td>8</td>
</tr>
<tr>
<td>Little knowledge about CALL</td>
<td></td>
</tr>
<tr>
<td>- Never read anything about using technology in classroom</td>
<td>10</td>
</tr>
<tr>
<td>- Teachers learned from family members</td>
<td>5</td>
</tr>
<tr>
<td>- Never seen the term “CALL” before</td>
<td>3</td>
</tr>
<tr>
<td>- Teachers learned on their own</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4.12 Training (Qualitative Data)

Of the 13 interviewed teachers, 10 commented that they had never read anything about using technology in the classroom while all of them felt that the available in-service training was not really what they needed and wished for ongoing in-service training programmes in computer skills and appropriate teaching e-learning materials. Eight teachers commented that the Ministry has to find a way to teach them how to integrate...
computer technology and it ‘has to take place at school’ because ‘they have no time in the afternoons’, as Rina explained. From these responses, it would appear that teachers felt the pressure on time keenly as a constraint on their professional development. Two felt the need for replacing or adapting textbooks so that the textbook itself would help them “to integrate technology more naturally” as Ellie added. One teacher (Vana) said that even if the ministry did not have the budget to provide them with the kind of CALL training they personally needed, the ministry should at least provide them with information on CALL programmes available in Cyprus and she would be more than happy to attend in her own time. The four teachers (Nicos, Zina, Yiola and Froso) who were interviewed, but did not take part in classroom observation, felt that age can act as a deterrent to technology use. They also mentioned the failure of the ministry to provide them with training that met their individual needs. They suggested that the inspectors of English should first organize in-service training programmes in generic computer skills, including word-processing and Internet searches for those who needed them, and then train them in how to use technology as an instructional component in their classroom practices.

It would appear that teachers are not even sure whether there are in-service workshops or seminars which they can attend. Teachers may feel this way either because such programmes are rare or they know that even if there are in-service workshops or seminars not everybody can attend as there is a selection procedure which is not always transparent. As Chrysa explained, “I applied for the second part of the ICT seminar since I had attended the first part (see My Teaching Context Section 1.4.5) but I got rejected as there was a limited number of places”.

However, even this limited provision of in-service training in ICT seems to have had an impact on teachers. It helped both Chrysa and Stalo to realize the potential of ICT; in deed, Chrysa “was intrigued by the web 2.0 tools’ and Stalo’s eyes “were opened by the seminar”, she stated. As a result, they were both determined to implement more technology in their classrooms. Both, however, felt the need for follow-up sessions.

It seems clear that for most teachers neither the amount nor the type of the provided in-service training can meet their individual needs. While there are about 500 EFL
teachers employed in public secondary schools in Cyprus, the aforementioned course in ICT was only available to 35 of them (see My teaching Context in Chapter one). Indeed, where teachers were commenting on the kind of support they’d like to see made available (Interview question 14) training was one of the things mentioned by all of them. The importance that teachers placed on training was also highlighted when they were asked to talk about the reasons why they used/didn’t use computers (Interview question 4) as well as when they talked about the disadvantages (Interview question 8) and difficulties they experienced in using CALL and IT in their teaching (Interview question 10). When Zina was answering the question, “Why did you use/didn’t use computers in your teaching?” admitted that, “I don’t use computers in my teaching because I don’t have any computer skills…it’s a shame because the facilities in my school are always available. I wish I had time to learn”.

Similarly, when commenting on the disadvantages and the difficulties of CALL and IT, five teachers noted that a CALL lesson is different, and more difficult than other ELT lessons as it requires of them skills which they lack. They also considered the lack of homogeneity of students to be an additional obstacle, as reflected in Vaso’s comment:

As you know nearly all of our students take English classes privately (frontistiria) and they start at any age they wish so by the time they end up in one of our classes they have been learning English for a different number of years and their English language proficiency levels are so varied”.

This suggests that teachers have difficulties in using technology for differentiated instruction to foster personalized, individualized learning.

Two of the teachers who were interviewed but not observed (Yiola and Froso) indicated that not having any computer skills at all put them “in a vicious circle” that held them back from applying for a seminar on technology integration for fear of experiencing embarrassment and anxiety. This does not imply that these teachers are indifferent or reluctant to learn how to use computers, but that they fear that it is difficult and even embarrassing to attempt to catch up with their more advanced colleagues. The data
suggest that differentiated training which has each teacher’s individual needs and concerns as a starting point could help teachers develop the required skills.

All the teachers appeared to agree that it would be very useful if they could observe other colleagues, the inspectors or teacher educators using computers in real classrooms or participate in training in actual classrooms, so that they would be able to apply what they had learned in their classrooms. The lack of collaboration among colleagues was raised by three teachers in three different schools who seemed to agree that EFL teachers in their school did not seem to make the most of the weekly coordination sessions which could be used to share ideas on computer use. The data suggests that while situated learning can be very useful, this study has shown that participants differed in opinion as to how well they were able to apply what they had learned in their own practice. This was made clear by Stalo and Chrysa who attended the same four-day-training seminar in ICT in the language classroom. While Chrysa, as she explained, went away and by following the course trainer’s tips, who was a CALL specialist, she managed to set up a wiki but also to find tools which made her class wiki more interesting, Stalo said that

“When you are there you do things in groups, you get help from others. When you get back to school on Monday morning it can be a nightmare and you feel even more incompetent. Personally, becoming aware of the potential of computers/IT, hearing about all those amazing things like twitter, wikis, blogs and so on as soon as the four-day seminar was over I thought I’d go back in September and revolutionise the whole world. Before long, though, I felt as if I was making a pretty rough landing. I found myself doing exactly the same things as before. I felt so guilty…anxious…insecure…starting something in class and not knowing whether you will be able to complete it…now I feel as if I’m stuck in the middle of the ocean…what I need is individualized assistance and guidance, not for ever perhaps for a few weeks until I am able to create a blog or a wiki for example”.

The data also suggest that CALL use can be influenced by teachers’ previous experience with computers as well as teachers’ personality. Chrysa's previous Excel and Access experience which “came in handy” as she said, along with her confidence in
“following the summer course trainer’s tips and links and trying to do things on [my]her own” caused her to make special arrangements and ensure access to the Internet even if this was not possible in the LR.

Teachers’ suggestions as to the kind of training and support they would like to see made available are summarized in Table 4.13 below:

<table>
<thead>
<tr>
<th>What kind of support would you like to see made available?</th>
<th>Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=13</td>
</tr>
<tr>
<td>Training</td>
<td></td>
</tr>
<tr>
<td>- On-site ongoing in-service training programmes</td>
<td>13</td>
</tr>
<tr>
<td>- On-site training during school hours/Peer observation</td>
<td>8</td>
</tr>
<tr>
<td>- Training in technical skills</td>
<td>7</td>
</tr>
<tr>
<td>- Training in pedagogical skills (e.g. how to promote individualized learning and collaborative learning)</td>
<td>7</td>
</tr>
<tr>
<td>- Technical support</td>
<td>7</td>
</tr>
<tr>
<td>- Human support (e.g. communication and collaboration with colleagues)</td>
<td>4</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
</tr>
<tr>
<td>- Better-equipped classrooms</td>
<td>5</td>
</tr>
<tr>
<td>- Internet connection in all classrooms</td>
<td>5</td>
</tr>
<tr>
<td>- Computers and Internet connection in staffroom</td>
<td>5</td>
</tr>
</tbody>
</table>
The data clearly show, that teachers need in-service training in CALL and CALL facilities readily available. It further indicates that training needs to be adapted to individual teachers' needs and take place, preferably, during school hours. When teachers see the valuable contribution that technology can make to their teaching, and the school environment facilitates CALL use, it is more likely that they will be inspired to experiment with new methods and new materials. To cause this to occur, the study shows that training must be continuous, providing teachers with follow-up sessions; otherwise, teachers may end up sharing Stalo’s feelings of incompetence and guilt. Thus, the crucial role of language teacher education and the qualities that a teacher educator should have are brought into play again.
4.3.4 CALL use

Table 4.14 shows that the CD player (97%), the computer (72%) and the tape recorder (70%) are the top three technologies teachers use.

<table>
<thead>
<tr>
<th>What equipment do you use?</th>
<th>N</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tape recorder</td>
<td>42</td>
<td>70</td>
</tr>
<tr>
<td>CD player</td>
<td>58</td>
<td>96.7</td>
</tr>
<tr>
<td>Television</td>
<td>29</td>
<td>48.3</td>
</tr>
<tr>
<td>Computer</td>
<td>43</td>
<td>71.7</td>
</tr>
<tr>
<td>video projector</td>
<td>10</td>
<td>16.7</td>
</tr>
<tr>
<td>overhead projector</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 4.14 Equipment used in the EFL Classroom

The results obtained from the qualitative data came to illuminate the picture that teachers created when responding to the above question (What equipment do you use?). As the interviews revealed, teachers claimed computer use even if they only made occasional use of it, if they hadn’t used it for the last 1 or 2 years or even if they had used it just once in their school life. Yianna, for instance, stated that “I don’t use computers this year because now I only teach third year students who are taking the final exams I mean the Pancyprian exams and we don’t have time for that” implying perhaps that computers are not meant to be used when time is pressing or when there are curricular objectives to be achieved. However, this study did not provide teachers with a timeframe, which suggests that the occasional, infrequent use of technology
mentioned by teachers to the interview question “Have you ever used computers in your teaching” does not constitute a contradiction.

The use of technology can also be seen on Table 4.15 which shows that on average teachers do not seem to use the LR often. Indeed, 30% of them use the LR for just once a week while 41% for 2-3 periods a week with 5% of them never using it.

<table>
<thead>
<tr>
<th>How often do you go into the language room?</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Valid Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>3</td>
<td>4.9</td>
<td>5.4</td>
</tr>
<tr>
<td>1 period (45&quot;) a week</td>
<td>17</td>
<td>27.9</td>
<td>30.4</td>
</tr>
<tr>
<td>2-3 periods a week</td>
<td>23</td>
<td>37.7</td>
<td>41.1</td>
</tr>
<tr>
<td>4-6 periods a week</td>
<td>7</td>
<td>11.5</td>
<td>12.5</td>
</tr>
<tr>
<td>more than 6 periods a week</td>
<td>6</td>
<td>9.8</td>
<td>10.7</td>
</tr>
<tr>
<td>missing</td>
<td>5</td>
<td>8.2</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.15 Frequency in using the Language Room

Given that teachers in this study taught English from 14-24 periods a week, it is interesting to note that although 40% of the respondents replied positively to the statement “I have access to the facilities/tools available in my school any time during the school day” (see Table 4.8), only 10% used the LR for more than six times a week, while half as many never did so. Although frequency is arguably less crucial than how technology is used, the data suggests that low access to computers may result in low integration.
As previously mentioned (see section 1.4.6), the LR, which is the home of the computers and other resources available for the EFL teachers, is shared by all the other language teachers namely teachers of Greek, French, Russian, German, Italian, Spanish and Turkish. Maria, the teacher who had her students write word grids to revise vocabulary and post them in their class blog during the classroom observation, note as follows:

“It’s really frustrating… we created a blog with one of my classes but in order to get all students have a chance to post their word grids… some students do not have an Internet connection at home it will take months because we are scheduled to use the LR once a week although we have English four periods a week. Some students will probably ask their computer teacher to let them use the computer lab during breaks so that they can post their word grids before the end of term”.

The occasional, infrequent use of technology by teachers is also made obvious by replies to the interview question “Have you ever used computers in your teaching” such as the reply from one teacher “I haven’t used them this year” and from another teacher “I only used them on two occasions when I was being observed and assessed by the inspector”. This was also reinforced by the responses from three teachers, namely that they did not use them on a regular basis and four others, that they never used them. This may suggest that overbooking can act as an additional obstacle to technology use, at least in some schools but also that computers may be used by teachers in order to make an impression rather than to promote learning.

Table 4.16 shows that 92% of the teachers claim Internet use, with Word processing and Power point presentations scoring 63% and 45% respectively.
<table>
<thead>
<tr>
<th>What do you use the computer for?</th>
<th>N</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word processing</td>
<td>32</td>
<td>62.7</td>
</tr>
<tr>
<td>Power Point presentations</td>
<td>23</td>
<td>45.1</td>
</tr>
<tr>
<td>Internet</td>
<td>47</td>
<td>92.2</td>
</tr>
<tr>
<td>listening material documentaries</td>
<td>7</td>
<td>13.7</td>
</tr>
<tr>
<td>Youtube</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4.16 Ways of Computer Use

It should be noted that information from the interview and observations shows that teachers who stated that they use the Internet in their teaching may have only asked their students to find information on the Internet at home, or another colleague may have shared with them a picture or a text from the Internet.

When required to “describe a way that explains how you would use CALL and IT in your classroom” and the question “Have you ever used computers in your teaching? In what ways?” teachers’ replies were quite revealing. Eight teachers reported word processing to prepare a worksheet and write their tests, while 6 of them mentioned power pointing. Although Vaso claimed acknowledgement of CALL, she seemed to be using computers to teach in almost exactly the same manner as before. She commented that for the last two years, her most frequent use is word processing to write a test but she also uses “a powerpoint slide show to present grammar because it is a lot easier than writing on the board. You save time because you only prepare the same slide show once and you can use it year after year with all your classes.”

Stalo explained that on occasions, she prepares a power point presentation on a topic that she thought her students would find interesting and useful. During the classroom observation Stalo delivered a ten-minute power point presentation on the Olympic
Games. She then gave her class a website and students had twenty minutes to search for the answers to a number of questions she had on the last slide of her presentation. The remaining fifteen minutes were spent discussing their answers with the teacher.

As Zina (one of the participants who were interviewed but not observed) commented, “I don’t know how to use a computer at all. When I was answering the questionnaire, though, I stated that I do use the Internet because I have used Internet material that was given to me by another colleague”. This is reinforced by Andrie, one of those who took part in classroom observation, “I have no idea how to search the Internet for extra material or do a power point presentation but some of my students do … I sometimes ask them to find information on one of the topics we come across in our books and present it in class”. Indeed, when her class was observed, the lesson was conducted by two students who had worked together to produce a power point presentation on Egypt which they presented to the rest of the class. This was an example of student use of technology in class, which was not included in the questionnaire but was reflected through observation.

The information in Table 4.17 below, confirms that searching the Internet for teaching purposes is way ahead with word-processing and power point presentations scoring high. However, while by far the greatest majority of the respondents claim Internet use, they appear to be ignoring the existence of web 2.0 tools, except for three teachers. This may suggest that when teachers use the Internet for teaching purposes, it is relatively unlikely that they will use these tools, and this constitutes a further indication that searching the Internet for teaching purposes mainly involves finding information to supplement the textbook.
Table 4.17 Ways of Internet Use

The potential of the Internet not only to access resources but also to put their own materials on line does not seem to be acknowledged by the majority of the teachers. The interviews and observations (see Table 4.18) come in again to show that by “using the Internet for teaching purposes” teachers mean that they search the Internet for additional information to supplement the textbook, or “to prepare a lesson such as a reading text to use in a reading comprehension test, or a youtube video or a song”. When asked in the interview to give possible ways of Internet use, many of the teachers’ responses indicated, the limited use they make of the web and on the other hand, their ignorance about the existence of web 2.0 tools and generally the potential of the Internet in EFL teaching. “I use it to download Youtube videos to get my students more motivated and I also find reading passages that I adapt and use in tests” explained Vana. Five other teachers note that they sometimes used a short video from Youtube for motivation which is supported further by classroom observations. When I observed Vana’s class, this teacher played a Youtube video on deserts which students had to watch and answer questions on the answer sheet she had prepared for them.
Ellie also played a Youtube video of a song that appeared (as a listening activity) in the textbook. The students then, carried on with activities on the song that were provided in their textbook.

<table>
<thead>
<tr>
<th>CALL use in the EFL classroom</th>
<th>Interviews</th>
<th>Observations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=13</td>
<td>N=9</td>
<td></td>
</tr>
<tr>
<td>Searching Internet for teaching purposes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- For additional information to supplement/reinforce textbook</td>
<td>9</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>- To download short Youtube videos/ songs</td>
<td>7</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>- To find reading passages to adapt and use in tests</td>
<td>6</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>__</td>
<td></td>
</tr>
<tr>
<td>Wordprocessing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- To prepare worksheets for students</td>
<td>8</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>__</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>__</td>
<td></td>
</tr>
<tr>
<td>Power point presentations by teacher</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Power point presentations by students</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Web 2.0 tools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Blogs</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.18 CALL use

In seeking to integrate CALL, the creation of a suitable learning environment is a *sine qua non* (McCarthy, 1999). During the seven classroom observations that I carried out in Upper Secondary Schools and two in Lower Secondary, it was evident that in 4 cases, teachers used handouts to supplement the textbook material, and technology was used as supplementary rather than central to the learning process. In two of the
classroom observations, however, the environment provided students with opportunities to learn by doing things themselves, and indeed experience what would otherwise not be available to them. In Maria’s class students posted their word grids in their class blog, and the teacher seemed to have created an atmosphere with a low anxiety level as well as one that promoted learner autonomy. In Chrysa’s class, two pairs of students played the advertisement each pair had made using MovieMaker. The remaining students in the class, after forming groups of four, were given an evaluation sheet prepared by the students who had produced the corresponding advertisement, and were asked to use it to evaluate the advertisement they had watched. Chrysa also seemed to have created an environment which provided students with opportunities for interaction and an atmosphere with a low anxiety level as well as one that promoted learner autonomy and cooperation. Nonetheless, it must be indicated that despite the fact that the students in this class used the target language to cooperate, develop their critical thinking and in a way solve a problem not unique to the EFL class, computer technology was only used directly by the four students who had made the two advertisements.

However, in three of the classes I observed, the classroom environment was far from being interactive or collaborative; computers were, indeed, used by the teacher to conduct a traditional teacher-centred lesson (power point presentation presenting grammatical rules or a slide show with information about a topic in the textbook). Four further teachers used the technology to make the lesson more interesting and more motivating (using a Youtube video). Nonetheless, I do not think it could be claimed that the learning environment provided every learner with a variety of opportunities for communication or genuine problem solving. If the environment in a CALL class reflects real language use and life in general, then most of the classes observed in this study seem to have failed to create such a complex environment.

Overall, the results indicate that while Internet use directly with students in the classroom was very limited, teachers wished to use Internet-based materials and activities in their classrooms more but lacked Internet literacy training. This is reflected in Maria’s comments that when she saw how keen her students were on having a blog
for their class, she first asked her daughter to help her create one as she had “no idea what a blog is leave alone how to create one” she admitted. She added that

“although my students were more than willing to help I wanted to know how to do it before asking my students for help. I hated the idea of being so ignorant in front of my students and in a way being exposed in front of them. I wanted them to know that I was there to provide them with the best available learning opportunities. I knew, though that this was just not possible . I did not have the knowledge to do that. And I feel …. not just sorry about it but … I don't know… I feel frustrated that I lack the knowledge, the training to do that”.

Table 4.19 below shows that by far the greatest majority of teachers ask students to do homework using a computer but the frequency in which they do this is unknown.

<table>
<thead>
<tr>
<th>Do you ever ask students to do homework?</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Valid Percentage (%)</th>
<th>Cumulative Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>44</td>
<td>72.1</td>
<td>72.1</td>
<td>72.1</td>
</tr>
<tr>
<td>No</td>
<td>17</td>
<td>27.9</td>
<td>27.9</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.19 Homework with Computers

Although teachers tend to feel that students’ motivation increases with computers, they do not seem to believe that technology causes students to be more inclined to do homework. Six teachers explained that they sometimes do assign homework which needs computer technology like searching the Internet for information but “not very often because most students do not have time”. This could be attributable to the pressure that more affluent families place on their children to succeed in modern Cypriot society through taking private specialized tuition in addition to regular class hours (see section 1.4.3). It may also suggest that there is a gap between what teachers do or want to do with computers in class and what students really need. The teachers who taught in Lower Secondary pointed out that their students’ limited competence in English discouraged them from assigning homework with computers
and from trying to use computer technology in the classroom. There was clearly a tendency to associate homework with searching the Internet for information. This seems to have caused teachers in Lower Secondary schools to feel that their students lacked the proficiency required to “read and understand all that information on the Internet” as Rina explained, and those teaching in Upper Secondary to feel that their students did not have enough time to do this.

Three teachers (Yianna, Rina and Yiola) stated that computer and Internet use must not be restricted to the classroom, and added that students do not have an Internet access at home so they did not ask them to do homework using a computer very often. This may be more applicable to those who attend a rural school. Three other teachers commented that they did not do this often, because this kind of homework was usually done by fewer students. They explained that although students, being one generation, younger, may use a computer as an everyday activity, this is usually for entertainment as they do not seem to know how to use a computer for school related learning activities. “…especially when they have to do a power point presentation… it’s always the same students… also students tend to just copy paste what they find” Yiola noted.

Nicos pointed out that “despite the endless authentic information available on the Internet, information is not knowledge” and he is very careful when it comes to homework using computer technology as students tend to ‘cheat’ he said. What is suggested here is that students may not have the skills required to use technology for English language learning. It may even be suggested that teachers do not believe that students know how to use computers for learning.

To sum up this section on CALL use, it seems clear that despite the unsatisfactory environment for CALL in EFL classrooms in Cyprus, the low access to computers, the lack of support (human and technical) and lack of resources, the inadequate and inappropriate training, teachers have a desire to use computers in their teaching. However, teachers’ reported computer use could be summarized in “word processing, “searching the Internet for information to supplement the textbook”, “powerpointing by the students or the teacher” and “downloading youtube videos”. The above uses,
together with setting up a wiki and creating a blog, indicate that despite the difficulties, the Internet is gradually and increasingly becoming more popular.

4.4 EFL teachers’ beliefs about using technology in teaching

A number of questions were used both in the questionnaire and the interview to investigate teachers’ beliefs about using technology in teaching. The overall result is presented in Table 4.20.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. I feel comfortable teaching my classes in the Language Room.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.46</td>
<td>1.119</td>
</tr>
<tr>
<td>16. It is very important to use computers/IT in my teaching.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.7</td>
<td>0.962</td>
</tr>
<tr>
<td>17. It always worries me that something will break down.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.33</td>
<td>0.995</td>
</tr>
<tr>
<td>18. Technology (computers/IT) positively affects student learning.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.75</td>
<td>0.925</td>
</tr>
<tr>
<td>19. I prefer teaching in the conventional classroom.</td>
<td>59</td>
<td>1</td>
<td>5</td>
<td>3.08</td>
<td>1.039</td>
</tr>
<tr>
<td>20. Computers/IT have affected the way I use materials.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.36</td>
<td>0.949</td>
</tr>
<tr>
<td>21. Computers/IT have affected the way I use activities.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.3</td>
<td>0.926</td>
</tr>
<tr>
<td>22. As a teacher I feel threatened by technology (computers/IT).</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.65</td>
<td>1.246</td>
</tr>
<tr>
<td>23. Computers/IT have improved my class presentation.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.3</td>
<td>1.154</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. I use the Internet searching information that I need for teaching.</td>
<td>61 1 5 3.89 1.156</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Computers/IT improve language skills.</td>
<td>61 1 5 4.16 0.757</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. As a teacher I welcome the introduction of computers/IT.</td>
<td>61 3 5 4.43 0.618</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. I believe that students enjoy classes more in the Language Room.</td>
<td>61 1 5 3.9 0.907</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Technology makes learning more motivating.</td>
<td>61 2 5 4.3 0.803</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. I think my students prefer the conventional classroom.</td>
<td>61 1 5 2.36 1.065</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. I think my students are pleased with the way I use the Language Room.</td>
<td>59 1 5 3.07 0.998</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.20 Teachers’ beliefs (Quantitative Data)

The overall impression that one obtains from the data in Table 4.20 is that teachers’ responses are widely dispersed with the exception of item 26 where none of the participants disagrees with the statement and item 28 where none of them strongly disagrees. Teachers do not seem to feel threatened (item 22) but rather they welcome the introduction of computers in education (item 26) with a mean of 4.43 and a standard deviation of 0.618. This shows how concentrated and bunched up the scores around the mean are, suggesting that teachers are generally positive towards the introduction of computers. In addition, there seems to be consensus about the role of computers/IT in teaching. In fact, by far the greatest majority express their acknowledgement of the importance of computers/IT in their teaching (item 16) with mean answers of 3.7. In other words, the quantitative data show that teachers seem to welcome their
introduction and they tend to believe that technology has a positive impact on student learning.

This is supported further by the interview data shown in Table 4.21.

<table>
<thead>
<tr>
<th>Teachers’ beliefs about CALL use in the EFL classroom</th>
<th>Interviews</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire to use CALL</td>
<td>13</td>
<td>- Importance of technology in EFL class</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Motivational aspect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Creation of unique classroom opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Enhanced student learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Authentic use of language</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Not using CALL puts teachers at a disadvantageous position</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teachers’ beliefs about students</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Student attitude</td>
<td>5</td>
<td>- Students not taking EFL lesson with computers seriously</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Students associating computers with entertainment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Students not knowing how to use technology for learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Students being more familiar with technology than teachers</td>
</tr>
</tbody>
</table>

Table 4.21 Teachers’ beliefs (Qualitative Data)

Teachers’ responses to the interview questions “How do you see the role of the Internet in the English language classroom” and “How important do you feel it is to use
technology in English language teaching” did not reflect their descriptions of what CALL meant to them. Teachers felt that the role of the Internet was “very important”, “cannot be ignored ” “more important in the English class than in other subjects”, “the Internet is unique – it provides students and the teacher with information that you cannot find anywhere else,’ “It opens up a window to the rest of the world- it creates unique opportunities for authentic use of the language.” Their comments about the importance of using technology included the following:

‘Very important. I would very much like to be able to use computers. I would be happier if the materials I use and the activities I use were more computer related. I’m not sure if technology enhances learning but I know that teachers who can use computers can motivate their students more easily…I think that in the end students will learn more because motivation enhances learning’(Andrie).

‘I think that we cannot deny the importance of computers and not using them in the English class is not an option anymore. Not being able to use computer technology has put me at a disadvantage with my colleagues. I even avoid applying for any sort of seminar that may interest me for fear that it will be required of us to use a computer’(Froso).

‘It is very important to use computers in teaching… I feel I am in a disadvantaged position. It would give me a lot of satisfaction if I could use computers and the Internet in class…we don’t have a choice anyway…it’s not something that can be ignored’(Zina).

From these comments, it would appear, that there is clearly a desire to learn to use computer related technology. This is noteworthy, as the data from this study show that on the one hand, teachers have little knowledge about CALL and on the other hand, they appear to believe that their students’ attitude does not seem to facilitate CALL use.

Teachers’ responses to question 17 (It always worries me that something will break down) indicate their concerns about equipment breaking down in a lesson, which may
act as an additional barrier to CALL use. Teachers’ fear of things going wrong may be an indication of teachers’ lack of confidence. If this is the case, then teachers’ replies to question 17 seem to contradict their answers to question 15 (I feel comfortable teaching my classes in the Language Room). Even so, there seems to be an explanation to this contradiction as teachers may indeed feel comfortable teaching their classes in the LR for reasons which have little to do with technology. Teachers, for instance, may like the environment in the LR - arrangement of desks, the carpet flooring etc. What is also unclear is whether teachers think that their students are pleased with the way they use the LR (questionnaire item 30) which may suggest that teachers feel that their students expect more technology use from them.

It is noteworthy, that while teachers responded favourably to the introduction of computer technology, acknowledging its potential particularly its motivational aspect, the opportunity provided by the LR to use computers in teaching did not seem to have a positive impact on the majority of the teachers. In fact, responses to question 19 (I prefer teaching in the conventional classroom) show that 31% appear to prefer teaching in the conventional classroom, while 43% of them are not sure. Comparing this with their answers to question 16 where 67% agree (17% strongly agree) that it is important to use computers/IT in their teaching, and to question 18 that technology (computers/IT) positively affects student learning where 68% agree or strongly agree with the statement, makes one wonder as to what causes such limited CALL use on the part of teachers. It may turn out, however, that what caused teachers to be skeptical about the LR is, at least in part, attributable to being unable to use the facilities available and not that they are against CALL use.

What is even more striking here is that responses to item 27 (I believe that students enjoy classes more in the Language Room) and item 29 (I think my students prefer the conventional classroom) with means of 3.9 and 2.36 respectively indicate that teachers realize that their students prefer the LR. This is made clear by the percentage (75%) of the responses to item 27, which indicates that by far the great majority of teachers believe that their students enjoy classes more in the LR and the percentage (25%) of the respondents to item 29 which shows that only one quarter of those who responded
believe that students prefer the conventional classroom. However, teachers do not seem to prefer to teach in the LR (item 19) which is supported further by replies to the interview question (Why did you use /didn’t use technology (computers IT) in your teaching. Three teachers commented that the fact that their students were more confident in using computer technology than them, discouraged them from seeking to integrate CALL, as they feared that they would be exposed in front of their students. This is supported even further by comments such as the one from Zina, “I avoid taking my classes to the LR because it’s embarrassing when students ask why I don’t use the computers there. I wish I could.” This suggests that teachers feel that they fall short of their students’ expectations, which may act as an additional pressure upon them to either learn how to integrate technology or avoid using it altogether.

The replies to question 20 (Computers/IT have affected the way I use materials) indicate that teachers (44%) tend to agree (with some of them strongly agreeing) that computers have affected the way they use materials. However, it should be noted that nearly as many teachers (38%) remained neutral. This may suggest that on the one hand, teachers believe technology has indeed affected their use of materials, but on the other hand, the impact of technology on their teaching practices may not be remarkably great. Being consistent with this, teachers’ responses to question 18 (technology (computers/IT) positively affect student learning) show that 67% of teachers agree with the statement. However, almost half of them neither agree nor disagree that computers have affected the way they use activities (item 21). A possible explanation might be that teachers’ way of using activities has generally remained the same, but perhaps they did not want to admit it due to the possible pressures they may feel to do so. It may also be that teachers are unaware of the “broad array of activities’ (Davies, 2010) available online. The percentage, however, of those who agree or strongly agree with statement 21 is double that of the percentage of those who disagree, which suggests that teachers believe that the way they use activities has been affected by technology.

While teachers claim that computers/IT have affected the way they use materials, they seem to ignore the fact that the Internet cannot only be used to find materials for their lessons, but also to supply their own materials for their colleagues. Similarly, responses
from four interviewees, to the interview questions “What does the term ‘computer-assisted language learning’ (CALL) mean to you?” included, “I have no idea”, “I have never seen this before” “You want an honest answer? I have no idea” and “CALL? To me doesn’t really mean anything” are the answers from four of the interviewees. Responses from the other nine teachers could be summarized in Vana’s words:

“CALL is exactly what it stands for: computer assisted language learning. In other words, it is when the teaching and learning involves the use of computers to help the teacher to teach more effectively and involving the student more in the learning process”.

CALL did not seem to mean much more than what it stood for to many of the teachers as they did not seem to be aware of the principles that underlie CALL classes. One might wonder whether they would have come up with the same reply had I not given them the acronym in full.

In terms of the advantages of using CALL and IT in the English language classroom, the number one advantage of CALL mentioned in the interviews was “motivation” which was considered to be the most important even among those teachers who had never used a computer before. This is also supported by the quantitative data (Table 4.20, item 28, Technology makes learning more motivating) which shows clearly that the motivational aspect of technology is highly acknowledged with a mean of 4.3. In fact, no one strongly disagreed with the above statement (28) while only 3% (2 teachers out of 61) disagreed. In adapting learning to the student, authenticity and critical thinking skills were also mentioned by some. In general, teachers did not seem to see that CALL could be used to promote the four skills, though. This can be implied partly from those who, while they claimed CALL use in their teaching, refused to be observed saying that they had to “prepare students for a test”, or a “written composition”. It is also supported by comments such as “we’re preparing for the final exams, we’re pressed for time” and that the main disadvantage of using CALL and IT is that “students do not take it seriously”. This might suggest that students do not know or teachers think they do not know how to use technology to learn English. It may also suggest that CALL instruction
is not taken seriously by teachers, or that teachers do not really think that CALL can be as effective as traditional methods. It may also be that teachers lack the knowledge and/or skills to do so.

One other thing worth pointing out is that in their majority (51%) participants are neutral to question 17 in the questionnaire (it always worries me that something will break down). This appears to be justified as teachers’ use of CALL is too limited to cause them to experience this kind of anxiety. In fact, classroom observation showed that teachers do indeed, tend to use computers in ways they feel comfortable with but also in ways that reveal the teacher’s underlying philosophy. Evidence of this is what classroom observation revealed in one of the participating schools; two teachers working in the same school with the same institutional infrastructure, same availability (or lack) of support used technology in completely different ways: one of them to present grammatical rules and the other involving her students in blogging, which is a lot more creative and interactive.

As for the disadvantages of using CALL and IT in the English language classroom (interview question 8) Maria’s comments which appear below are representative of most of the teachers’ replies.

‘The main disadvantage for me is time. Not only is it time consuming to plan and prepare a lesson with computers but you always need to have something else ready to use with your students because lessons with computers can be quite unpredictable and you can waste a lot of time. Something goes wrong and there’s chaos. There’s nobody around to turn to for help. Also most of my classes have English for just two periods a week, you need more class hours and perhaps double periods…I mean a period of 45 minutes is not enough if you want to use new technologies in the classroom. So I often prefer the conventional classroom or use the LR as a traditional classroom. Time is also a problem for students’.

The qualitative data show that lack of time (to prepare a lesson, limited class time, time needed to handle technical problems), and lack of technical knowledge to use resources are major disadvantages suggesting that teachers not only believe that CALL lessons are different from other ELT lessons but that they are primarily more complex. The disadvantage of the requirement for technical knowledge is also supported by the
quantitative data. The responses to item 17 (It always worries me that something will break down) and item 41 (I can handle most of the technical problems by myself) show that teachers do not feel they have the technical skills needed. Thus, the data suggest that these disadvantages can lead to a lack of confidence on the part of the teachers to implement CALL.

To sum up this section on “beliefs”, the data showed that despite the reported disadvantages, teachers seem to acknowledge the importance of computers/IT for the EFL class, particularly in relation to their motivational aspect. As a result teachers appear to have a desire to integrate CALL and IT in their teaching.

4.5 Factors that influence CALL use

Research suggests there are two types of factors influencing CALL use (Ertmer, 1999; Ertmer et al., 1999). A number of questions were used both in the questionnaire and the interview to investigate the two types of factors affecting technology integration. Classroom observations also acted as an additional source of data.

4.5.1 Extrinsic factors

The quantitative data showed that a number of extrinsic factors hindered CALL use for EFL teachers in secondary schools in Cyprus. These included the environment, support and training and are shown in Table 4.22.
Table 4.22 Factors hindering teachers’ use of technology (Quantitative Data)

This was further supported further by the qualitative data. When asked to say why they used or did not use computers in their teaching, teachers named a number of extrinsic factors for both using or not using computers (see Table 4.23). Among the 13 teachers interviewed, 8 mentioned factors which had to do with the environment, 9 with the available support and all 13 with the provision of training. The qualitative data provided a clearer picture, as all teachers emphasized the training and time factors as being particularly significant. In fact, teachers’ responses to the question “Have you experienced any difficulties using CALL and IT in your teaching?” indicated that CALL and IT use are definitely affected by lack of time. Teachers complained that there was not enough time to “learn computer skills” (8 teachers), ‘plan a lesson with technology’ (3 teachers), “experiment with computers’ (2 teachers), ‘share their experiences with colleagues’ (4 teachers), ‘handle technical problems’ (7 teachers), or ‘even assign homework with computers’ (4 teachers). The data suggest that teachers tend to
associate difficulties in using CALL and IT with a lack of training and lack of involvement in professional activities which in turn they primarily attribute to lack of time.

<table>
<thead>
<tr>
<th>Factors hindering teachers’ use of technology</th>
<th>Interview</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=13</td>
<td>N=9</td>
</tr>
<tr>
<td>Lack of Training</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Time</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>- To learn computer skills</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>- To handle technical problems</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>- To experiment with computers</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>- To share their experiences with colleagues</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>- To assign homework with computers</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>- To plan a lesson with technology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Lack of Support</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Lack of facilities and tools</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>- Inadequate number of computers</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>- No Internet connection</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>- No projector</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Difficulty in accessing resources</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>- Overbooking of LR</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>- Location of LR inconvenient</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Lack of technical support</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4.23 Factors hindering teachers’ use of technology (Qualitative Data)
The time factor was considered by teachers as important as training and to a certain extent interrelated with training. Teachers explained that using CALL entailed time for training, more time to prepare a lesson and more class hours. They also claimed that lack of time on the part of their students prevented them from assigning homework that involved technology. Teachers commented that the Ministry had to find a way to teach them how to integrate computer technology and it had to be at the teachers’ convenience, which suggests that time constraints have an impact on teachers’ professional development regarding CALL and IT use.

The physical environment in many cases, they stated, was discouraging mainly because the availability of facilities and tools was problematic. Computers were only provided for the EFL class in the LR, a place not available for the teachers any time. As a result, difficulties in accessing computers also meant difficulties in accessing the Internet, which appeared to be major hindering factors. An additional problem which had to do with the physical environment for CALL, was the inadequate number of computers available. The Language Room in all secondary schools was equipped with 1-6 computers, with some of them not working, which caused further complexities and placed constraints on the part of the teachers even if they had managed to have access there. One teacher also mentioned that “having to go to the principal’s office to get the video projector is one of the reasons I don’t use technology as often as I’d like to”.

As for support, it is clear that lack of human support and guidance, lack of technological support and lack of resources in both hardware and software seem to have put teachers in a difficult position resulting in minimal use of CALL. The quality of textbooks and other teaching materials is obviously a key factor in the effectiveness of teaching and learning. However, implementing CALL seems to be a more complex process and part of that complexity is the time factor which appears to have caused secondary EFL teachers in Cyprus to focus almost entirely on text-book based activities. To sum up, extrinsic factors (e.g. lack of hardware and difficulty in accessing CALL facilities) seem to exert a powerful influence on teachers’ use of technology.
4.5.2 Intrinsic Factors

As for intrinsic factors the quantitative data illustrated that ‘motivation’ is considered by teachers to be a major facilitative factor for using technology. It is noteworthy, as the Table 4.24 shows, that of the 61 participants, only 3% of these disagreed with item 28 on the questionnaire (Technology makes learning more motivating) and no one strongly disagreed.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>2</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Neutral</td>
<td>7</td>
<td>11.5</td>
<td>14.8</td>
</tr>
<tr>
<td>Agree</td>
<td>23</td>
<td>37.7</td>
<td>52.5</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>29</td>
<td>47.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.24 Technology makes learning more motivating

<table>
<thead>
<tr>
<th>Factors facilitating teachers’ use of technology</th>
<th>Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers' desire to learn computer related technology</td>
<td>N=13</td>
</tr>
<tr>
<td>Teachers' beliefs about motivational aspect of computers</td>
<td>12</td>
</tr>
<tr>
<td>Self-satisfaction</td>
<td>3</td>
</tr>
<tr>
<td>English language dominates the Internet</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4.25 Factors facilitating teachers’ use of technology (Qualitative Data)
The data in Table 4.25, is consistent with the quantitative data in Table 4.24 which shows teachers' acknowledgement of the motivational aspect of computer technology. When responding to the interview questions 4, 5, 7, and 12 (Why did you use/didn’t use computers in your teaching?', ‘How do you see the role of the Internet in the English language classroom?', “What are the advantages of using CALL and IT in the English language classroom'and “How important do you feel it is to use technology in English language teaching”, all of the 13 interviewees stated that it is important to use technology in the English lesson and that they wished to be able to use it. 12 stated that students are more motivated to learn and this they said causes them to want to use them in their lessons. Six of these noted that ‘students are growing up with computer technology which means that they expect to see computers being used in class especially in the English class. One other teacher explained that ‘If you teach English you just can’t get away without using computers at all, English is the dominant language on the Internet which acts as an additional pressure on us and causes a lesson without computers to sound obsolete’.

This was reinforced further by classroom observations as four out of the nine observations involved a Youtube video. It seems that the abundance of Youtube videos in English and other authentic materials available online, which was also mentioned by five interviewees, exercised additional pressure on teachers to use computers in some way or other or to want to use them as the motivational aspect of these resources appeared to be highly acknowledged. However, four teachers’ replies to the interview question (Why did you use/didn’t use computers in your teaching) indicated that they did not use computers because they did not like to be exposed in front of their students. They explained that while they had very little knowledge about using computers, their students' were growing up with computers and were confident in using them. This scared them, they said, as they felt that although teachers need to know more than students, in this case, it seemed to be the other way around. This seems to contradict their replies to questionnaire item 22 (As a teacher I feel threatened by technology [computers/IT]). Although the quantitative data showed that generally teachers in this study do not appear to feel threatened by computer technology, the fact that they find their students more confident and more competent computer users than them, caused
four of the interviewees (nearly 1/3 of them) to avoid using them in their teaching. This may suggest that teachers do feel threatened by computers in the sense that they fear that computers will cause them to lose control. It may also be that teachers do not really want to let go of their traditional role and encourage student-centredness or learner autonomy for fear of losing their authority. This clearly has to do with their beliefs about teaching and learning. The data suggest in other words that teachers’ constructivist views may have to be questioned.

The study showed that intrinsic factors influencing teachers’ decisions to use or not to use CALL included teachers’ beliefs about using technology but also teachers’ beliefs about their students’ attitudes regarding CALL use and teachers’ knowledge. While nearly all teachers felt that students were more motivated to learn with computers, three said what could be summarized in, ‘it is so embarrassing when students want to know why I have taken them in the LR since we are not using the computers there’. It would appear that one other reason that caused teachers to want to use computer technology was self-satisfaction. These teachers appeared to be inside a vicious circle as not being able to use CALL prevented them from attempting to learn which in turn prevented them from attempting to use it. Comparing themselves with their colleagues (not necessarily EFL teachers) who could use computers in their classes made them feel that they were ‘at a disadvantage’ and ‘in a less favourable position’. Also students seemed to influence teachers’ CALL use ‘by not taking the lesson seriously’ or ‘by thinking that it’s just watching videos or searching the Internet’ as two teachers commented. A final hindering factor was mentioned by one teacher (Froso) who admitted she was not against technology use but “in Cyprus once you get appointed by the Ministry of Education and Culture you will be teaching for ever”. This suggests that the safety of the job and lack of incentives discouraged technology uptake.

4.6 Summary

The overall impression that one gets from the data collected is that English language teachers in secondary education in Cyprus appear to welcome the introduction of CALL into the EFL classroom and have a desire to incorporate it into their practices. However, effective CALL use seems to be exception rather than the rule. Computer
technology use is rather limited and peripheral with the most common types of computer and IT tools being searching the Internet mainly for additional information to supplement or reinforce the textbook, to download a short video or word processing and power point presentations. This shows that teachers appear to be ignoring the potential of the Internet or the existence of web 2.0 tools and e-learning materials. Teachers appeared to lack both the confidence and the skills to try new things on their own and felt that they needed more guidance and support. They did not seem to be aware or convinced of the potential benefits of ICT in terms of serving curricular goals; nor did they seem to believe that students know how to use computers for learning. Despite all these matters, the Internet is gaining popularity and some teachers appear to be exploring the possibility of integrating computer technology. There seems to be a strong desire among teachers to learn how to integrate computers into their practice, but do not seem to know how to make this happen. It is evident that extrinsic factors which have to do with the environment (lack of hardware and software and difficulty in accessing CALL facilities), lack of support and training, and intrinsic factors including teachers’ beliefs about technology as well as contextual factors, appear to exert a great influence on teachers’ CALL use. The study suggests that there is a long way to go before CALL becomes an integral part of everyday classroom practice for English language teachers in state secondary education in Cyprus, which may have serious implications for the Ministry of Education and Culture as well as language teacher education and the teachers themselves.
Chapter 5 - Discussion

5.1 Introduction

The purpose of this study was to investigate the CALL use for English language teachers in secondary schools in Cyprus, EFL teacher’s beliefs about using technology in teaching and the factors affecting CALL use. Quantitative and qualitative methods were used to achieve this purpose by conducting questionnaires, interviews and classroom observation.

The results of this study reflect the findings from other studies on CALL integration in the classroom in several respects, while questioning some others. This chapter, which discusses the results, is divided into three main sections:

a) The use of CALL for EFL teachers, which includes the environment, support, training and how technology is used.

b) EFL teachers’ beliefs about using computer technology in teaching.

c) Factors influencing teachers’ use of computer technology.

5.2 The use of CALL for EFL teachers

5.2.1 CALL Environment - Discussion

This study has clarified the fact that the environment for CALL in EFL classrooms in state secondary schools in Cyprus did not seem to enhance technology integration. Lack of hardware and software and difficulty in accessing CALL and IT facilities seemed to hinder CALL use. Although, as Ertmer, (1999) and Egbert and Yang (2004) argue, effective CALL use can happen even in a low-tech EFL classroom, the minimal use of CALL in the Cyprus secondary schools, can to a certain extent be attributed to both the physical environment and the learning environment in the EFL classroom. Limited facilities and tools in the schools such as the inadequate number of computers and lack of Internet connection, and the difficulty in accessing them rendered CALL integration problematic. Teachers did not have access to the facilities/tools in their schools
whenever they wanted, as they had to share the same space with all language teachers in their institution. This seems to be in line with previous research, which indicated that the likelihood of frequently using computers for language teaching in shared spaces is rather low (Becker, 2000). The study also showed that an important consideration was the location of computers. It seems that when computers are situated in places where they are not readily accessible, but are locked in a place where teachers have to make special arrangements to get access to - like the LR in secondary schools in Cyprus - computer use tends to be limited. If computers were available in the classroom, they could be used throughout the day and for a variety of everyday activities. This would render technology use a normal everyday routine, and might lead to more useful and meaningful EFL teaching and learning experiences. Thus, it is evident that the physical environment did not facilitate the creation of a learning environment with opportunities for learners for effective language learning, which according to Egbert et al., (2007) is necessary for meaningful CALL to take place.

This present study showed that while the extent to which classroom integration is achieved cannot possibly be determined by the frequency of computers, but rather by the extent to which the classroom environment has facilitated teaching and learning, as many researchers including Ertmer (1999), McKenzie (2001) and Egbert and Yang (2004) argue, the frequency of using computers is significant. Warshauer (2005) points out the challenge is how CALL can make a difference to teaching and learning on a daily basis. In other words, even if we assume that all lessons conducted in the LR are characterized by a CALL environment, which is based on the language learning principles used as a framework for technology application in the classroom (Egbert and Yang, 2004; Egbert et al., 2007), it is evident that CALL integration in my teaching context is very limited. Put differently, even if the physical environment in state secondary schools in Cyprus facilitated CALL integration and even if the teachers created opportunities and conditions for interaction and effective language learning, the limited time spent in the area where CALL facilities and resources are available might lead to a level of skepticism as to the extent to which CALL integration is taking place. Hence, the low frequency of using technology can be an indication of the low integration taking place in the EFL class in Cyprus.
5.2.2 Support - Discussion

The findings show that there is a lack of support, guidance and resources to help teachers with the practical implementation of ICT in the classroom. This study thus confirms earlier studies (Reinders, 2009; Lim and Khine, 2006 cited in Teo, 2010) which have highlighted the importance of the support environment. It provides evidence that lack of technical, psychological and pedagogical support prevents teachers from promoting CALL integration. Teachers with no computer skills seem to be in a vicious circle, as this prevented them from using technology and not using it prevented them from learning. Even after attending a training seminar, teachers felt they still needed support to help them put into practice what they had learned. The findings also revealed that collaboration with other colleagues was desirable. Not having somebody to turn to for advice or guidance or somebody who could fix a technical problem created feelings of insecurity, frustration and in essence, rendered technology use almost impossible to achieve.

The present study is in line with the conclusions of many researchers including Ertmer (1999), Smerdon et al., (2000), Cuban, (2001), McKenzie, (2001), Egbert and Yang, (2004), Meskill et al., (2006), (Li and Walsh, 2011) that the mere availability of computers cannot on its own achieve technology integration. This is especially true for the teacher, who had access to the computer facilities in her school whenever she wanted, yet she did not use them because she was not familiar with technology. This does not seem to support the claim by Lee (2000) that the most significant aspects of CALL use are hardware and software; it justifies, however, earlier research that CALL integration can be highly constrained by lack of inadequate resources and support (Ertmer, 1999, Mcgrail, 2005; Meskill, 2006). In other words, the present project seems to confirm that by investing money only in equipment and networking the Ministry of Education and Culture in Cyprus introduced CALL the wrong way around and neither the quality nor the quantity of CALL use increased significantly.

In contrast to claims by previous research that teachers are more likely to use computers when they have a small number of them (five) in their classrooms (Becker, 2000), the present study shows that the opportunity provided by the LR which was
equipped with a small number of computers (1-6), did not seem to have a positive impact on the majority of the teachers. This may imply that the location of the LR (and therefore the place where computers are situated) was a source of inconvenience. The findings of the study, however, also suggest that failure on the part of the teachers to allow technology to transform their practices may not be entirely attributed to the presence or lack of computers or resources, but to other factors both intrinsic and extrinsic as even in a low-tech classroom, CALL use is not impossible (Ertmer, 1999; Egbert and Yang, 2004). It seems that Stock (1993, p. 82 cited in McCarthy, 1999) was right when he warned that language labs will be discarded by the language teacher if the language teacher is not convinced that technology can make a real contribution to better language learning. However, the study justifies earlier studies (Becker, 2000; Becker & Ravitz, 2001; Ravitz, et al., 2001) that teachers with greater technical knowledge are more likely to make frequent use of computers.

The study provides evidence to suggest that issues around access to resources include not just access to teaching with computers, but the need for teachers to have personal access to them, to allow them to plan and prepare and build their confidence. This is in line with previous research which found that there is a connection between teachers’ technology use in teaching and their personal access to computers (Cox et al., 1999). Thus, lack of access to computers or the Internet in Cypriot schools, other than in the LR (since this had to be shared by all language teachers leaving no space for teachers to use the facilities for personal use), prevented teachers from regularly spending time with computer technology and building their confidence.

It is evident that since the year 2000, when computers were first introduced in the EFL class in Cyprus, the provision of teacher support has been inadequate. One of the challenges that the Ministry of Education will need to face is the fact that technology is constantly changing and teachers need regular support to keep-up-to-date through relevant professional development programmes and materials.
5.2.3 Training - Discussion

It is evident that there is a lack of training in both technical skills and pedagogical skills. The results of this study seem to confirm earlier studies that training is a major factor that influences teachers’ decisions in terms of CALL implementation. Being consistent with previous research (Ertmer, 2000; Yildirim, 2000; McKenzie, 2001; McGrail, 2005; Hampel and Stickler, 2005; Kessler, 2006; Reinders, 2009), this study indicates that while most agree that CALL use is becoming increasingly important within language instruction, formal language teacher training programmes have failed to provide teachers with the required technical and pedagogical knowledge and skills to make successful use of technology. The results confirm earlier research that the need to equip teachers with the skills to teach with technology seems more important than ever (Pelgrum, 2009; Hubbard and Levy, 2006). In fact, the study shows that while teachers are required to use technology because the Ministry of Education and Culture or the inspectors push for it, not only do teachers feel they are not familiar or confident in its use, but they even feel that their inspectors are unable to provide the required guidance. This parallels previous studies (Brown, 1999; Lee, 2000; Mcgrail, 2004; Ertmer and Ottenbreit-Leftwich, 2010) which have shown that even instructors make improper use of technologies.

In line with earlier studies, the present study shows that the duration of professional development has an impact on outcomes and that one-day workshops with little or no follow-up do not have lasting impact on teaching practices (Richards & Farrell, 2005). Teachers do not benefit fully from a one-size-fit all programmes, seminars or workshops without follow up sessions. In addition, Richards et al. (1996) are right in arguing that teacher educators need to find out what questions each teacher participating in a training programme is struggling with when they complete a training programme. The data collected also tend to support previous research that CALL use requires new knowledge and skills and as technology changes so rapidly this knowledge and skills must be constantly renewed (Hubbard, 2010).

The findings of this study suggest that extending or linking a CALL class with students’ life beyond school (e.g. assigning homework with computers), CALL integration may
stop being at a surface level and go at more depth. This is in line with earlier research including (Ertmer and Ottenbreit-Leftwich, 2010) who argue that many of the reported technology uses tend to be “low-level”: that is, they support traditional, teacher-centred instruction. It would appear, that while teachers need to be provided with the necessary training, teaching their students new skills is an additional challenge for teachers.

English teachers in secondary education in Cyprus seem to need individualized assistance as teachers’ needs and abilities varied. Individual training caters for their individual worries, and discourages feelings of incompetence or guilt. The results seem to support the view that individual training would be more effective as teachers-in-training follow individual paths in the absorption and application of knowledge (Veen, 1993; Pennington, 1996; Richards et al., 1996). The results also indicate that training should be less theoretical and more school-based, which suggests that teachers need opportunities to put theory into practice. The study shows that Prabhu (1992) is right in arguing that it would be naïve to think that a good teaching method formulated by a specialist can always be implemented by teachers in their classrooms. However, it tends to support the claims made by Spaulding and Rakes (2009) that increasing teachers’ technology skills can better prepare teachers to effectively integrate technology into the classroom are well founded. In other words, despite the true challenge of professional development being to inspire teachers to make meaningful use of new technologies as Lock (2002) contends, teachers need opportunities to observe models through on-site demonstrations of technology-integrating peers or mentors, they need to reflect on and discuss ideas with peers and mentors, and they need to reflect on and discuss ideas with their peers and mentors as well as continual on-site collaboration with colleagues and experts (Ertmer, 1999) and Sandholtz, (2002). Indeed, the findings of the present study seem to confirm the claims made by Egbert et al., (2002) that teachers’ previous experience with computers and colleagues are the most common resources of new CALL activity ideas outside of formal coursework.

The results of this study showed that CALL is more readily integrated by teachers with prior experience with computers, which is in line with previous relevant literature
(Egbert, Paulus and Nakamichi, 2002). Since technical knowledge (as argued in 5.2.4 Limited use of technology) as well as prior computer experience facilitates teachers’ CALL use, one may argue that CALL could be strengthened and fostered by not being restricted in a specific space (the LR) but by providing teachers with opportunities to acquire this kind of knowledge and experience both in the everyday classroom and beyond it. This would encourage teachers to use technology for a variety of purposes (e.g. communicating with parents, assessing students) which might gradually but steadily help teachers to move from the old to the new and transform their practices. The study shows that teacher education programmes are primarily responsible for providing teachers with opportunities for practical applications. The results reveal that in-service training in CALL and IT specially designed for EFL teachers did make a difference in the teachers’ beliefs and attitudes towards technology which appears to contradict previous research according to which beliefs don’t change (Johnson, 1994; Almarza, 1996) or that formal coursework has no impact. The four-day-course which involved an ICT specialist seems to have convinced teachers of the potential of computer technology and the gains for their students and themselves. It also seems to have had an impact on their skills and confidence as teachers perceived themselves as better-prepared to try CALL in their classrooms. This finding highlights the importance of assessing professional development programmes.

The study confirms earlier findings (Ertmer, 2000; Lee, 2000; McKenzie, 2001; Zhong and Shen, 2002) that when professional development of teachers fails to address teachers’ technical or pedagogical needs, technology will only change the physical appearance of the traditional English classroom. It is worth pointing out that not many of the participants in the present study made an effort to make up for this deficiency by consulting for instance conference workshops, websites, colleagues or personal readings. One possible explanation for this is that teachers in Cyprus may need guidance in accessing alternative available resources as they tend to be unaware of them, or that Kessler (2006, p. 35) is right in arguing that teachers need incentives such as release time, financial compensation and recognition.
5.2.4 Teachers’ use of computer technology

Limited use of technology

The present study shows that while it has been a decade since the LR and CALL were introduced in secondary education in Cyprus with a view to shift to more learner centred approaches, teachers’ use of computer technology appears to be low and “low-level”. (Maddux & Johnson, 2006 cited in Ertmer and Ottenbreit-Leftwich, 2010, p. 256). Technology use tends to be rather peripheral and teacher-centred, which maintains rather than transforms teachers’ practices. Teachers appear to use computer technology to search the Internet mainly for information resources to supplement or reinforce the textbook, to download a short video as well as for word processing and power point presentations. This is in line with previous research which indicated that those uses support traditional, teacher-directed instruction (Ertmer and Ottenbreit-Leftwich, 2010).

The Ministry of Education and Culture, which is exclusively responsible for implementing the ICT strategy in education, does not seem to have considered the importance of understanding language teaching from the view of the teacher. The findings are consistent with previous research (Ertmer, 1999; Clark, 2000; Toll, 2001 cited in Mcgrail, 2005, p. 7; Ertmer and Ottenbreit-Leftwich, 2010) that teachers’ perspectives on educational change including technology use have not always been sought and shared by those who were implementing an innovation and that the use of CALL and IT for teaching and learning is linked with visions of change.

The findings are also in line with previous studies which show that neither the mere availability of computers can on its own achieve technology integration (Ertmer, 1999; Cuban, 2001; McKenzie, 2001; Egbert and Yang, 2004; Meskill et al., 2006 ; Teo, 2010; Li and Walsh, 2011), nor can CALL take place because administrators push for it (Mcgrail, 2004). The study also confirmed that there are EFL teachers in Cyprus secondary education who had no computer skills at all and as a result they never used technology in their teaching. This indicates that the successful use of computers and the Internet in schools is also dependent on users’ familiarity with them, which reflects previous research which showed that the most important and confronting difference
between a CALL class and other ELT for many teachers is probably the need for technical knowledge to access or utilize the language learning resources (Lock 2002). On the other hand, it justifies earlier studies that show how technical computer skills, although necessary, cannot guarantee technology uptake (Reinders, 2009; Li and Walsh, 2011). Thus, the present study tends to confirm that successful CALL is a complex process, and the teacher seems to be a catalyst in this complexity.

*Technology has affected teachers’ activity*

Teachers in this study tended to be more willing to adopt CALL use once when they were convinced that their students as well as their own instructional practices would see gains from it. As a result, teachers used Youtube videos or power point presentations to motivate their students, improve their class presentation or make their work easier. Concentrating on what computer technology is good at and not on what teachers cannot do with it, reinforces Egbert and Yang’s argument that although there are cases in which it is not recommended, “we often use it because we are required to, because students like it, or because it can support tasks more efficiently or effectively than we can”. (2004, p. 28 italics mine). Indeed, it does not seem that this way of using computers, that is using a power point presentation to simplify teachers’ lives or make their work lighter, will necessarily lead to “powerpointlessness’ (McKenzie, 2001) but I would agree that in no way does it exploit the potential of technology nor does it transform human activity (Mcgrail, 2005; McKenzie, 2001 italics mine). In fact, it indicates that computer technology by EFL teachers in secondary education in Cyprus is still a long way from being perceived as essential to successful student learning outcomes. As a result, teachers tend to avoid using CALL and IT to promote curricular goals, when preparing students for a test, an exam, or when they are pressed for time.

Although by far the majority of teachers participating in the study, claimed that they welcomed the introduction of IT technology, and many of them did consider using computers in their teaching, integration seemed to be at a somewhat superficial level. Searching the Internet mainly to find short videos or additional information to supplement or reinforce the textbook as well as word processing and power point presentations seemed to be the most common uses, which is in line with previous
studies (Becker, 2000; Meskill, 2006; Yildirim, 2000; McKenzie, 2001) suggesting that teachers appeared to be using computers to suit their own understanding and capacity.

Absence of interaction

Teachers did not use computers regularly or most importantly in ways that were interactive or creative but rather adapted the technology to handle old practice, retaining the teacher-centred way of teaching. This absence of student-centredness supports earlier studies in that the extent and manner computers are used indicate a teacher’s underlying philosophy (Newman, 2000; Becker, 2000; Ravitz et al., 2000; Ravitz & Becker, 2000; McKenzie, 2001). It would not be safe, however, to conclude that EFL teachers in Cyprus are more traditional-oriented than constructivist-oriented as the extent and the manner they used computers seem to have been influenced by various factors which I will discuss in the third part of this chapter.

In some classroom observations, teachers seemed to have made successful efforts to motivate students and create an atmosphere with a low anxiety level by using a Youtube video. However, there were hardly any opportunities for students to interact in the target language with an authentic audience or interact socially and negotiate meaning. The creation of a learning environment which provides students with experiences that traditional classrooms would not, is a sine qua non McCarthy (1999) explained, while Egbert and Yang (2004) remind us that such opportunities are considered essential for CALL to happen. Students were involved in authentic tasks in one classroom (posting their word grids in their class blog) but because of the limited number of computers available and limited Internet access, only a small number of students were working on the computer. While two of the teachers in this study used the Internet to create unique learning opportunities for their students, many teachers appear to have viewed the computer as an end in itself, rather than just as another tool to enhance learning (Warschauer, 2005) and used computers to maintain their existing practices rather than to transform them. This appears to justify previous research that teachers are often required to use CALL because of others’ expectations (Brown,
1999; Mcgrail, 2004; Warschauer, 2005) while they are not familiar or confident in its use Ertmer (2000).

The present study seems to support previous research in several other aspects. The data indicated that not only do teachers determine whether technology enters the classroom but also affect how it is used in the classroom, an argument discussed by Zhao and Tella (2002); Teo, (2010). It is evident that only if it is allowed by the teacher in the classroom or used properly, can CALL have the opportunity to exercise its educational power. The pressure to use technology which may be exercised on EFL teachers in Cyprus by the Ministry, inspectors or students might cause teachers to use computers on the basis of novelty rather than for sound pedagogical reasons. The study shows that in many English foreign language classrooms in Cyprus very little is actually happening with computers, and that where it is happening, it is often done “peripherally” which is in line with McCarthy’s findings more than a decade before (McCarthy, 1999 p. 1).

Is CALL for “serious” work?

The study shows that teachers tend to avoid using CALL and IT to promote curricular goals, to prepare students for a test or an exam. Teachers who prepare students for the final exams (Pancyprian Exams) felt they did not have enough time to integrate CALL. All this suggests that teachers do not see technology as something that can be used for achieving educational goals or for ‘serious work’. The findings also indicate that Jones (2001 cited in Li and Walsh, 2011, p. 102) is right in arguing that the curriculum should be revised to incorporate CALL rather than using CALL as an add-on. Once this is done, the Pancyprian Exams and the approach to student assessment should be updated so that they are compatible with what is taught and with CALL.

Teachers tend to believe that although their students prefer the LR to the traditional classroom, they do not take an EFL lesson with computers seriously, and they tend to associate a lesson with computers with entertainment. However, the way in which students view technology may be influenced by how teachers use it in class. By using technology in a supplementary way, or as accessories (Zwong and Shen, 2002, p. 43)
rather than as a necessary tool to help students master the curriculum material, EFL teachers in Cyprus may have discouraged students from valuing the role of computer technology in English language learning. This is consistent with previous research (Mcgrail, 2005; Teo, 2006) which argues that the way in which teachers use computers affects the way students view the importance of computers in schools. In other words, as Huang & Liaw (2005, cited in Teo, 2010) argue, technology use for teaching and learning is a function of teachers’ attitudes.

The findings suggest that the benefits from the use of ICT by teachers may increase if students themselves are enabled to use ICT in the learning process. Thus, students may have to be equipped with skills in how to use a computer for English language learning which would give students more control over the learning experience and would cause them to value an EFL class with computers more. This might also cause those teachers who are scared by their students’ computer experience to overcome those fears as it would become clear that both teaching and learning with computers requires skills that neither teachers nor students need to have with other ELT. It would also create a link between the EFL class and students’ home, and help in using computers in the English class and at home to achieve the same goals. This would be a step forward in terms of using technology to facilitate personalized teaching and individualized learning.

In contrast to previous research (Judson, 2006), this study shows that it is not commonplace for teachers to use technology for record keeping, communicating with parents or accessing lesson plans. Teachers seemed to be unfamiliar or unaware of the multiple roles of ICT or the existence of web 2.0 tools and e-learning materials. Even so, most teachers claimed to be technology advocates, while the interviews and observations revealed that CALL and IT use allowed for “a technologized traditional classroom” (Zhong and Shen, 2002, p. 46) as computers were not used in ways that made a difference to teaching and learning. All of this suggests serious implications for language teacher education.
Positive trends

While English language teaching appears to remain largely unchanged in many of the Cypriot classrooms, teachers in secondary education in Cyprus appear to have started to view technology in a positive light. The present study provided evidence to suggest that some progress has taken place over the last decade although the true potential of computers will not be fulfilled until they become an integral part of the way we teach and learn. This growing tendency in CALL integration supports previous research which showed that the number of EFL teachers using CALL is increasing (Pennington, 1999; Lee, 2000; Zhong and Shen, 2002; Warner, 2004 cited in Chen, 2008). The findings also showed that even though the potential of the Internet for educational use has not been fully explored, Internet use is becoming more and more popular in language teaching and culture which is also consistent with earlier studies (Kramsch et al., 2000; Thorne, 2003 cited in Chen, 2008, Li and Walsh, 2010).

The study showed that Lee (2000) is right in pointing out that even if most schools still make limited use of computers, it is obvious that we have entered a new information age in which links between technology and TEFL have already been established. This is reflected in teachers’ comments that “technology use is not an option anymore” which appears to question Cuban’s claims that computers have so many disadvantages that cause them to be incompatible with the requirements of teaching (Cuban, 2000 cited in Becker, 2000); on the other hand, it may also suggest that computers are indeed so useless that teachers find them incompatible with their current teaching practice but have no choice.

To sum up this section of teachers’ use of technology, it is interesting to note that teachers seem to claim that technology plays an important role in their teaching but its potential is in no way exploited. In fact, it would appear that technology integration has not really entered their classroom to transform their practices and assist them in their curricular objectives. This study argues that despite teachers’ desire for using computers in their practices, actual use of technology in the EFL class remains an issue. As the education system in Cyprus is centrally managed the remedy of the
situation will have to come primarily from the Ministry of education which will have to make adaptations to the education system.

5.3 Teachers’ beliefs about using computer technology in teaching

As for beliefs, the study tends to justify previous research that teachers’ beliefs affect not only their teaching, but also filter new input, suggesting significant implications for the implementation of educational innovations and teacher education programmes (Johnson, 1994; Richards and Lockhart, 1994; Brown, 1999; Borg, 2003; 2005; 2006; Farell, 2006). As a result, the CALL use in the EFL class in Cyprus was more the exception than the rule.

5.3.1 Ignoring the potential of CALL

Teachers did not appear to be aware of the resources available; nor did they seem to believe in the multiple roles mentioned by Kern and Warschauer (2000), Beaty, (2003) and Ertmer and Ottenbreit-Leftwich, (2007) that the computer can play in language teaching. As a result, although teachers appeared to acknowledge the significant contribution of computer technology to motivation, they seemed to ignore the potential of the Internet and that it can act as a catalyst for greater interaction, learner autonomy and critical thinking. Teachers in this study tend to conceive of technology as a tool or source of information, rather than as support for a total environment for learning which Egbert and Hanson-Smith (2005) emphasize as essential in enhancing technology education. This reveals teachers’ pedagogical beliefs, and may be an indication that these teachers who are more concerned about covering the curriculum and make limited use of technology are not as constructivist-oriented as those who seem to be more interested in integrating the curriculum, which is in line with previous research (Collinson, 1996; Becker, 2000; Ravitz et al., 2000; Ravitz & Becker, 2000; McKenzie, 2001, Pelgrum, 2008).

The study tends to confirm earlier findings that successful CALL use is primarily determined by the teachers’ beliefs and attitudes (Veen 1993; Brown, 1999; Ertmer, 1999; Mcgrail, 2005; Chen, 2008, Teo, 2010) but whether CALL activities can happen regardless of the technologies available (Egbert and Yang, 2004) was questioned by
the present study as lack of hardware and software caused frustration among teachers. The author of the present study agrees that the teacher is a primary factor or catalyst in the provision of successful CALL activities but factors tend to be interlinked and CALL use cannot really be implemented if computer technologies are absent. However, availability of computers and other resources does not in any way guarantee CALL integration. Thus, the study indicates that Mcgrail, (2005) is right in arguing that the key component in realizing the positive goals envisioned for computer technology is the beliefs and practices of those who are affected by it and not computers alone, as these constitute only a part of a complex process. Indeed, the present study provides evidence that teachers with the same resources and access do not use technology to the same extent or in the same way. This justifies previous research, namely that the way computers are used indicate a teacher’s underlying philosophy (Becker and Ravitz, 1999; Egbert and Yang, 2004; Mcgrail, 2005) and that teachers who favour more student-centred approaches tend to make wider use of technology (Becker, 2000; Ravitz et al., 2000; Ravitz & Becker, 2000; McKenzie, 2001; Pelgrum, 2008).

5.3.2 Teachers’ beliefs about technology use are not inflexible

The study also seems to be in line with earlier studies (Ertmer and Otenbreit-Leftwich, 2009; Teo, 2010) which shows that once teachers see the valuable contribution that technology can make to their job performance, it is more likely that they will be inspired to experiment with new methods and new materials. The two teachers (Chrysa and Stalo) were determined to implement more technology in their practices after the four-day in service training in ICT that they had attended. Being consistent with previous research (Borg, 1999) the study indicates that teachers’ confidence in their knowledge and teachers’ computer confidence (Teo, 2007 cited in Teo, 2010) can shape their instructional decisions. Indeed the results seem to question the inflexibility and stability of beliefs (Johnson, 1994; Almarza, 1996; Teo, 2010) as teachers felt the seminar on using ICT in the English classroom caused them to see the usefulness of ICT in their classes and whetted their appetite for more. This appears to support the view expressed by Cabaroglu and Roberst (2000), MacDonald et al., (2001), Hasher et al., (2004) that belief changes are possible but are gradual and variable among individual
teachers. The present study does not claim that change in beliefs will always lead to CALL adoption and change in practice, which confirms earlier research (Ertmer and Ottenbreit-Leftwich, 2009) that beliefs, knowledge and confidence intersect. Indeed, after the training programme, Stalo (one of the teachers mentioned above) still felt unprepared and a great need for support and follow-up sessions. While the study acknowledges that the teacher is the primary factor in CALL use, it supports the view that by designing the content of teacher development programmes to be more contextual and relevant to the needs of the participants, it increases the likelihood of meaningful CALL use by teachers. Appropriate training might also impact teachers' beliefs in terms of what they think their students feel about computer classes. It might, in other words, help teachers discover that students may not take an EFL lesson seriously not because they are against technology use as such but because of the manner it is used by the teacher.

A significant finding of this study, is that although teachers do not seem to be aware of the wide range of computer technology uses and tend to feel that computers are not always compatible with their current teaching practice (that is why they avoid using them when preparing for a test or an exam) they appear to welcome the introduction of IT technology. This seems to contradict previous research which suggests that the ‘wonder of CALL is so often met with indifference, skepticism or scorn” (McCarthy, 1999 p. 1).

Overall, the data on teachers’ beliefs indicate that although computers mainly helped teachers improve their classroom presentation without further exploitation, teachers have a desire to learn how to incorporate technology into their teaching practices. This reminds us of Burns (1990), Kumaravadivelu (1993) and Nunan (1987) who explain that despite teachers’ claims that they believe or are even committed to a particular approach, the underlying principles of such an approach do not seem to make their way into the classroom.
5.4 Factors influencing teachers’ use of computer technology

5.4.1 Extrinsic, Intrinsic and Contextual factors can be intertwined

The study appears to support earlier studies that the factors affecting teachers’ use of computer technology are complex and interrelated (Balanskat et al., 2006; Li and Walsh, 2011). This in turn suggests that in the absence of any one factor technology integration is difficult or even impossible to achieve. The present study is also in line with previous research (Mcgrail, 2005; Light, 2001, cited in Meskill, 2006, p. 448) in that technology use does not have the same effect universally, but affects and is affected by its social and cultural contexts.

The results indicate that extrinsic factors such as computer accessibility as well as intrinsic factors such as teachers’ beliefs about teaching and learning have a role in determining the extent to which teachers will use technology. Indeed, the study justifies earlier studies which have identified several extrinsic factors, namely inadequate access to resources (Becker & Ravitz, 1999; Cox et al., 1999; Zammit, 1992, cited in Lam, 2000; Becker, 2000; Meskill, 2006), inadequate numbers of computers (Lim and Khine, 2006 cited in Teo, 2010), insufficient time, lack of training and support (Cox et al., 1999; Becker & Ravitz, 1999; Becker, 2000), size of classes (Egbert and Yang, 2004) scheduling and pressure of curriculum coverage (Becker and Ravitz, 1999; Becker, 2000; Meskill, 2006). These appear to prevent EFL teachers in Cyprus from successfully integrating technology in the classroom. In addition, the study identified intrinsic factors such as teachers’ beliefs about technology and computer anxiety (Teo, 2007), as well as contextual factors including lack of homogeneity of student abilities to use computers for learning, private tuition (frontistiria) which results in mixed ability classes, the limited number of English instruction per week, teachers’ age, exams (The Pancyprian Exams), and traditional textbooks which tend to act as further CALL obstacles.

5.4.2 Extrinsic factors /Technology accessibility

This study has clarified, that the environment for CALL in EFL classrooms in public secondary schools in Cyprus did not seem to enhance technology integration. Although
as Ertmer, (1999) and Egbert and Yang (2004) argue, effective CALL use can happen even in a low-tech EFL classroom, the minimal use of CALL in the Cyprus secondary schools can to a certain extent, be attributed to both the physical environment and the learning environment in the EFL classroom. Limited facilities and tools in the schools as well as difficulty in accessing them rendered CALL integration problematic. Teachers did not have access to the facilities/tools in their schools whenever they wanted as they had to share the same space with all language teachers in their institution. This seems to be in line with previous research which show that the likelihood of frequently using computers for language teaching in shared spaces is rather low (Becker, 2000). The study also showed that an important consideration is the location of computers. It seems that when computers are situated in places where they are not readily accessible but are locked in a place where teachers have to make special arrangements to get access to (like the LR in secondary schools in Cyprus) computer use tends to be limited. If computers were available in the classroom they could be used throughout the day and for a variety of everyday activities. This would render technology use a normal everyday routine which could lead to more useful and meaningful EFL teaching and learning experiences. Thus, it is evident that neither the physical environment nor the learning environment encouraged the creation of opportunities for learners for genuine problem solving, decision making or authentic communication.

This study showed that while the extent to which classroom integration is achieved cannot possibly be determined by the frequency of computers but rather by the extent to which the classroom environment has facilitated teaching and learning, as Ertmer (1999) and McKenzie (2001) argue, the frequency of using computers is significant because as Warshauer (2005) points out, the challenge is how CALL can make a difference to teaching and learning on a daily basis. In other words, even if we assume that all lessons conducted in the LR are characterized by a CALL environment which is based on the language learning principles used as a framework for technology application in the classroom (Barson et al. cited in Debski, 2000; Egbert and Yang, 2004), it is evident that CALL integration in my teaching context is very limited. In other words, even if the physical environment in state secondary schools in Cyprus facilitated CALL integration and even if the teachers created opportunities and conditions for
interaction and effective language learning, the limited time spent in the area where CALL facilities and resources are available could cause some kind of skepticism as to the extent to which CALL integration takes place. Thus, the low frequency of using technology can be an indication of the low integration taking place in the EFL class in Cyprus.

5.4.3 Contextual factors

The study shows that technology use can indeed affect and be affected by the local context which is consistent with previous research which identified culture and context as two major factors that affect technology integration (Zwong and Shen, 2002; Debski, 200; Anderson, 2004). Contextual factors in Cyprus include teachers’ workloads, mixed-ability classes, textbooks, lack of involvement in professional development activities, teachers’ age, safety of teaching job in a state school and lack of incentives. Additionally, students’ attitude towards an English class and lack of homogeneity in their language proficiency and skills to learn English using computer technology as well as the student assessment system seem to have a role to play in implementing CALL.

In Cyprus, nearly all students start learning English privately. They start those classes at different ages which means that by the time they come to school they have been learning English for a different number of years but end up in the same class as it is their age that determines which class they are placed in. However, teachers seem to be incapable of using technology to differentiate their teaching and foster personalized and individualized learning.

Teachers’ age

The average age of the newly-appointed teachers is well advanced and is becoming increasingly ever more advanced. In the year 2008 there were 1370 candidates on the waiting list while the average number of candidates appointed yearly is 18.6. This means that when they are appointed, they are one generation older than their students which may affect their decisions not only on whether to use computers or not but how to use them. Being “of the pre-computer generation” (McCarthy, 1999, p. 9), the ability
of these teachers to create a modern, technological environment in order to cater for these young generation’s interests and aims could perhaps be questioned.

**Textbooks**

Textbooks developed for use in other countries (notably the United Kingdom) are heavily used which is understandable from an economic point of view, since Cyprus being a small country does not the favour national production of textbooks. However, it does not necessarily follow that these publications from abroad correspond fully to the national programmes of study and to the pedagogical goals as prioritized by the Ministry of education and Culture. This seems to place additional demands on teachers.

**5.4.4 Insufficient time**

Being in line with previous research the present study showed that time tends to be one major factor that affects technology integration (Becker and Ravitz, 1999; cox et al., 1999; Preston et al., (2000). EFL teachers in Cyprus feel that they need time to search the Internet, prepare a lesson, access the facilities in their school, handle technical problems and rush to and from the Language Room to another classroom and that lack of time on the part of their students prevents them from assigning homework with using computers. This may have to do with their age, as being “of the pre-computer generation” as aforementioned and “almost by definition not IT specialists” (McCarthy, 1999, p. 9) EFL teachers in Cyprus need time to become acquainted with the medium. The study showed that the time factor is indeed extremely important, as it can affect many other factors. Teachers expressed their preference for attending training programmes in technology integration organized during school time, rather than in their own free time, which shows that teacher training, one of the greatest roadblocks to technology integration, is also affected by the time factor. The results showed that adequate time for appropriate individualized training could answer teachers’ individual concerns, which in turn could affect both their beliefs and skills and general perspective of the individual teacher as Atkin (2000, cited in Altrichter and Elliot) argued. The findings revealed that teachers feel they need more time to teach with computers than
without them which coincides with Jones (2001 cited in Li and Walsh, 2011, p. 102) who noted that there is a need for the curriculum to be revised so that teachers have enough time to put their technical and pedagogical training into practice. However, the study may also suggest that teachers feel they do not have enough time to be able to make successful use of computers because teachers’ attitudes to computer use is associated with their “perceived usefulness and perceived ease of use of computers” Teo, (2010). In other words, teachers may not feel that CALL integration is really worth the time or the effort.

5.4.5 Interconnection of factors

The study provides evidence that factors are complex and interrelated; for example, intrinsic factors such as teacher confidence and computer anxiety levels appear to be affected by the amount and type of the available support. Similarly, teachers’ beliefs about technology use in English language teaching seemed to be affected by the amount and type of training.

The findings of this study support previous research that failure on the part of the teachers to allow technology to transform their practices may not be entirely attributed to the presence or lack of computers or resources but to other factors which have to do with the teacher herself (Veen, 1993; Ertmer, 1999, Lam, 2000, Teo, 2010). This study justifies earlier studies that teacher factors, although not easily apparent, can decrease or increase the effect of extrinsic factors. It also showed that Ertmer (1999) is right in arguing that in the absence of any of the extrinsic factors ‘meaningful integration will be difficult, if not impossible to achieve’ (p. 56). It seems to be the case that extrinsic factors including time, scheduling, access to hardware and software as well as technical knowledge can affect intrinsic factors such as teachers’ confidence or attitude towards CALL and help teachers to feel better prepared to make ‘meaningful integration’.

The study provided further evidence that factors tend to be interlinked. It highlighted the importance of resources and support, as this might encourage teachers to become more confident in using technology since Lee (2000) and and possible help them develop more constructivist-oriented views. This is in line with earlier studies (Becker and Ravitz,
1999; Zwong and Shen (2002), according to which resources and support could result in a redefinition of teachers’ role, and of what they believe about teaching and learning which could lead to effective integration of computers. It seems to be the case, as Lee (2000) and Zwong and Shen, (2002) maintain, that teachers and their beliefs can determine the extent and the manner in which technology is used, and that the difficulty is more of a conceptual character than technological, which brings the interconnection of factors into play again. Thus, given the impact that lack of confidence or anxiety can have on teachers’ use of technology, providing them with ample opportunities to experiment with computers might increase both their competence and confidence and lower anxiety levels.

The present study also justifies earlier studies that in-service language teachers who are not competent enough in computer-assisted language learning find themselves at a disadvantage (Hubbard and Levy (2006, p. ix). In my view, this is a further indication that extrinsic and intrinsic factors are interconnected. Lack of appropriate in-service training, for example, can situate teachers within a vicious circle; teachers may find themselves ‘at a disadvantage’ feeling incompetent, lacking confidence, knowledge and skills. This may lead teachers to a passive state and a state of inactivity, suggesting that teachers’ perceptions about computer technology may be affected by teacher training which has serious implications for language teacher education.

5.5 Summary

The overall results of this study reflect the findings from other studies on CALL integration in the classroom in several aspects, while questioning some others. They suggest that English language teachers in secondary education in Cyprus appear to welcome the introduction of CALL into the EFL classroom and have a desire to incorporate it into their practices. Despite teachers’ scant knowledge about CALL, the Internet is gradually increasing in popularity. However, the results show that CALL use is rather limited and peripheral, with the most common types of computer and IT tools being searching the Internet mainly for additional information to supplement or reinforce the textbook, to download a short video to motivate students as well as word
processing and power point presentations. Extrinsic factors which had to do with the environment, the available support and training, intrinsic factors which had to do with teachers’ beliefs about technology use as well as contextual factors including (but not limited to) teachers’ beliefs about their students, mixed-ability classes and teachers’ age appear to exert a great influence on teachers’ CALL.

The study argues that teachers are the most important players in fostering meaningful technology integration. Thus, the Ministry of Education and Culture in Cyprus will have to recognize the importance of teacher education and provide teachers with continuous training and support, while providing up-to-date technology equipment in schools and computers readily available (which is a precondition). It also argues that teachers’ use of computer technology will need to be extended beyond the LR, and even beyond the classroom and school. Since, prior experience with computers, technical knowledge and the location of computers can help teachers to become better CALL users, providing teachers with facilities in schools for personal use, in other words, extending the digital environment beyond the LR and the classroom, will in a way empower teachers by helping them to acquire this kind of knowledge and experience. The study also makes the claim that the benefits from technology use by teachers may increase if students themselves are able to use ICT in the learning process both in class and at home. In other words, schools and teachers should be encouraged to develop a modern environment, with a view to link students’ school life with what they do with computers beyond school. These conditions, together with appropriate personalized training which would affect teachers’ skills and their point of view about CALL, would be a big step towards strengthening and fostering meaningful CALL use.
Chapter 6 - Conclusion

In this chapter I present the future implications, strengths and limitations of the study, as well as contributions to future research, and suggestions as to how research might be further developed.

As this study has shown, EFL teachers’ CALL and IT use in state secondary education in Cyprus tends to be limited to searching the Internet mainly for additional information to supplement or reinforce the textbook, to download a short video to motivate students or word processing and power point presentations. The factors that influence teachers’ decisions regarding CALL use were primarily connected with the environment, support, training and teachers’ beliefs, all of which may have serious implications for the Ministry of Education and Culture (decision makers/curriculum designers/English language teacher trainers/inspectors of English) as well as teachers themselves.

6.1 Implications

6.1.1 Implications for the Ministry of Education and Culture

a) The availability of all hardware and software is centrally managed in Cyprus, and providing schools with the required CALL facilities is entirely the responsibility of the Ministry of Education and Culture. The Ministry needs to distribute equipment in schools according to the demands of each school, taking as the starting point the needs of the teachers working there. Periodic evaluation of the use of computer resources and facilities will help to depict the degree of response in each setting.

b) The Ministry will need to consider the limitations that exist in classrooms and provide all classrooms with computers, access to the Internet and a permanent video projector rather than in the Language Room – only, which has to be shared and booked in advance - or at least ensure properly equipped Language Rooms. The need to equip all classrooms with computers, an Internet connection and a video projector is vital as
these resources need to be available for teachers. Hence, scheduling, the overbooking of the LR and many problems arising from time constraints will be eliminated.

c) Ensuring that tools and facilities are easily accessible might encourage teachers to use them whenever they want. When computers are readily available at school and in the classroom, teachers may use them at any time throughout the day, for various everyday activities, including personal use. This may help teachers to gain greater confidence in using technology.

d) The Ministry will need to provide more support, particularly human support. One way of handling this may be to ensure that the person selected by the ministry each year to be in charge of the LR is an EFL teacher who can model CALL and IT use, as well as provide on-demand support. It may also be helpful to provide teachers in charge of the LR with both technical and pedagogical knowledge, which in turn may pass on to other EFL teachers in their school. In such a case, technological use is likely to be kept more relevant, and time and funds will be kept at a minimum, with teachers being provided with answers to their individual concerns.

e) There is a need to set up systems so there is back-up equipment in case of a breakdown, and systematic ways to get equipment repaired or replaced.

f) There is a need for the Ministry of Education and culture to consider the scope for the development of supplementary materials to match national needs. One possible way of dealing with this problem might be to encourage schools to specify a place within the school network or set up a web site they can all visit and contribute to. This could encourage more sharing and cooperation among teachers, but it would also save them a lot of time as they would not have to look for all the information and resources they needed on their own or create all the supplementary materials by themselves. However, it may be the case that there are teachers who would not take the time to visit this website. An effective - parallel solution - would be to produce supplementary material that matches the level and content of the textbooks or choose textbooks that include CALL activities; otherwise those teachers who are heavily dependent on the textbook may never use this supplementary material or never produce any material on their own.
g) There is a need for the Ministry of Education and culture to consider the scope for the development of supplementary materials to match national needs. One possible way of dealing with this problem might be to encourage schools to specify a place within the school network or set up a web site they can all visit and contribute to. This could encourage more sharing and cooperation among teachers, but it would also save them a lot of time as they would not have to look for all the information and resources they needed on their own or create all the supplementary materials by themselves. However, it may be the case that there are teachers who would not take the time to visit this website. An effective parallel solutions would be to produce supplementary material that matches the level and content of the textbooks or choose textbooks that include CALL activities; otherwise those teachers who are heavily dependent on the textbook may never use this supplementary material or never produce any material on their own.

h) Time is one of the most significant barriers reported by teachers, and as it is often associated with funding I shall make certain suggestions that do not necessarily involve additional funds: a) The content of the two compulsory seminars organised by the inspectorate (Chapter One section 1.4.5) may be designed to match teachers’ needs in terms of CALL and IT use. This may call for better-equipped teacher educators or CALL specialists. b) The first two weeks in September and the last two weeks in June may be used for on-site workshops. This is the time when EFL teachers have sufficient time at their disposal to receive training.

i) Teachers will need to be encouraged to engage in professional development activities and provide incentives (e.g. release time, financial compensation and recognition) so that teachers are better motivated to attend training sessions in their own time. For example, teachers who try on their own to develop professionally using their own time and money should be rewarded

i) A syllabus and (Pancyprian) examinations that will foster interaction, self-direction, networking and other elements which are essential in honing 21st century skills will need to be implemented. This will require integration of ICT and its pedagogical use in the curriculum for students, as well as in teacher training.
6.1.2 *Implications for teachers*

1. Teachers need to perceive training as both a right and a duty which might cause them to take responsibility for their own professional development. To do this, they need to be reflective teachers, and language teacher education will have to contribute to this.

2. Teachers need to engage in professional development activities such as the following:

- Sharing and collaborating with other colleagues
- Observing one another
- Organize opportunities to reflect upon their teaching practices in terms of CALL integration e.g. during the weekly coordination session.

If teachers organize a departmental approach to the use of technology, all the EFL staff get involved in familiarizing themselves with CALL and IT. Perhaps this could be done once a week during the coordination session (one period) in each school. In this way, teachers gradually become more aware of what facilities are available, and when and how to use them.

6.2 *Strengths and Limitations of the Study*

As with all research, and with qualitative research in particular, it is important to recognize both the strengths of the research methodology and the limitations. The strengths of the study include the multiple data collection methods used. Indeed, in combining information obtained from the questionnaire, the interview and classroom observation rather than relying on self-report data and quantitative research approach only, like most previous research validated to a great extent the findings of the study. An additional strength of the present study is that having a study conducted by an EFL teacher herself has a positive effect in terms of the interpretations provided.

Nonetheless, in this particular research, several limitations should be kept in mind when reading the interpretations. It seems that time proves to be one of the biggest weaknesses. Prolonged engagement, particularly when it comes to classroom
observation, is indeed one of the primary underpinnings of really solid qualitative research. The twelve-week time frame may have limited the outcomes of the study. A further weakness in terms of the time factor is the time of year the study took place. March April and May are the months teachers particularly in Upper Secondary schools begin to prepare for the Pancyprian Entrance Examinations. (Students take these highly competitive exams in an effort to secure a place at a university in Cyprus or Greece).

In addition, the 61 participants may or may not have been representative of the average EFL teacher in secondary education in Cyprus. The teachers who volunteered to be either interviewed or observed may, for instance, have been more reflective teachers than others, or they may have held more constructivist views with an exceptionally positive attitude to anything including technology which may have biased the findings. Nonetheless, due to the small size of the country and the small number of EFL teachers in public secondary schools in Cyprus, the results may prove to be useful to the entire EFL population.

An additional, major limitation of the study is the absence of student participation. Further weaknesses have to do with the data provided by the teachers in my school and classroom observations. The data from these teachers may have been rather misleading, as being their coordinator may have caused them to respond in a way they thought it was expected of them. Richards (2003, p. 60) explains, that confirming the truth of what one hears is not simple; being in the same school as me, however, I am inclined to believe that it is quite unlikely that these teachers acted in bad faith. As for classroom observations, they should have been more systematic and should also have been discussed in follow up discussions. Owing to time constraints I was unable to conduct a pre-conference, or more importantly a post-conference session to discuss the lessons I observed. This would have acted act as an additional attempt at validation, and would have served to decrease the incidence of incorrect data and incorrect interpretation of data. Finally, I could have used data collection types, such as documents which in this study would be A4 forms that teachers conducting a class in the LR have to fill in before leaving the classroom, stating what use they have made of the equipment available (which are, however, not available in all schools).
6.3 Contributions of the Study and Future Research

This research study has investigated the use of CALL for EFL teachers in secondary education in Cyprus, teachers’ beliefs about using technology in their teaching and the factors affecting teachers’ CALL use. The primary significance of the study lies in the initial step that it takes towards investigating EFL teachers’ CALL and IT use in Cyprus. The results of the study provide the Ministry of Education and culture with a picture of the current situation in secondary schools. They reveal how computers are currently used, what teachers’ beliefs about technology use might be and the factors that exert a great influence on CALL use. The results may serve as a prime opportunity that may guide the Ministry in their thinking about how to plan and design English language teacher education for technology, and what type of training and support teachers need to ensure that the potential of CALL is realized. The study might also help the Ministry to consider the manner in which equipment is distributed, and perhaps start to become less centralized, encouraging a certain amount of autonomy among schools. This would be a step forward towards equipping schools better as the one-size-fit-all distribution of equipment and technical support would be avoided. Schools for example, with a larger number of language teachers (English, French, Russian, Italian, Spanish, etc) should be provided with more facilities and resources, and more technical support.

As it is argued by Cohen & Manion (1994), observations have contextual relevance not only in the immediate context but also in further settings beyond. With such an approach the assumption is made that the findings of the present study are not only beneficial to secondary schools involved in the study but also to other secondary institutions in Cyprus and elsewhere, with a similar profile.

As one of the limitations of this study is the absence of student participation, future research examining students perspectives about CALL and IT use in the English class may provide useful insights. For example, such research may consider what kind of tasks students want to do using technology, what kind of activities they use computers for at home and whether they lack computer skills in computer applications that can enhance their learning or whether their low proficiency in the English language is a
deterrent. This will serve to provide information about whether students need direct instruction in using computer technology applications efficiently in the English classroom, and for homework.

In addition, future studies exploring students’ beliefs in integrating technology in the English class and the extent of CALL use by English language teachers from the point of view of students, may serve to shed light on issues that teachers may misinterpret. Research involving students will also show whether the age gap between teachers and students is, indeed, a deterrent. If this is the case, it may have serious implications for the appointment system (where age carries more weight than all other criteria) and the Educational Service Commission.

The differences between CALL and IT use in the classroom and traditional classroom-based instruction, as well as the teachers’ desire to incorporate technology, call for research to explore the abilities that teachers need to have to be able to effectively integrate CALL and network-based education. This would provide insights into the reasons as to why teachers behaved the way they did.

This study also emphasizes the continuing need for studies to indicate how language teacher education facilitates teachers’ implementation of CALL. As one of the things teachers need most is differentiated computer and IT skills and knowledge, future research might well examine the impact which in-service training has on teachers’ work. In other words, an evaluation of training to ascertain what happens once the training is over, what teachers make of the training they have received and whether follow up seminars are needed is necessary; otherwise, it is plausible that most of what takes place in seminars or workshops might hardly ever make its way into the classroom and innovative teaching practices in general, or else the integration of computers in particular will be restricted to the very few.

Research might also examine pre-service teacher education programmes in terms of whether positive attitudes to computers which as Teo (2010) argues, are easier to develop during pre-service training, and may enhance CALL integration at an in-service level..
6.4 Final Word

It seems to be the case that that no single factor is sufficient to bring about CALL integration on its own. As Smith et al., (2003) observe, professional development, while necessary, is just one tool, and thus not sufficient in itself to make changes (p. 12). It seems that whatever steps language teacher education makes, or however abundant resources in educational institutions are or however supportive an institution is, the most significant factor or 'most important catalyst' (Brown, 1999; Wolff, 2002; Fulkerth, 1992, p. 1 cited in Mcgrail, 2005, Teo, 2010) for computer integration is the teacher herself. Interestingly, however, CALL is different and more complex than other types of ELT. Teachers appear to lack confidence in using technology as teachers need to acquire certain skills not required in a traditional classroom. Since teachers who are involved in professional development activities are more likely not only to use computers in their teaching, but to use them in exemplary ways, it seems inevitable that what teachers need most is training that will help them relieve anxiety and build up confidence. By acquiring computer skills that are both generic and specific to their pedagogical needs, and by being provided with on-site opportunities to observe other colleagues, teachers will become more competent uses of CALL and IT. As a result, if we want to maximize CALL integration with a view to enhancing student learning, we should invest time, money, and technological resources in the teacher as it is the teacher that can have the greatest impact on our students.

To sum up, it seems clear, that lack of access to computers and the Internet decreases the materials and resources available to teachers, as well as the opportunities for professional development using fast and inexpensive methods. When any one of these is absent, CALL use can prove difficult to employ; and when all these are coupled with lack of training and lack of human support, then, in my opinion, CALL use may be almost utopian or unrealizable. Since the quality of the teacher is most likely to determine the quality of instruction, teachers need to be provided with training and professional development opportunities (with a focus on professional growth) which will enable them to become competent and confident in creating the best possible learning opportunities for their students. The data should cause the Ministry of Education and
Culture, particularly inspectors and teacher educators, to start to consider language teacher education in computer technology if they wish teachers' use of CALL in the next few years to differ from the most recent.
Appendix A - Questionnaire

Beliefs in CALL and IT Questionnaire

This questionnaire has been designed to find out how you go about CALL (computer assisted language learning) and IT (information technology). There are a number of questions, in four sections, which together will give me a general picture of your computer technology use, your beliefs about CALL and IT as well as your views of in-service provision and support in IT for English language teaching.

For the survey to be most useful, it is important that you respond as honestly as you can.

Before you start answering the questions in the four sections, could you please give me some background information? This information is CONFIDENTIAL.

Background information

1. □ Male  □ Female (please tick)  □

2. Age (please tick)
   □ 30 or under □ 31 – 40 □ 41 – 50 □ 51 – 60

3. I have been teaching English in state secondary education in Cyprus for: (please tick)
   □ 1 – 2 years □ 3 – 5 years □ 6 – 10 years □ 11 – 15 years □ 16 +

4. I am teaching in a(n): (please tick)
   □ Lower Secondary (Gymnasium) □ Upper Secondary (Lyceum)

5. Position held at the institution where I work: (please tick)
   □ Teacher □ Assistant principal

6. My highest academic qualification is a(n): (please tick)
   □ B.A. □ M.A. □ EdD/PhD □ Other (please specify) ……………….
7. Our school has the following facilities/IT tools available for the English classes: (please tick all that apply)

- [ ] Language Room
- [ ] Computers
- [ ] Laptops
- [ ] Internet
- [ ] Wireless Internet
- [ ] Other (please specify) ………………………

8. I have access to the facilities/ tools available in my school any time during the school day. (please tick)

- [ ] Yes
- [ ] No

9. I use a computer at: (please tick all that apply)

- [ ] Staff room
- [ ] Classroom
- [ ] Office
- [ ] Home
- [ ] Other (please specify) ………………………………………

A. About your current use of technology

10. How often do you go into the Language room? (please tick)

- [ ] Never
- [ ] 1 period (45") a week
- [ ] 2-3 periods a week
- [ ] 4-6 periods a week
- [ ] More than 6 periods a week

11. What equipment do you use? (please tick all that apply)

- [ ] Tape recorder
- [ ] CD player
- [ ] Television
- [ ] Computer
- [ ] Other (please specify) ………………………

12. What do you use the computer for? (please tick all that apply)

- [ ] Word processing
- [ ] Power point presentations
- [ ] Internet
- [ ] Other (please specify) ………………………
13. What do you use the Internet for? (please tick all that apply)

☐ Searching for teaching purposes  ☐ Web 2.0 tools  ☐ E-learning materials

☐ E-mailing  ☐ Web design  ☐ Other (please specify) ………………………

14. Do you ever ask students to do homework using a computer?

☐ Yes  ☐ No

B. About your beliefs/feelings

Mark your response by ticking one of the boxes. 1=strongly disagree), 5=strongly agree

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

15. I feel comfortable teaching my classes in the Language Room.

16. It is very important to use computers/IT in my teaching.

17. It always worries me that something will break down.

18. Technology (computers/IT) positively affects student learning.

19. I prefer teaching in the conventional classroom.

20. Computers/IT have affected the way I use materials.

21. Computers/IT have affected the way I use activities.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>22.</td>
<td>As a teacher I feel threatened by technology (computers/IT).</td>
</tr>
<tr>
<td>23.</td>
<td>Computers/IT have improved my class presentation.</td>
</tr>
<tr>
<td>24.</td>
<td>I use the Internet searching information that I need for teaching.</td>
</tr>
<tr>
<td>25.</td>
<td>Computers/IT improve language skills.</td>
</tr>
<tr>
<td>26.</td>
<td>As a teacher I welcome the introduction of computers/IT.</td>
</tr>
<tr>
<td>27.</td>
<td>I believe that students enjoy classes more in the <em>Language Room</em>.</td>
</tr>
<tr>
<td>28.</td>
<td>Technology makes learning more motivating.</td>
</tr>
<tr>
<td>29.</td>
<td>I think my students prefer the conventional classroom.</td>
</tr>
<tr>
<td>30.</td>
<td>I think my students are pleased with the way I use the <em>Language Room</em>.</td>
</tr>
</tbody>
</table>
**C. About your training**

Mark your response by ticking one of the boxes. 1=strongly disagree 5=strongly agree

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>31.</strong> I have little or no knowledge of information technology in education.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>32.</strong> I have received teacher training using computers/ICT in English language teaching.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>33.</strong> There are in-service workshops or seminars on technology use available which I can attend.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>34.</strong> I learned how to use technology through in-service courses.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**D. Support**

Mark your response by ticking one of the boxes. 1=strongly disagree, 5=strongly agree

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>35.</strong> I need support in using computer software.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>36.</strong> I have guidance in using computers and IT at my school.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>37.</strong> I need guidance in using computers and IT in my teaching.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>38.</strong> I have support in using computers and IT in my teaching.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>I need support in using computers and IT in my teaching.</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>There is a lack of resources at my school.</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>I can handle most of the technical problems by myself</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>There is an adequate number of computers for my students</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>There is always help available if I need it.</td>
<td></td>
</tr>
</tbody>
</table>

44. I am interested in a follow-up interview (please tick)  ☐ Yes  ☐ No

If you have responded ‘yes’ please leave the following contact details so that I will be able to contact you and arrange a time for the interview.

Name: .........................................

Contact telephone : .............................

E-mail: .........................................

Thanks for your cooperation
Appendix B - Question guideline for the oral interview

(adapted from Lam, 2000; Acikalin, 2009)

1. What does the term 'computer-assisted language learning' (CALL) mean to you?
2. Have you ever used CALL? How did you find it?
3. Have you ever used computers in your teaching? In what ways?
4. Why did you use/didn't use computers in your teaching? In what ways?
5. How do you see the role of the Internet in the English language classroom?
6. Can you give examples for possible internet use in the English language classroom?
7. What are the advantages of using CALL and IT in the English language classroom?
8. What are the disadvantages of using CALL and IT in the English language classroom?
9. Describe a way that explains how you would use CALL and IT in your classroom.
10. Have you experienced any difficulties using CALL and IT in your teaching?
11. Has using computers and the Internet influenced your teaching in any way?
12. How important do you feel it is to use technology in English language teaching?
13. At the institution where you teach, is there support for teachers wishing to use technology in English language teaching? What type of support?
14. What type of support would you like to see made available?
15. What are the attitudes of the principal/inspectors/other teachers/the students?
16. How did you start using technology in your classroom? Has anyone ever talked to you about it or have you read something about it?
17. As a teacher, do you feel threatened by advancements in educational technology, or do you welcome it?
# Appendix C - Observation Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>School</th>
<th>Teacher</th>
<th>Description of Events/Technology use</th>
<th>Comments</th>
</tr>
</thead>
</table>


Appendix D - Cover letter

Before agreeing to participate in this research study, it is important that you read the following explanation of the study. This statement describes the purpose, procedures, benefits and discomfts of the study.

**Title of Research:** Exploring English teachers' beliefs in IT and in-service provision in IT for English language teaching in secondary schools in Cyprus.

My name is Maria Papayianni. I am a teacher of English and assistant principal at Lefkara Secondary School, Cyprus, enrolled for a doctorate degree at the Department of TESOL, School of Education and Lifelong Learning, University of Exeter, UK and am conducting research for the purpose of my thesis. My research has to do with EFL teachers’ CALL (computer assisted language learning) and IT (information technology) use, teachers' beliefs regarding CALL and IT and in-service provision in IT for English language teaching in secondary schools in Cyprus. It will help to identify the reasons why English language teachers do or do not use CALL and IT and the factors that influence these decisions. For the survey to be most useful, it is important that you respond as honestly as you can.

It is not my intention to evaluate your teaching or to test your knowledge. Rather, I believe that such a perspective can offer a descriptive account of why teachers do what they do and provide the basis for teacher development.

As an English language teacher, you are invited to take part in my research. All your responses will be treated confidentially and no one except myself will have access to the information you that provide. Neither your name or the name of your school will be used in any reporting of the research. You may withdraw information at any time before 31st May, 2010, without giving reasons or being disadvantaged.

The questionnaire will take 15-20 minutes to complete and I would appreciate any assistance you can offer me. Your assistance would involve the following:

1. Complete the consent form and the attached questionnaire.
2. Seal the completed consent form and questionnaire in the envelope provided.
3. Hand the sealed envelope to the assistant principal, it was delivered to you by, who will return it to me.

Many thanks, Maria Papayianni

Contact details: Post address: 17, Anexartesias Street, Lakatamia, 2324
Tel: 96387374  Email: papayiannimaria@gmail.com
Appendix E – Research consent form

GRADUATE SCHOOL OF EDUCATION

CONSENT FORM

I have been fully informed about the aims and purposes of the project.

I understand that:

there is no compulsion for me to participate in this research project and, if I do choose to participate, I may at any stage withdraw my participation.

I have the right to refuse permission for the publication of any information about me.

any information which I give will be used solely for the purposes of this research project, which may include publications.

If applicable, the information, which I give, may be shared between any of the other researcher(s) participating in this project in an anonymised form.

all information I give will be treated as confidential.

the researcher(s) will make every effort to preserve my anonymity.

.......................................................... ............................
(Signature of participant) (Date)

..........................................................
(Printed name of participant)

One copy of this form will be kept by the participant; a second copy will be kept by the researcher(s).

Contact phone number of researcher(s): ..........................................

If you have any concerns about the project that you would like to discuss, please contact:

..........................................................................................................................

OR

..........................................................................................................................

Data Protection Act: The University of Exeter is a data collector and is registered with the Office of the Data Protection Commissioner as required to do under the Data Protection Act 1998. The information you provide will be used for research purposes and will be processed in accordance with the University’s regulations and current data protection legislation. Data will be confidential to the researcher(s) and will not be disclosed to any unauthorised third parties without further agreement by the participant. Reports based on the data will be in anonymised form.
ΚΥΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ ΚΑΙ ΠΟΛΙΤΙΣΜΟΥ
Αρ. Φακ.: 7.19.46.7/14
Αρ. Τηλ.: 22800630/631
Αρ. Φαξ: 22428268
E-mail: circulassoc@schools.ac.cy

12 Νοεμβρίου 2009

Κυρία
Παπαγάνη Μαρία
Ανεξαρτήσιας 17
2324 Λοκατάμεια
Λευκωσία

Θέμα: Παραγωγή σχεδίων για διεξαγωγή έρευνας σε σχολεία Μέσης Εκπαίδευσης

Αναφορικά με τη σχετική με το πιο πάνω θέμα αιτήσεις, ημερομηνίας 3 Νοεμβρίου 2009, πληροφορούμε ότι το αίτημα σας για διεξαγωγή έρευνας σε σχολεία Μέσης Εκπαίδευσης της Κύπρου με θέμα «Exploring English Teachers’ beliefs in it and in-service provision in it for English Language Teaching in Secondary Schools in Cyprus», στα πλαίσια διδακτικής διατροφής στο Πανεπιστήμιο Εξελεγκρινός, εγκρίνεται. Νοστίμα ότι θα λάβετε υπόψη τις εισηγήσεις του Κέντρου Εκπαιδευτικής Έρευνας και Αξιολόγησης, οι οποίες θα αποστέλλονται συνημμένα για δική σας ενημέρωση και θα τηρήσετε τις ακόλουθες προϋποθέσεις:

1. θα εξασφαλίσετε τη συγκατάθεση των Διευθυντών των σχολείων καθώς των εκπαιδευτικών, οι οποίοι θα συμμετάσχουν στην έρευνα,
2. η συμμετοχή των εκπαιδευτικών θα είναι προαιρετική,
3. θα εξασφαλίσετε τη συγκατάθεση των εκπαιδευτικών οι οποίοι θα συμμετάσχουν στην έρευνα,
4. δεν θα επηρεασθεί ο διδακτικός χρόνος και η ομαλή λειτουργία των σχολείων για τη διεξαγωγή της έρευνας,
5. θα χειριστείτε τα στοιχεία των εκπαιδευτικών με τέτοιο τρόπο, ώστε να διασφαλίσετε πλήρη συνωστισμό τους,
6. για τη χρήση μαγνητοφώνου ή οποιασδήποτε άλλης μεθόδου για την καταγραφή των συνεντεύξεων θα πρέπει πρώτα να ενημερωθεί το σχολείο όσο και οι εκπαιδευτικοί και θα εξασφαλίσετε άδεια από τους συμμετέχοντες και τέλος,
7. τα αποτελέσματα της έρευνας θα κοινοποιηθούν στο Υπουργείο Παιδείας και Πολιτισμού.

Ευχαριστώ καλή επιτυχία στους ερευνητικούς σας σκοπούς.

Α. Π.
Δρ. Ζήνη Πρόκλη
Διευθύντρια Μέσης Εκπαίδευσης

Υπουργείο Παιδείας και Πολιτισμού 1434 Λευκωσία
Appendix G – Research Permission

(Translation from Greek)

Ministry of Education and Culture
Department of Secondary Education
Telephone: 22800630/631
Fax number: 22428268

November 12, 2009

Ms Maria Papayianni
17, Anexartesias street,
2324, Lakatamia
Nicosia

Subject: Approval for conducting research in secondary schools

In reply to your request to the Education Research and Evaluation Centre on November 3, 2009, I would like to inform you that your application to conduct a research study during the current academic year 2009-2010 under the following topic: “Exploring English Teachers’ beliefs in IT and in-service provision in IT for English language teaching in secondary Schools in Cyprus” has been approved.

The following research, however, can only take place under certain conditions.

1. You should receive an approval from the head of each school and the teachers who will participate in your research.

2. Teachers’ participation must be optional.

3. You should have the teachers’ consent.

4. The research must not cause any disruption in schools or affect teachers’ teaching time.

5. The data collected should be confidential and anonymous and used for no purposes other than the purposes of your research.

6. For the recordings you should have permission from the head of each school as well as the participating teachers’ consent.

7. The findings of your study will be made available to the Department of Secondary Education, Ministry of education and Culture.

Wishing you every success in your research,

Yours sincerely,

Dr. Zina Poulli
Director of Secondary Education
# Appendix H – Descriptive Statistics

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (4 groups)</td>
<td>58</td>
<td>2</td>
<td>4</td>
<td>3.50</td>
<td>.538</td>
</tr>
<tr>
<td>3. I have been teaching English as a foreign language for</td>
<td>59</td>
<td>2</td>
<td>4</td>
<td>3.73</td>
<td>.582</td>
</tr>
<tr>
<td>4. I am teaching in a(n):</td>
<td>57</td>
<td>1</td>
<td>2</td>
<td>1.72</td>
<td>.453</td>
</tr>
<tr>
<td>10. How often do you go into the Language room?</td>
<td>56</td>
<td>1</td>
<td>5</td>
<td>2.93</td>
<td>1.042</td>
</tr>
<tr>
<td>14. Do you ever ask students to do homework using a computer?</td>
<td>61</td>
<td>1</td>
<td>2</td>
<td>1.28</td>
<td>.452</td>
</tr>
<tr>
<td>15. I feel comfortable teaching my classes in the Language Room.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.46</td>
<td>1.119</td>
</tr>
<tr>
<td>16. It is very important to use computers/IT in my teaching.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.70</td>
<td>.962</td>
</tr>
<tr>
<td>17. It always worries me that something will break down.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.33</td>
<td>.995</td>
</tr>
<tr>
<td>18. Technology (computers/IT) positively affects student learning.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.75</td>
<td>.925</td>
</tr>
<tr>
<td>19. I prefer teaching in the conventional classroom.</td>
<td>59</td>
<td>1</td>
<td>5</td>
<td>3.08</td>
<td>1.039</td>
</tr>
<tr>
<td>20. Computers/IT have affected the way I use materials.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.36</td>
<td>.949</td>
</tr>
<tr>
<td>21. Computers/IT have affected the way I use activities.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.30</td>
<td>.926</td>
</tr>
<tr>
<td>22. As a teacher I feel threatened by technology (computers/IT).</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.65</td>
<td>1.246</td>
</tr>
<tr>
<td>23. Computers/IT have improved my class presentation.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.30</td>
<td>1.154</td>
</tr>
<tr>
<td>24. I use the Internet searching information that I need for teaching.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.89</td>
<td>1.156</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>25. Computers/IT improve language skills.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>4.16</td>
<td>.757</td>
</tr>
<tr>
<td>26. As a teacher I welcome the introduction of computers/IT.</td>
<td>61</td>
<td>3</td>
<td>5</td>
<td>4.43</td>
<td>.618</td>
</tr>
<tr>
<td>27. I believe that students enjoy classes more in the Language Room.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.90</td>
<td>.907</td>
</tr>
<tr>
<td>28. Technology makes learning more motivating.</td>
<td>61</td>
<td>2</td>
<td>5</td>
<td>4.30</td>
<td>.803</td>
</tr>
<tr>
<td>29. I think my students prefer the conventional classroom.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>2.36</td>
<td>1.065</td>
</tr>
<tr>
<td>30. I think my students are pleased with the way I use the Language Room.</td>
<td>59</td>
<td>1</td>
<td>5</td>
<td>3.07</td>
<td>.998</td>
</tr>
<tr>
<td>31. I have little or no knowledge of information technology in education.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.05</td>
<td>1.244</td>
</tr>
<tr>
<td>32. I have received teacher training using computers/ICT in English language teaching.</td>
<td>59</td>
<td>1</td>
<td>5</td>
<td>2.20</td>
<td>1.323</td>
</tr>
<tr>
<td>33. There are in-service workshops or seminars on technology use available which I can attend.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.72</td>
<td>1.043</td>
</tr>
<tr>
<td>34. I learned how to use technology through in-service courses.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.08</td>
<td>1.109</td>
</tr>
<tr>
<td>35. I need support in using computer software.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.90</td>
<td>1.121</td>
</tr>
<tr>
<td>36. I have guidance in using computers and IT at my school.</td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>1.80</td>
<td>.917</td>
</tr>
<tr>
<td>37. I need guidance in using computers and IT in my teaching.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.75</td>
<td>1.220</td>
</tr>
<tr>
<td>38. I have support in using computers and IT in my teaching.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>1.98</td>
<td>1.147</td>
</tr>
<tr>
<td>39. I need support in using computers and IT in my teaching.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.75</td>
<td>1.325</td>
</tr>
<tr>
<td>40. There is a lack of resources at my school.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>3.57</td>
<td>1.147</td>
</tr>
<tr>
<td>41. I can handle most of the technical problems by myself</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>2.25</td>
<td>1.206</td>
</tr>
<tr>
<td>42. There is an adequate number of computers for my students</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>1.72</td>
<td>1.002</td>
</tr>
<tr>
<td>43. There is always help available if I need it.</td>
<td>61</td>
<td>1</td>
<td>5</td>
<td>2.16</td>
<td>1.293</td>
</tr>
<tr>
<td>44. I am interested in a follow-up interview</td>
<td>55</td>
<td>1</td>
<td>2</td>
<td>1.71</td>
<td>.458</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Appendix I

## I need support in using computer software.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4</td>
<td>6,6</td>
<td>6,6</td>
<td>6,6</td>
</tr>
<tr>
<td>Disagree</td>
<td>4</td>
<td>6,6</td>
<td>6,6</td>
<td>13,1</td>
</tr>
<tr>
<td>Neutral</td>
<td>5</td>
<td>8,2</td>
<td>8,2</td>
<td>21,3</td>
</tr>
<tr>
<td>Agree</td>
<td>29</td>
<td>47,5</td>
<td>47,5</td>
<td>68,9</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>19</td>
<td>31,1</td>
<td>31,1</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
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## I need guidance in using computers and IT in my teaching.

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Appendix I (Cont/d)

I need support in using computers and IT in my teaching.

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There is a lack of resources at my school.

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Appendix J

There is an adequate number of computers for my students

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There is always help available if I need it.

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Appendix K – Questionnaire items 32 and 34

**I have received teacher training using computers/ICT in English language teaching.**

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Appendix K – Questionnaire items 32 and 34 (cont/d)

**I learned how to use technology through in-service courses.**

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Appendix L – Sample of my manual analysis

CALL use for English language teachers

Environment for CALL in EFL classrooms

There aren’t enough computers and those available are not always working. How can I possibly integrate technology when there is not even one computer for every five students? (Andrie)

Our Language room is not suitable for 20 students. It has only got four computers, you need to be really lucky to get all four working, usually it’s just one or none. (Stalo)

The available facilities for teaching English using technology in my school are kind of disappointing. There are not enough computers just five and those computers are only available in the Language Room and this room is shared by all language teachers, Greek teachers, French teachers, Italian, Spanish etc. which means that we can’t take our students there whenever we want. We can’t even go there when we have a period off and use the computers because it is almost always occupied by another teacher. (Yiola)

Believe it or not there’s no Internet connection in the Language Room. (Rina)

At the beginning of the year Internet connection in the Language Room seemed very distant. (Chrysa).

In my school we don’t have access to the Internet in the Language Room so I wish to find something additional to use in my classes I search the Internet at home. (Nicos)

One major problem for me is that computers and the Internet are only available for the EFL teachers in the Language Room and they have to be shared by all the other
language teachers which means you cannot use the facilities there because of over booking.

One of the main difficulties is that in my school it is difficult to access the facilities available when I want to use them. Computers and the Internet, for instance, are only available in the Language Room and accessing them is really a problem. The LR is located at one end of the school far from all other classrooms and when you are scheduled to have a class there you will get 5 minutes late ... by the time you have locked the room and taken the key back or waited for the next teacher to hand the key you will be at least 10 minutes late for your next lesson. (Yianna)

As long as technology facilities are difficult to access, locked in the LR and you don’t even have the key it can be frustrating. (Ellie)

support for CALL in EFL classrooms

“This is a problem in my school. We don’t have enough support to use computers in our lessons. Our inspectors and teacher educators push for technology but I don’t really think they want or are able to provide us with answers to the problems we’re facing regarding technology use”. (Nicos)

“Teachers in my school do not have adequate support to use computers in class. I know that we are expected by our inspectors to use technology in our lessons but they seem unwilling or unable to help us. In my school we’ve got a computer teacher who is supposed to provide help when needed but because all of us depend on one colleague it is often impossible to get help. Personally I often find it embarrassing to ask for help as this colleague is so busy. We get very little support and personally I avoid asking for help as often as I would like to because it makes me feel like a burden{…} the computer teacher who has a duty to attend to technical problems is so busy...so I sometimes try to find another colleague, a volunteer but when you know that you are asking help from someone who doesn’t have to help you it's just too embarrassing to ask for a second or third time…students are not always in a position to help and anyway the main support we need is not the kind of support that can come from the students...using technology
in class is not about restarting the computer or other technical problems of this nature. (Andrie)

“I’m **not happy at all with the available support**. {...} **One or two are for ever broken** but even if they were working you still can’t get 20-24 students to work with just four computers. There are two computer labs, though, in my school which are exclusively used by computer teachers. Last month to conduct a class in the computer lab I had to obtain permission from the school principal and make special arrangements even change the schedule of a computer teacher. **I had to spend so much time to find a place with enough computers** as neither the school principal nor my colleague were available that it makes you wonder whether it’s worth the effort”. (Stalo)

“I’m afraid there is **very little support or guidance**. It makes me unhappy having to depend on one colleague for help especially when you are in the middle of a class, something stops working and there is chaos”. (Rina).

“No, the **available support is not enough at all**. Our inspectors suggest we get help from our students but personally I don’t really think it is such a good idea although I do ask my students for help. I **would be happier though if I was able to handle technical problems myself. I find it embarrassing and extremely time consuming to get help**. ”(Yianna)

“The **available help is inadequate**. It’s embarrassing and time consuming when you have to chase this colleague around the school to get help and the feeling is even worse when you have to do this more than once during the day.I don’t know but I think that in the end you just come to terms with the fact that perhaps it’s better not to use computers at all.” (Ellie).

*What kind of support they would like to see made available.*

“I’d also like to have somebody in my school to share these concerns with.” (Zina)

“I wish there was **more collaboration** among the other English teachers in my school. It’s important to have somebody to turn to for advice and guidance or share your ideas and worries with.
The coordination session we have once a week often seems like a waste of time… it has more to do with bureaucratic issues or it's like a coffee break… personally I don't find much support we don’t get the chance to talk about the problems we are facing with technology… nobody seems to really want to know”. (Froso)

"I think we need more support, we need to become more competent to handle problems on our own we don’t have help when we need it. You don’t always have students in your classes who can handle all technical problems which is what our inspectors suggest we do and the support we need does not always have to do with technical problems actually we need support and guidance in how to use computers in the English class because it is us who need to know how to integrate computers and teach students and not the other way around”. (Rina).

In my school we need more resources that would help us, I mean the English teachers, to integrate computers; not only more computers but supplementary material that matches our textbooks it would save us a lot of time.

Training

No, nobody has ever talked to me about how to use technology in my classes and I have never read anything about it. I can’t use computers. I think the two-hour in-service training our inspectors provide us with twice a year does not really correspond to what we need. The last compulsory seminar I attended was just theory, theory theory and about things we all know. Nothing about technology use. I think the ministry should organize training programmes to meet our personal needs. For example, they should help people like me who can’t use a computer to start using it, and to provide more advanced training to those teachers who do have computer skills but they want to learn how to integrate technology in the lesson at a more advanced level. (Froso)

Not really, I have never read anything about how to use technology but learned on my own. I also got help from my children (Ellie).

This is a sad story actually. We don’t get any training in computer technology. I feel that it is the responsibility of the ministry to find a way to train us in computer skills and how to use computers in our classes. We have so many things to do there’s no time for such things unless the training takes place during working hours I mean in the mornings. (Vaso)
No, I'm afraid not. And I think, actually, that the in-service training we get is not very useful. I attended a few compulsory two-hour in-service seminars spread out over a period of three years after the introduction of computers – but they weren’t very useful. The inspectors just led us into a discussion about the benefits of the language Room. No one wanted to know about our concerns. The two seminars conducted twice a year not only are they not enough but they are always like pla pla pla and on topics that teachers are not really interested in. It would be useful I think to have continuous in-service training in technology integration. (Yiola)

Not having any computer skills at all makes me feel I am at a disadvantageous position. I need training. {…} The ministry people will need to provide us with this training. (Zina)

There’s no training. We need training. Training in computer skills, training in pedagogical skills, training in technical skills. But where is training? (Maria)

I feel that I need training in how to use technology in my lessons. Time is a problem so the ministry has to find ways to provide this training when teachers are available which means that it has to take place at school because we haven’t got time in the afternoons. (Rina)

Beliefs about using technology in English Language teaching

“The role of technology is very important”. (Yiola)

“It’s role in motivating students is vital”. (Ellie)

Technology helps to make students show more interest in the lesson. It cannot be ignored. (Rina)

It can motivate students. I think it is more important in the English class than in other subjects. (Stalo)
The Internet is unique – it provides students and the teacher with authentic information that you cannot find anywhere else but I am careful when it comes to homework because despite the endless information available on the Internet, information is not knowledge. (Nicos)

It opens up a window to the rest of the world- it creates unique opportunities for authentic use of the language. (Chrysa)

"Very important. I would very much like to be able to use computers. I would be happier if the materials I use and the activities I use were more computer related. I'm not sure if technology enhances learning but I know that teachers who can use computers can motivate their students more easily…I think that in the end students will learn more because motivation enhances learning." (Andrie)

"I think that we cannot deny the importance of computers and not using them in the English class is not an option anymore. Not being able to use computer technology has put me at a disadvantage with my colleagues. I even avoid applying for any sort of seminar that may interest me for fear that it will be required of us to use a computer."(Froso)

“It is very important to use computers in teaching…for motivation. I feel I am in a disadvantaged position. It would give me a lot of satisfaction if I could use computers and the Internet in class. (Zina)

**EFL teachers’ CALL use**

Our textbook includes topics which i don’t know much about so i search the Internet to find extra information so that i have something more to say to my students but also it makes me feel more confident and more knowledgeable (laughter) when students ask
questions. For example when i had to do a text about *Macchu Picchu* i had no idea what that was so i found a lot of things on the Internet. (Vana)

The Internet is very important. I find a lot of information to supplement our book. “It's role in motivating students is vital. (Ellie)

You can motivate students by using a Youtube video for example. There are songs in our textbook with listening activities but I often search the Internet for a video because students find it a lot more interesting than just listening to it. (Ellie)

Searching the internet for information or a video to supplement the book is something that i often do because it makes the lesson more interesting. Students are really motivated when you play a video. For example there is a unit on the theme park *Alton Towers* in our book so i searched the Internet found a Youtube video and played it in class. I can’t tell you how much excitement this caused even those 2-3 students who never do anything they showed a lot of interest. (Maria)

I haven’t used them this year because now I only teach third year students who are taking the final exams i mean the Pancyprian exams and we don’t have time for that. (Yianna)

The truth is I only use them in class here and there. In fact, i only used them on two occasions when i was being observed and assessed by the inspector. But I always write my tests on the computer. It's been two or three years now that i haven’t given a handwritten test. I also use the word processor to write a worksheet for my students. (Yiola)

I have used the computer many times to write a test. This is the most frequent use for me but I also use a powerpoint slide show to present grammar because it is alot easier than writing on the board. You save time because you only prepare the same show once and you can use it year after year with all your classes. (Vaso)
Factors affecting teachers’ use of technology

Not having any computer skills makes me feel I am at a disadvantaged position {…} but you need time to learn and I have no time. I’m afraid; unless they make special arrangements during school hours. (Zina)

One of the main difficulties is time. You need more time to plan a lesson with technology than without it. (Vaso)

Lack of time. I’ve got so much to do. I wish I had more time then I would be able to get to know computer technology better. When I have a period off and could spend it in the Language Room either to prepare a lesson or experiment with computers the LR is occupied by another teacher. After school it is not possible for me to sit in front of the computer and practise. (Nicos)

The number one problem for me is lack of training. We don’t get the training we need in technology. I know it may cost a lot but even if the ministry can’t afford such training why don’t they tell us about CALL training courses specially designed for the EFL class, personally, I would more than happy to attend in the afternoon or on Saturdays anytime. (Vana)

Contextual factors

Our textbooks are basically grammar oriented and this does not help. Why not have use books which include activities that require computer technology? It would save us a lot of time because there is not enough time to plan a lesson with technology. (Maria)

I don’t use computers this year because now I only teach third year students who are taking the final exams I mean the Pancyprian exams and we don’t have time for that. (Yianna)
<table>
<thead>
<tr>
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<th>Teacher</th>
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<td>Rina</td>
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<td>-Lesson conducted in the Language Room which is equipped with two computers and Internet connection/no projector - Lesson delayed a few minutes to fetch the (portable) video projector from principal’s office Teacher – looking anxious-asks a student to connect it to the computer and he does Teacher seems to have used the video to arouse students’ interest in the topic. Low-level technology use/ All students seemed to be interested in the video. At the end of the video teacher asks if they have ever been to a zoo? some raise their hands and want to talk about the zoos they had been to with their</td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
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<td>Teacher</td>
<td>Description of Events/Technology use</td>
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<tr>
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<td>Stalo</td>
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<td>Lesson conducted in the computer lab (20 computers) as not enough computers in LR and no Internet connection - Technology access inadequate to meet lesson objective\nLearning environment - Teacher-centred/Teacher-student</td>
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</table>
interaction/no interaction with peers
- students work independently to find answers and write them on worksheet prepared by teacher/
Last 15’ checking answers with whole class and projects “model” answers on two slides she has prepared beforehand
- no choice / all students have same questions/same website
- no opportunities to use higher order thinking skills or collaborate with peers
Technologised traditional classroom

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<tr>
<td>22/04/2010</td>
<td>12:00-12:45</td>
<td>Upper Secondary</td>
<td>Yianna</td>
<td>Teachers asks class if they know what a theme park is. A couple of students raise their hands. One of them gives the answer. Teacher then tells class they are going to watch a video about a theme park/ 4’ Youtube video on Alton</td>
<td>Lesson conducted in LR 4 computers available/ Internet connection available All students seem interested in the video/theme park (Nemesis) / Some students don’t look interested in answering the</td>
</tr>
</tbody>
</table>
Towers

When video finishes teachers asks if they liked it. Many students shout “Yes”. Teachers gives out a worksheet with questions she prepared beforehand and asks students to answer them questions.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>School</th>
<th>Teacher</th>
<th>Description of Events/Technology use</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>23/04/2010</td>
<td>07:30-08:15</td>
<td>Upper Secondary</td>
<td>Chrysa</td>
<td>Videos made and presented by students (10”) - 4 students presented the advertisements they had made (using Movie maker) - the rest of the class formed groups of four or five and used evaluation sheet prepared by the teacher to evaluate them/ a great deal of student to student interaction in groups</td>
<td>LR not available/being used by another language teacher - Lesson conducted in computer lab - 4 students use technology directly - learning environment provided opportunities to use higher order skills for interaction with peers - teacher seems to want all students to be involved/ using student-centred approach (group work)</td>
</tr>
<tr>
<td>27/04/2010</td>
<td>09:15-10:00</td>
<td>Upper Secondary</td>
<td>Maria</td>
<td>Teacher starts lesson by saying</td>
<td>5 computers in available in LR</td>
</tr>
</tbody>
</table>
that they will continue to post their word grids in their class blog and asks students to share a computer with another student. Teachers reminds class that some students have already posted their word grids and asks these students to write another word grid in their notebooks. Teacher shows individual students where to sit.

- Some students rush to sit at a computer / some confusion about who is going to be sitting at a computer

Blogging (whole period)

- 3 connected to Internet
- 6 students sharing 3 computers
- Not enough computers for all students to post their grids
- High-level technology use by some students/two students sharing the same computer seemed to have some difficulty with posting their grids/did not seem to know how to do it. Teacher asks another student to help them.
- Technology used appropriate for level of curriculum

- Students seem engaged in the task / seem to be enjoying blogging

- Some students writing grids in their notebooks

- 2 students writing word grids using wordprocessor on the two computers without Internet connection
one student finishes her word grid and asks if she can post it /teacher says “there’s no computer available today but you posted one last week, didn’t you, why don’t you write another grid”

- girl looks disappointed and bored and starts talking to the person sitting next to her

- teacher does not seem to know how to organize and encourage differentiated, individualized learning

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>School</th>
<th>Teacher</th>
<th>Description of Events/Technology use</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>30/04/2010</td>
<td>08:15-09:00</td>
<td>Lower Secondary</td>
<td>Vana</td>
<td>Teacher starts the class saying that they are going to watch a video on deserts</td>
<td>Students watch video/all students seem interested in the video</td>
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<td>- Plays a 5' Youtube video on deserts</td>
<td>- students are asked to answer questions on a worksheet prepared by teacher(teacher centred)</td>
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<td>- teacher uses her own computer as none of the 4 computers are working/no Internet</td>
<td>- no interaction or collaboration with</td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>School</td>
<td>Teacher</td>
<td>Description of Events/Technology use</td>
<td>Comments</td>
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<tr>
<td>04/05/2010</td>
<td>09:15-10:00</td>
<td>Upper Secondary</td>
<td>Ellie</td>
<td>Teacher tells class they are going to watch a song which is in their book/ starts the Youtube video(song) which stops halfway/ there is sound but no picture Some students volunteer to help but cannot fix it/ teacher asks a student to go and bring computer teacher (colleague).</td>
<td>Lesson conducted in LR / 4 computers available / computer on teacher’s desk working / the other three can’t tell/ Internet connection available While teacher and class are waiting for help to arrive teacher apologizes to me/ teacher looks anxious / students noisy – playing.</td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>School</td>
<td>Teacher</td>
<td>Description of Events/Technology use</td>
<td>Comments</td>
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<tr>
<td>07/05/2010</td>
<td>12:00-12:45</td>
<td>Upper Secondary</td>
<td>Andrie</td>
<td>Power Point Presentation by 2 students on Egypt (whole period) Rest of the class watched the presentation</td>
<td>Lesson conducted in LR/ 6 computers available Lesson delayed because LR far from students’ chemistry lab where students had a Chemistry lesson before their English lesson. Direct use of technology by 2 students who seemed to have explored the topic/ technology used seemed appropriate for level and age of students teachers try to handle discipline by yelling -when student returns but no support arrives teacher looks/becomes even more anxious/frustrated Time wasted due to the technical problem / lesson disrupted/</td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>School</td>
<td>Teacher</td>
<td>Description of Events/Technology use</td>
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<tr>
<td>11/05/2010</td>
<td>12:00-12:45</td>
<td>Lower Secondary</td>
<td>Vaso</td>
<td>Teacher started the lesson by telling class they were going to learn how to form and use Simple past and Past Continuous</td>
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<td>- Teacher showed a 15' Power point presentation (presenting grammar rules with examples using Simple Past/Past Continuous Tenses) – more of a lecture</td>
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<td>- Teacher asked ss to take out activity books and do grammar activities on the two tenses</td>
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<td>Lesson conducted in LR/ 4 computers available</td>
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<td>- Low-level use of technology</td>
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<td>- Many ss watch and then do grammar activities on a worksheet and in their activity books</td>
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<td>- 3 ss talking during video/not watching</td>
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<td>- 4-5 students seem bored after first few minutes</td>
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<td>- No opportunities provided for creativity, problem solving etc.</td>
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<td>- If technology had not been used in this lesson what would not have been realized by teacher?</td>
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</table>
Appendix N - Profiles of teachers who participated in a follow-up interview

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Gender</th>
<th>Age</th>
<th>Teaching experience (in years)</th>
<th>CALL experience</th>
<th>Technology training</th>
<th>Type of School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rina</td>
<td>Female</td>
<td>51+</td>
<td>16+</td>
<td>Word processing; Searching the Internet for teaching purposes</td>
<td>Self-taught beginner in Word processing and Internet search</td>
<td>Lower Secondary</td>
</tr>
<tr>
<td>Stalo</td>
<td>Female</td>
<td>51+</td>
<td>16+</td>
<td>Word processing; PowerPoint presentations, searching the Internet for information to supplement textbook</td>
<td>Course in Word processing; Course in PowerPoint and Course in using ICT in the English language classroom</td>
<td>Upper Secondary</td>
</tr>
<tr>
<td>Yianna</td>
<td>Female</td>
<td>51+</td>
<td>11-15</td>
<td>Word processing; power point presentations; Searching Internet for information to supplement textbook; Emailing</td>
<td>Courses in Word processing and Power-Point; Self-taught beginner in Internet search</td>
<td>Upper Secondary</td>
</tr>
<tr>
<td>Chrysa</td>
<td>Female</td>
<td>41+</td>
<td>11-15</td>
<td>Word processing; PowerPoint presentation; Emailing;</td>
<td>Courses in Microsoft Word, PowerPoint and seminar in using</td>
<td>Upper Secondary</td>
</tr>
<tr>
<td>Name</td>
<td>Gender</td>
<td>Age</td>
<td>Experience</td>
<td>Skills</td>
<td>Course Content</td>
<td>Course Level</td>
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<tr>
<td>Maria</td>
<td>Female</td>
<td>51+</td>
<td>16+</td>
<td>Word processing; PowerPoint presentations; Internet search for information to supplement textbook; blogging</td>
<td>Courses in Microsoft Word and PowerPoint; self-taught Internet search</td>
<td>Upper Secondary</td>
</tr>
<tr>
<td>Vana</td>
<td>Female</td>
<td>41+</td>
<td>11-15</td>
<td>Word processing; Emailing; Internet search for information and YouTube videos to supplement textbook</td>
<td>Self-taught; Microsoft Word and Internet search</td>
<td>Lower Secondary</td>
</tr>
<tr>
<td>Ellie</td>
<td>Female</td>
<td>51+</td>
<td>16+</td>
<td>Word processing and searching the Internet for information to supplement textbook</td>
<td>Course in Microsoft Word; self-taught beginner in Internet search</td>
<td>Upper Secondary</td>
</tr>
<tr>
<td>Andrie</td>
<td>Female</td>
<td>51+</td>
<td>6-10</td>
<td>Word processing; Searching the Internet for information to supplement textbook</td>
<td>Course in Microsoft Word; self-taught beginner in Internet search</td>
<td>Upper Secondary</td>
</tr>
<tr>
<td>Vaso</td>
<td>Female</td>
<td>51+</td>
<td>16+</td>
<td>Word processing; PowerPoint presentations; searching the Internet for information and</td>
<td>Course in Microsoft Word and PowerPoint; self-taught in Internet search and blogging</td>
<td>Upper Secondary</td>
</tr>
<tr>
<td>Name</td>
<td>Gender</td>
<td>Age</td>
<td>Experience</td>
<td>Training</td>
<td>Education</td>
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<tr>
<td>Nicos</td>
<td>Male</td>
<td>51+</td>
<td>11-15</td>
<td>Self-taught in word processing and Internet search</td>
<td>Upper Secondary</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td>Word processing; Searching the Internet for information to supplement textbook</td>
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</tr>
<tr>
<td>Zina</td>
<td>Female</td>
<td>41+</td>
<td>6-10</td>
<td>No training</td>
<td>Upper Secondary</td>
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<td></td>
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<td></td>
<td>No experience</td>
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</tr>
<tr>
<td>Yiola</td>
<td>Female</td>
<td>51+</td>
<td>16+</td>
<td>Course in Microsoft Word and PowerPoint</td>
<td>Upper Secondary</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Word processing; PowerPoint presentations; Internet search for materials for teaching e.g. YouTube videos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Froso</td>
<td>Female</td>
<td>51+</td>
<td>11-15</td>
<td>No training</td>
<td>Upper Secondary</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No experience</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The first nine were also observed in their classes (¹).

N/A= not applicable

¹All names are pseudonyms
REFERENCES


Davies G. (2010). Introduction to computer hardware and software: what the language teacher needs to know. Module 1.2 in Davies G. (ed.) Information and


Nicosia: Ministry of Education and Culture.

Nicosia: Ministry of Education and Culture, Curriculum development Unit, 
Cyprus.

and Culture.


