Full Length Research Paper

Computer-Assisted Language Learning (CALL) Integration by English as Foreign Language (EFL) Teachers in Tunisian Secondary Schools

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This article investigates, in the case of Tunisian secondary schools, English as Foreign Language (EFL) teachers’ attitudes towards the integration of Computer-Assisted Language Learning (CALL) within their classrooms. It reveals in particular the reasons of these attitudes and the factors influencing them. Then, it explores the factors affecting CALL use and CALL non-use in EFL classrooms. It inspects particularly the differences between the traditional EFL class and the CALL-based EFL class, as well as the ways to integrate CALL in the non-technological EFL class. It additionally underlines the characteristics of CALL methodology, the technologies used in CALL practices, and the preferences of EFL teachers in their classroom CALL practices. Next, it draws attention to the effects of CALL use in EFL classrooms on teachers and learners. Afterwards, it scrutinizes the difficulties facing EFL teachers in the process of applying CALL within their classrooms. Finally, it suggests the ways of improving the level of CALL practices in EFL classrooms. The study was conducted in the following three secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. The data was collected through questionnaire survey and interviews with EFL teachers of baccalaureate, as well as empirical observation within their classrooms. The results of questionnaire survey showed statistically that 12 EFL teachers have positive attitudes towards CALL integration in their classrooms and 10 EFL teachers have negative attitudes towards. Besides, the findings of interviews corroborated the idea that CALL use in EFL classrooms is affected by internal factors such as EFL teachers’ positive attitudes towards CALL, as well as availability of theoretical and practical knowledge; and by external factors such as high rate of technological change, availability of pedagogical support, convenience of tools, social pressure, availability of adequate administrative, financial, and technical support, availability of training, availability of prior teaching experience with CALL, and availability of time. However, they can encounter many difficulties such as teacher heavy burden, limited class management, weak computer competence, unsuitable online courses, and computer shutdowns. The study lately discussed the main findings and suggested solutions to improve the level of CALL practices in EFL classrooms which are: variables’ definition, EFL teacher roles change, EFL teacher workload reduction, EFL teacher self-evaluation, and instructional guidelines for CALL use.

Key words: CALL, FL education, EFL teaching and learning.

INTRODUCTION

Background to the study

The interest and importance given to the potential of CALL in EFL teaching and learning have grown rapidly in recent years and research studies have turned their focus towards several key issues. Lotherington (2007:6) argue firmly that the twenty-first century finds us at a critical juncture for re-evaluating Foreign Language (FL) and literacy teaching agendas. The technological revolution has facilitated and augmented human communication in terms of globalization such as everyday interactions essentially including digital interfaces.
Text, language, and discourse norms are being rapidly expanded and reinvented in response to the new media and the global networks. The language driving the majority of intercultural web traffic is EFL which reinforces its position as a global language and adds an insidious dimension of cyber-colonialism. Domains for EFL socialization now extend from known geographical and social contexts to the global panorama of virtual world in which we, too, are learners. CALL has created new literacy that is required by EFL learners of all ages for academic and economic success.

Haywood and Hutchings (2004:19) agree that modern EFL learning environments should include CALL as a learning tool with great importance for both teachers and learners. Barr (2004:29) verify that the introduction of CALL in EFL classrooms in order to facilitate behaviorist and constructivist forms of learning started already in the early 1970s. Generic and specialized computer software has been used to enhance the learning capabilities of learners in many areas of study.

**Statement of the problem**

The original assumption is that CALL, as an excellent learning tool/tutor, could be introduced in Tunisian secondary schools to enhance EFL teaching and learning, especially vocabulary and grammar instruction. However, the application of CALL in EFL classrooms does not reflect the intentions of the national curriculum. A discrepancy was found between EFL teachers’ theories and their Computer-Assisted Language Learning (CALL) Integration by English as Foreign Language (EFL) Teachers in Tunisian Secondary Schools. Rihab El Hachfi Essoussi classroom practices. Neither secondary schools nor teachers appeared to be fully proficient and prepared for the transition to a digitalized learning environment. Time, effort, and resources invested in building up the CALL project would be wasted; if EFL teachers fail to apply this tool/tutor in their classrooms. This thesis investigates, in the case of Tunisian secondary schools, English as Foreign Language (EFL) teachers’ attitudes towards the integration of Computer-Assisted Language Learning (CALL) within their classrooms. It reveals in particular the reasons of these attitudes and the factors influencing them. Then, it explores the factors affecting CALL use and CALL non-use in EFL classrooms. It inspects particularly the differences between the traditional EFL class and the CALL-based EFL class, as well as the ways to integrate CALL in the non-technological EFL class. The third objective is to discover the effects of CALL use in EFL classrooms on teachers and learners. It additionally underlines the characteristics of CALL methodology, the technologies used in CALL practices, and the preferences of EFL teachers in their classroom CALL practices. The last objective is to highlight the difficulties facing EFL teachers in the process of applying CALL within their classrooms.

**Statement of the problem**

The last two decades have witnessed a world-wide proliferation of computers into the field of FL education. The global adoption of CALL into FL education sector has often been premised on the potential of the new technological tools to revolutionize an outmoded educational system, better prepare learners for the information age, and accelerate national development efforts. Computer-Assisted Language Learning (CALL) Integration by English as Foreign Language (EFL) Teachers in Tunisian Secondary Schools

Rihab El Hachfi Essoussi In the case of Tunisian secondary schools, a whole set of wild speculations about the necessity of EFL educational reforms that will accommodate the new tools. Therefore, one of the important aspects of EFL educational programs is CALL education which equips teachers with computer skills and strategies to help learners learn better, easier and faster. Ausbel (1978:39) set forth that the term ‘paradigm’ is another word for pattern. Pattern forming is part of the way we attempt to make meaning from our experiences. We use these patterns to understand situations, raise questions, build links, and generate predictions.

Berman (1981:26), Capra (1983:201) and Merchant (1992:50) theorize that the principal paradigm shift in FL/SL education, over the past 40 years, flowed from the positivism to the post-positivism shift and involved a move away from the tenets of behaviorist psychology and structural linguistics towards cognitive, and later, socio-
cognitive psychology, and more contextualized meaning-based views of FL. Those researchers give the key components on this shift which concerned (see Table 1):

i. Focusing greater attention on the role of FL learners rather than the external stimuli learners are receiving from their environment. Thus, the center of attention shifted from the FL teacher to his FL learners. This shift is generally known as the move from teacher-centered instruction to learner-centred instruction.

ii. Focusing greater attention on the FL learning process rather than on the products that learners produce. This shift is known as a move from product-oriented instruction to process-oriented instruction.

iii. Focusing greater attention on the social nature of FL learning rather than on learners as separate and de-contextualized individuals.

iv. Focusing greater attention on diversity among FL learners and viewing these differences not as impediments to learning, but as resources to be recognized, catered to, and appreciated. This shift is known as the study of individual differences.

v. Focusing greater attention on the views of those internal to the FL classroom rather than solely valuing the views of those who come from outside to study the classroom, evaluate what goes on there, and engage in theorizing about it. This shift led to such innovations as qualitative research with its valuing of the subjective and affective of the participants’ insider views and of the uniqueness of each context.

Along with this emphasis on FL context came the idea of connecting the school with the world beyond as a means of promoting holistic learning. Helping FL learners to understand the purpose of learning and develop their own purposes.

1. A whole-to-part orientation instead of a part-to-whole approach. This involves such approaches as beginning with meaningful whole texts and then helping FL learners understand the various features that enable texts to function (e.g., the choice of words and the text organizational structure).

2. An emphasis on the importance of meaning rather than drills and other forms of rote FL learning.

3. A view of FL learning as a life-long process rather than something done to prepare for an exam.

Oprandy (1999:44) writes that the paradigm shift in FL education has led to a large amount of change in FL teaching and learning such as learner autonomy alternative assessment, cooperative learning, teachers as co-learners, focus on meaning, thinking skills, curricular integration, and integration diversity. The reason of selecting the mentioned eight changes is the potential impact they could have if they were used in a more integrated fashion. The circular nature of these changes emphasizes that they are all parts of a whole and that the successful implementation of one is dependent on the successful implementation of others.

### Table 1. Contrasts between positivism and post-positivism (Berman, 1981:26; Capra, 1983:201; & Merchant, 1992:50)

<table>
<thead>
<tr>
<th>Positivism</th>
<th>Post-Positivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasis on parts and decontextualization</td>
<td>Emphasis on whole and contextualization</td>
</tr>
<tr>
<td>Emphasis on separation</td>
<td>Emphasis on integration</td>
</tr>
<tr>
<td>Emphasis on the general</td>
<td>Emphasis on the specific</td>
</tr>
<tr>
<td>Consideration only of objective and the quantifiable</td>
<td>Consideration also of subjective and the non-quantifiable</td>
</tr>
<tr>
<td>Reliance on experts and outsider knowledge</td>
<td>Consideration also of the ‘average’ participant and insider knowledge</td>
</tr>
<tr>
<td>(researcher as external)</td>
<td>(researcher as internal)</td>
</tr>
<tr>
<td>Focus on control</td>
<td>Focus on understanding</td>
</tr>
<tr>
<td>Top-down</td>
<td>Bottom-up</td>
</tr>
<tr>
<td>Attempt to standardize</td>
<td>Appreciation of diversity</td>
</tr>
<tr>
<td>Focus on the product</td>
<td>Focus on the process as well</td>
</tr>
</tbody>
</table>

### C.A.L.L. Notion

#### Nature of CALL

Computer-Assisted Language Learning (CALL) Integration by English as Foreign Language (EFL) Teachers in Tunisian Secondary Schools. Son (2000:78) conceives that CALL straddles the fields of computing, as well as FL teaching and learning. Some of the factors that determine the characteristics of any CALL program include:

- The computer;
- The teacher;
- The learner;
- The language taught;
- The language of instruction;
- The language writing system (both roman and non-roman character based);
- The level of the language to be taught (from absolute beginners to advanced);
- What is to be taught (grammar, informal conversation, and pronunciation);
- How it is to be taught.

**History of CALL**

Ittelson (2000:34) speculates that although computers have been used since the first half of the twenty century, they were not used for educational purposes until the 1960s. The 1970s witnessed the evolution of CALL as a result of development in research related to the use of computers for linguistic purposes and for creating suitable FL learning conditions. In America, the computer-based introductory courses in the 1960s were pioneering projects in CALL and were referred to as Computer-Assisted Instruction (CAI). The 1980s have witnessed the spread of computers both in educational institutions and in people's homes. Computer software has also become more readily available on the market. Hardisty and Windeatt (1989:82) inferred that the emergence of inexpensive computers and mass- storage media, including optical video-discs and compact disks, has given FL instructional technologists better tools to work with. Compact disks are used to store large amounts of data such as encyclopedias or motion pictures which can help FL learners to acquire the language very quickly in a rich manner.

**Stages of CALL**

Beatty (2003:16-36) distinguishes three periods of CALL:

- CALL in the 1950s and 1960s;
- CALL in the 1970s and 1980s;
- CALL in the 1990s and till the present day.

Davies (2003) ranges these phases in terms of cognitive approaches using the tags introduced by Warschauer (1996) (see Figure 1):

- The behaviouristic approach which dominates CALL in the 1950s and 1960s;
- The communicative approach which dominates CALL in the 1970s and 1980s;
- The integrative approach which dominates CALL in the 1990s and 2000s.

**Behaviouristic CALL**

It was formed in the late 1960s and used widely in the 1970s under the influence of audio-lingual teaching method. In this stage of CALL, repetitive FL drills, referred to as drill-and-practice, were used. The computer was seen as a mechanical tutor who never allowed

![History of CALL Timeline](image-url)
learners to work at an individual pace which hindered motivation. Further, “it included extensive drills, grammatical explanations, and translation at various intervals” (Beatty, 2003:16-36; Davies, G., 2003:14; Warshauer, 1996:57).

Communicative CALL

It emerged in the late 1970s and early 1980s when behaviouristic approaches to FL teaching and learning were being rejected at both theoretical and pedagogical level, as well as personal computers was creating greater possibilities for individual work at schools. Software computer developed in this period included text reconstruction programs and simulations. Communicative CALL is similarly corresponded to cognitive theories which stressed that learning was a process of discovery, expression, and development. “Under the influence of Communicative Language Teaching (CLT), defendants of this approach argued that FL/SL teaching and learning activities should focus more on using CALL forms” (Beatty, 2003:16-36; Davies, G., 2003:14; Warshauer, 1996:57).

Integrative CALL

It appeared between the 1990s and 2000s which was criticized for using the computer in a disconnected fashion by making a greater contribution to marginal rather than central elements of FL teaching and learning. FL teachers have moved away from a cognitive view of communicative learning and teaching to a socio-cognitive view that emphasizes real FL use in a meaningful and authentic context. “This approach seeks both to integrate the various skills of FL learning (i.e., listening, speaking, writing, and reading) and to integrate computer more fully into FL teaching” (Beatty, 2003:16-36; Davies, G., 2003:14; Warshauer, 1996:57).

Types of CALL programs

Davies, G. (2009:9-11) identifies three types of CALL which are the traditional CALL, the explorative CALL, the multimedia CALL, the Web-based CALL, and the CALL authoring programs.

Traditional CALL

Traditional CALL programs presented a stimulus to which the FL learner had to provide a response. In early CALL programs, the stimulus was in the form of text presented on screen and the only way in which the learner could respond was by entering an answer at the keyboard. Some programs were very imaginative in the way text was presented making use of color to highlight grammatical features and movement to illustrate points of syntax. “Discrete error analysis and feedback were a common feature of traditional CALL and the most sophisticated programs would attempt to analyze the learner’s response, pinpoint errors, and give corrections” (Davies, G., 2002:9).

Explorative CALL

More recent approaches to CALL have favored a FL learner-centered, explorative approach rather than a FL teacher-centered, drill-based approach. “The explorative approach is characterized by the use of concordance programs in classrooms, an approach described as Data-Driven Learning (DDL) by Johns, T. and King (1991)” (Davies, G., 2002:9).

Multimedia CALL

Early personal computers were incapable of presenting authentic recordings of the human voice and easily recognizable images, but this limitation was overcome by combining a personal computer and a 12-inch video-disc player which made it possible to combine sound, photographic-quality still images, and video recordings in imaginative presentations in essence the earliest manifestation of multimedia CALL. The result was the development of interactive video-discs for FL learners such as Monte-vi-disc by Schneider and Bennion (1984); Expo-disc by Davies, G. (1991) and A la rencontre de Philippe by Fuerstenberg (1993), all of which were designed as simulations in which the learner played a key role.

A feature of many multimedia CALL programs is the role-play activity in which the FL learner can record his own voice and play it back as part of a continuous dialogue with a native speaker. “Other multimedia programs make use of Automatic Speech Recognition (ASR) software to diagnose learners’ errors such as Tell Me More by Auralog” (Davies, G., 2002:10).

Web-based CALL

In 1992 the World Wide Web (WWW) was launched reaching the general public in 1993. The Web offers enormous potential in FL teaching and learning, but it has some way to go before it catches up with the interactivity and speed of access offered by CD-ROMs or digital video-discs, especially when accessing sound and video-files. “Felix (2001:190) advises adopting hybrid approaches to CALL, integrating CD-ROMs and the Web, as well as running audio-conferencing and video-conferencing in conjunction with Web activities” (Davies, G., 2002:10).

CALL authoring programs

Authoring programs offer a do-it-yourself approach to
CALL. They were originally developed to enable programmers to simplify the entry of data provided by FL teachers. Modern CALL-based authoring programs are designed to be used by teachers who have no knowledge of computer programming. Typical examples are authoring packages that automatically generate a set of pre-set activities for the learner like Cam-Soft’s Fun with Texts (e.g., Cam-Soft) and Authoring Suite (e.g., Wida Software). “Generic packages, such as Director, are more sophisticated and enable the user to create a full-blown course, but they are probably too complex for most teachers and are best suited to the template approach to authoring” (Davies, G., 2002:11).

**CALL potential in EFL teaching and learning**

According to Marzbana, A. (2010:64), CALL can enhance EFL teaching and learning by providing:

- Access to pedagogy and expertise.
- Access to culturally and linguistically diverse resources.
- Access to innovative tools to integrate EFL and curriculum learning.

Opportunities to access information in different and helpful forms, for example through multimedia, through key visuals, or through models and simulations. Access to ‘meaning’ can be improved for early stage learners through the variety of media available [(e.g., speech and/or text, L1 (i.e., first language/native language) and L2 (i.e., second language/foreign language/target language), graphs, diagrams, video, graphics, etc.). Using models, simulations, and key visuals can help EFL learners visualize complex or abstract processes and concepts. They can also support them to move from simple observational or naming language to the complex language of explanation, hypothesis, prediction, and generalization.

Opportunities for EFL learners to refine, develop, and store their language output, for example using word processing programs to redraft, using publishing programs to present information, or using Web-cams to record their oral presentations. CALL allows EFL learners to combine spoken, written, visual, and graphic output which can support them to successfully express that which is just beyond their current linguistic competence in language and so develop further competence. EFL learners are more likely to develop and refine their CALL-based output than paper-based output, are able to develop it collaboratively with more opportunities to examine their language output in detail.

Creating a focus on EFL and how it is used; for example through text tools, authoring programs or writing frames, subject specific writing frames, templates, fabricated or authentic text can be used to scaffold EFL learner writing in new styles or genres. Comparing learner versions between themselves and against models can help learners identify improvements they could make.

Increasing opportunities to use L1 to support curriculum and L2 learning, for example through Internet translation tools, electronic bilingual dictionaries, L1 subject-related texts and explanations on the Internet. Using L1 material sourced on the Internet can help EFL learners draw on their understanding in their L1. Creating or sourcing L1 and bilingual sound files can be especially helpful if EFL learners are not literate in their L1. Developing L1 expertise and academic use supports the development of L2.

Providing opportunities for EFL learners to become autonomous learners and to practice their skills in particular areas of language for example through specific software or Internet-based research. CALL-based EFL learning activities can increase confidence and competence in specific areas, but need to be linguistically and culturally appropriate.

Increasing opportunities and motivation to communicate in EFL, for example through e-mail exchanges, video-conferencing, virtual classrooms, or Web page authoring. CALL as a stimulus can provide the context for this, and can be used to stimulate exploratory talk and encourage collaboration in the construction of EFL learning.

**CALL roles**

According to Padurean, L. and Margan, M. (2009:21), CALL can play in EFL teaching and learning many roles at the same time such as tutor, tester, tool, data source, and communication facilitator.

**CALL as a tutor**

In the early years of CALL in schools some reluctant EFL teachers made assumptions that in few years teachers would no longer be needed in schools and their role being taken over by computers. It is not the case as we can very well see. Computerized teaching (i.e., computer as a teacher) uses multimedia CD-ROMS. In such programs, learners can listen to recordings, watch videos, speak into the microphone, and record their progress or learn words by clicking on pictures and hearing their pronunciation. An alternative to CD-ROMS is the WWW which is more useful for teachers and learners. “A CALL tutor offers flexibility on several different levels including access time, geographical location, and learning pace. It must be reliable, as it is the primary, and sometimes only, learning source in which the feedback must be timely, accurate and appropriate” (Padurean, L. and Margan, M., 2009:21).

**CALL as a tester**

EFL learners can practice their knowledge using different
that the practice programs are very limited in terms of Internet Web sites. A problem these sites have is the fact that the computer can give is ‘Right’ or ‘Wrong’. Despite these limitations, computer grammar or vocabulary practice is enjoyed by learners because the latter feel like playing and get the feedback without fearing their teachers’ criticism. They can also work in groups, sit at the same computer, and discuss the answers.

CALL as a tool

CALL is seen as a tool because it does not have a methodology, but it is under the direct control of FL teachers and learners, designed to aid them in a huge process of planning and usage of inputs. In this connection, Padurean, L. and Margan, M. (2009:21) state that practice material basically refers to multiple-choice exercises, dual-choice exercises, and true or false exercises in which the only answer the computer can provide is ‘Right’ or ‘Wrong’. Despite these limitations, computer grammar or vocabulary practice is enjoyed by learners because the latter feel like playing and get the feedback without fearing their teachers’ criticism. They can also work in groups, sit at the same computer, and discuss the answers.

CALL as a data source

Little should be said about CALL as information provider because due to computers and the Internet, EFL teachers and learners can access almost any information they need. In this connection, Padurean, L. and Margan, M. (2009:22) affirm that examples of CALL tools include Web sites, pictures, projects, exercises, audio and video materials, electronic mail (e-mail), electronic dictionaries (e-dictionaries), concordances, Computer-Mediated Communication (CMC), and the word processor.

CALL as a communication facilitator

Nowadays, the Internet is the principal medium by which FL teachers and learners can communicate with others. In this vein, Padurean, L. and Margan, M. (2009:23) evince that this can be done by e-mail, chatting, and participating in discussion forums.

Constructivism, CALL, and electronic learning (e-learning)

Constructivism is a psychological theory of knowledge which argues that humans construct knowledge from their experience. In parallel with the development of computer technology, the constructivist view of EFL learning and teaching is applied and incorporated as one major theoretical framework for CALL pedagogies and development. Bonk and Cunningham (1998:5) point out that the blending of technological and pedagogical advancements has elevated the importance of research on electronic learner (e-learner) dialogue, text conferencing, information sharing, and other forms of collaboration.

As O’Malley (1995:289) state “active and collaborative construction of knowledge instead of knowledge transfer from one person to another (Cobb, 1994:56; Jonassen, 1994:7; O’Malley, 1995:80; Schank and Cleary, 1995:12), engagement in contextualized authentic tasks as opposed to abstract instruction, and less controlled environments versus pre-determined sequences of instruction where conditions for shared understanding are created and alternative solutions and hypothesis building are promoted through learners’ interaction”

In this connection, Shi (2006:11) declare that from the educational point of view, CALL is closely related to many aspects of EFL learning and teaching. It is administered not only as a teaching method, but also as an effective tool to help teachers in teaching and to promote learners’ interactive learning as it can be employed in many ways and both in and out of the classroom.

From Feng’s (2006) study on the implementation of CALL in a college EFL class in China, results show that it provides a constructive learning environment to students and can improve students’ interest in learning. In this connection, it is noticeable that in an L2 speaking class, the use of computer as a teaching tool has a significant effect on enhancing learners’ motivation” (Bax, 2003:8; Merrill and Hammons, 1996:21; Molnar, 1997:163).

In Zheng’s (2006) research study on the tentative educational reform of current college EFL teaching in China, the recommendations on the use of CALL are provided to create self learning and learner-centered consciousness for both learners and teachers, which can motivate learners to practice more by actively constructing new knowledge instead of passively accepting what teachers teach electronic learning (e-learning) has become the main trend in CALL because of its technicality, practicality, diversity, and interactive nature that help EFL learners to acquire the language.

In this connection, Ally (2002:98); Ally (2004:8); Ritchie and Hoffman (1997:10) state that learners can access the Web to go through sequences of instruction to complete the learning activities and to achieve learning outcomes, as well as objectives. According to Dawley (2007:63), e-learning can encourage EFL learners to seek information, evaluate it, share it collaboratively and, ultimately, transform it into their own knowledge.

Constructive role play in e-learning

According to Brown and Yule (1995:13), constructive role play can help EFL learners become more interested and involved in classroom learning by addressing problems and exploring alternatives, as well as creative solutions in
terms of not only material interactive learning, but also in terms of integrating the knowledge learned in action. Naidu and Linser (2000:46) point out that constructive role plays increase motivation. They encourage EFL learners to engage in speaking language freely and creatively, as well as to explore options through the creative use of language. According to Ladousse (1991:24), the incorporation of constructive role play activities into the EFL classroom adds variety, a change of pace, and opportunities for a lot of verbal production.

**Scaffolding as teaching support**

‘Scaffolding’ is a term given to the provision of appropriate assistance to EFL learners in order that they may achieve what alone would have been too difficult for them. “Scaffolding is a good way to provide comprehensible input to learners so that not only will they learn essential subject content, but they will also make progress in their acquisition of language” (Daniels, 1994:82). Wood, Bruner, and Ross (1976:51) affirm that EFL learners are particularly dependent on scaffolding. However, the purely oral scaffolding undertaken by the teacher is not enough. More scaffolding from the teacher is necessary because it helps learners understand why they are doing the work and why it is important.

**Related-CALL acronyms**

According to Langenbachand and Bodendorf (1997), the main approaches to EFL teaching and learning are: Computer-Assisted Language Learning (CALL) like RE-CALL and JALT-CALL, Computer-Assisted Instruction (CAI), Computer-Aided Education (CAE), Computer-Aided Assessment (CAA), Computer-Mediated Communication (CMC), Computer-Based Training (CBT).

**Computer-Assisted Language Learning (CALL) like RE-CALL and JALT-CALL**

It is an approach to FL teaching and learning in which computer technology is used as an assistant to the presentation, reinforcement, and assessment of material to be learned usually including a substantial interactive element. In this vein, Computer-Assisted Language Learning (CALL) studies the role and the use of Information and Communication Technologies (ICTs) in EFL learning and teaching. It includes a wide range of activities, spanning materials and courseware development, as well as pedagogical practice and research” (Atkinson and Davies, 2000:4).

**Computer-Assisted Instruction (CAI)**

It is a narrower term that refers to drilled-practice, tutorial, simulation, or problem-solving activities, and educational games offered either by FL teachers and learners themselves or as supplements to traditional, teacher-directed instruction. According to Sharp (1996:2), Computer-Assisted Instruction (CAI) is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place. It is a program of instructional material presented by means of a computer or computer systems. It uses a combination of text, graphics, sound, and video in the learning process which creates a blended learning environment. It is especially useful in distance learning situations. If the computer has a tutorial program, the student is asked a question by the computer; the student types in an answer and then gets an immediate response to the answer. The computer has many purposes in the classroom and it can be utilized to help a learner in all areas of the curriculum. CAI refers to the use of the computer as a tool to facilitate and improve instruction. CAI programs use tutorials, drill and practice, simulation, as well as problem solving approaches to present topics and they test the learner’s understanding. These programs let learners’ progress at their own pace, assisting them in learning the material. The subject matter taught through CAI can range from basic math facts to more complex concepts in math, history, science, social studies, and language arts.

**Computer-Aided Education (CAE)**

According to NIIT (2004), using Computer-Aided Education (CAE) FL learners can state and explain the basic concepts in the subject easily, as well as participate in discussions of advanced concepts related to the subject content. By using visualization techniques, computer graphics images are created. These images display the data and the mathematical relations of the interested subject for the interpretation, particularly of multidimensional cases. Computer Aided Education (CAE) also provides the substructure for interactively communicating with international colleagues and resending the subject to an interested, worldwide audience.

**Computer-Aided Assessment (CAA)**

It is described as any instance in which some aspect of computer technology is deployed as part of the assessment process. Therefore, if a computer is involved in any way with an assessment, it can be called a Computer-Aided Assessment (CAA) which also comes under the umbrella of assessment as defined by Joint Information Systems Committee (JISC). Other labels which relate to assessment include Computer-Based Training (CBT). In this connection, “CAA can be applied to provide a range of assessment types including summative in which the mark contributes to a course result, formative which provides a learning experience that is not graded, diagnostic by which FL teachers can
assess the current understanding of their learners, and self-assessment to provide learners with a measure of their own understanding” (Atkinson and Davies, 2000:4).

**Computer-Mediated Communication (CMC)**

Computer Mediated Communication (CMC) can include any means by which individuals and groups use the Internet to ‘talk’ to each other. CMC can either be synchronous (i.e., exchanges take place in ‘real time’) or asynchronous (i.e., messages are posted up at any time, and read and responded to by other users also at times which suit them. In other words, users do not have to be online at the same time, as they do with synchronous exchanges). E-mail, mailing lists, Usenet and computer conferencing are all asynchronous, while IRC, Internet telephony and videoconferencing all take place synchronously. All of these types of CMC are now available through the Web (i.e., through a standard web browser) which improve the quality of FL teaching and learning.

**Computer-Based Training (CBT)**

It is a type of education in which the FL learner learns by executing special training programs on a computer. Computer-Based Training (CBT) is especially effective for training people it can be integrated with the applications so that learners can practice using the application as they learn.

**CALL environments**

Becerra, M. (2009:9) sustain that the CALL-based EFL learning environment can be face-to-face, online, or blended.

**Face-to-Face learning environment**

It is also called ‘traditional classroom setting’ where FL teachers take more leadership in their classrooms and have more physical, verbal, and social interactions with their learners. Face-to-face learning environment is characterized by more sense of leadership from the instructor; often have to wait for others to arrive; verbal discussions: a more common mode, but impermanent; meet in a room; strong physical context; group meets in ‘stop and start’ fashion usually work on one issue at a time and advance through agenda item by item; dynamics ‘understandable’ to most participants because they have experienced them before never have access to other groups; effects of room/location; stress of rejoining not so high less likely to cover as much detail, often more general discussion; less than with online learning; more tightly bound, requiring adherence to accepted protocols.

**Online learning environment**

It is also called ‘distributed learning’ or ‘e-learning’ environment where FL learners meet their teachers and interact with them in a virtual class. Teachers post course materials and assignments online and their learners usually study at their own pace. Online learning environment is characterized by less sense of instructor control; no waiting for participants to arrive; discussions through text only can be structured; dense; permanent; limited; stark; don’t meet in a room; no shared physical context other than text; group meets continuously; work on multiple issues at the same time; group dynamics not same as face-to-face; participants have to learn how to interpret them online; can access other groups easily; effects of group software; psychological and emotional stress of rejoining is high; feedback on each individual’s piece of work very detailed and focused; greater using online learning and loose-bound nature encourages divergent talk, as well as adventitious learning.

**Blended learning environment**

It is a combination of the face-to-face and the online learning models where FL learners and teachers meet each others in real life, as well as interact with each other online. Blended learning environment overcomes the challenges faced by online learners and has the advantages of the face-to-face classroom settings. Blended learning in FL educational research refers to a mixing of different learning environments. It combines traditional face-to-face classroom methods with more modern computer-mediated activities. According to its proponents, the strategy creates a more integrated approach for both instructors and learners. Formerly, technology-based materials played a supporting role to face-to-face instruction. Through a blended learning approach, technology will be more important.

**EFL teachers’ opinions and philosophies about CALL**

Gruich (2002:31) finds that the use of computers among EFL teachers is very frequent for such general purposes such as e-mail, Internet, office works, typing, keeping lesson plans, and storing materials. Most teachers also generally reported positive attitudes towards CALL integration in their classrooms and stated that it makes completing tasks easier for them and their learners. Since Rogers (1995:12) cited in Albinini (2004:23) uses the terms innovation and technology interchangeably, the diffusion of innovation framework seems particularly suited for the study of the diffusion of CALL int o the field of EFL education. EFL teaching and learning are now based on the integration of new technology tools. ‘Rogers’ Innovation Decision Process’ theory states that innovation diffusion is a process that occurs over time through five stages which are:

Accordingly, “the ‘Innovation Decision Process’ is the process through which an individual or other decision-making unit passes from first knowledge of an innovation, to forming an attitude towards the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision” (Rogers, 1995:161). In this vein, Albirini (2004:23) states that due to the novelty of computers and their related technologies, studies concerning CALL diffusion in EFL education have often focused on the first three phases of the innovation decision process. This is also because the status of computers in education is, to a great extent, still precarious. In cases where technology is very recently introduced into the educational system, as is the case of most developing countries, studies have mainly focused on the first two stages, that is, on knowledge of an innovation and attitudes about it. “Rogers’ premise concerning individuals shifts from knowledge about CALL to forming attitudes towards it and then to its adoption or rejection corroborates the general and widely accepted belief that attitudes affect behavior directly or indirectly” (Ajzen and Fishbein, 1980:2; Zimbardo, Ebbesen, and Maslach, 1977:16). Similarly, “EFL teachers’ attitudes have been found to be a major predictor of the use of new technologies in instructional settings” (Abas, 1995:3; Blankenship, 1998:37; Isleem, 2003:21).

Factors of CALL use and CALL non-use in EFL classrooms

Knezek, Chirstensen, and Rice (1996:17) gather that pre-service uses and EFL teachers’ positive perceptions to CALL legitimacy as an educational tool facilitate its integration in their classrooms. Dupagne and Krendl (1992:4), Dusick (1998:65), Ely (1990:63), and Hoffman (1997:82) also deduce that EFL teachers need to go through further computer training and improve their use of authentic materials in order to implement CALL within their classrooms. “Research has shown that EFL teachers who have more experience with computer technology are more comfortable users and have positive attitudes towards CALL, while those with computer anxiety tend to avoid using this tool in their classrooms” (Akbaba and Kurubacak, 1998:2). In this connection, Clark (2000:10) says that the expansion and success of instructional CALL, then depend greatly on EFL teachers’ attitudes towards and ability to use this tool in their instruction. Some researchers find that provision of opportunities and training to enable EFL teachers to experience computer technology resources and learn how to use them in instruction is crucial for their acceptance to integrate CALL in their classrooms.

Tuzcuoglu (2000:13) investigates EFL teachers’ attitudes towards CALL in the ‘Foreign Languages Department’ at a university in Turkey. Tuzcuoglu states that despite the availability of a computer lab, and a request from the administration that EFL teachers use the lab for teaching, most teachers did not make use of computers for teaching purposes. Tuzcuoglu’s results revealed that those teachers had positive attitudes towards using CALL in instruction and were willing to Rihab El Hachfi Essoussi teach with computers. The teachers agreed that using computers would increase students’ interest and learning abilities. However, almost none of the teachers had experience with using CALL and thus, needed to learn to use computers for teaching. Tuzcuoglu offers suggestions about ways of using CALL in EFL teaching, highlights the need for training teachers and revision of the curriculum to better integrate computer technology resources.

Another study in Turkey by Aydogdu (2001:4) investigates the level of CALL use in EFL teaching among instructors across eight state universities. The results revealed that EFL teachers who have undergone training used CALL in their classrooms more than those who have not. The study highlights the need for pre-service and in-service educational computer training programs for those teachers. It also suggests that the existing training programs should give more emphasis to the pedagogical potential of educational technology resources which increase the understanding of EFL courses.

After analysis of the results of their study with 47 teachers from 20 K-12 schools in the US, in which they examined the use of computers by EFL teachers and their perception of the impact of CALL on their classroom practices, Dexter, Anderson, and Becker (1999:2) conclude that using computers in the EFL classroom in a teacher- or learner-centered way is the teacher’s decision. To make this decision, they argue, teachers will draw upon their knowledge and experience of using technology tools in the classroom. For that knowledge to be constructed and developed further, EFL teachers must have opportunities to work with computers and technology resources, models of how these resources and tools can be used in instruction, and opportunities to reflect on the role of the CALL in the learning process. In other words, those teachers must be provided with opportunities to construct their knowledge about educational technology. School administrations, trainers, and curriculum planners offering technology should provide models of effective technology implementation and opportunities for learning, as well as positive reinforcement and support.

One of the major incentives for EFL teachers to use CALL might be to convince them of the benefits of technology in instruction. As those teachers become convinced of the learning benefits that may result from the adoption of new instructional practices, they may become more motivated to adopt these practices. As the above review of research has revealed, the way to
opportunities. Based on the report of the ‘United States for EFL teachers to have more access to CALL, there is Higgins (1997:265) highlight that in addition to the need classrooms what training programs offer. Kassen and Consequently, EFL teachers don't apply in their school settings across EFL contexts and EFL teachers learning is only one factor in understanding EFL teachers' issues can be incorporated into schools to prepare EFL courses that teach what learners really need to know. Those teachers need to design CALL courses that teach what learners really need to know. Course content should also be readily transferable to school settings across EFL contexts and EFL teachers should continue to learn and grow in the technology area as practicing professionals. Understanding the impact of EFL teachers attitudes predicted by several other factors on teachers' use of computers can enable them to plan CALL- related EFL courses that are authentic and ‘generative’ and fits both cultural environment and

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

However, “the appropriateness of technology for pupil learning is only one factor in understanding EFL teachers' use of CALL. Those teachers need to design CALL courses that teach what learners really need to know. Course content should also be readily transferable to school settings across EFL contexts and EFL teachers should continue to learn and grow in the technology area as practicing professionals. Understanding the impact of EFL teachers attitudes predicted by several other factors on teachers' use of computers can enable them to plan CALL- related EFL courses that are authentic and ‘generative’ and fits both cultural environment and pupils' learning culture, as well as to help instructors to be more effective and innovative instructors” (McKenzie, 2001:6).

Accordingly, “research in EFL teacher CALL use shows that pre-service teachers gain confidence in the use of computer technologies through formal teacher education coursework (Knezek, Chirstensen, and Rice, 1996:71) and that their attitudes towards CALL integration in their classrooms improve through such coursework” (Lam, 2000:31). Galloway (1996:24) stresses the need for research that addresses questions about what computer experience EFL teachers need to gain, how they actually use CALL, as well as how they learn to use and adopt CALL in their classrooms. The literature to date that attempts to answer such questions suggests two overarching themes: first, that EFL teachers learn what they actually need to use and second, coursework does not always address teachers' or learners' needs. These two points are explained further. While the emergence of a great variety of technology courses for EFL teachers suggests a belief that those teachers can learn about education technology theory. Rihab El Hachfi Essoussi and practice through coursework, some researchers have found that coursework seems to have little or no impact on teacher-education learners' beliefs about their abilities or use of what they have learned in their teaching. For example, Grau (1996:24) finds that after a semester-long technology course, only 22% of the pre-service EFL teachers rated their computer skills as being above average, and the same percentage rated them below average. Twenty five percent of his participants did not use CALL at all in their first year of teaching. McMeniman and Evans (1998:1) conclude that EFL teachers alter their practices and beliefs or ‘learn’ when presented with evidence that shows positive effects of the new teaching method on quality of learning outcomes and develop expertise in the new method. In other words, since they do not perceive that there is sufficient evidence of any positive effects of CALL; many teachers may not change their practice to incorporate technology. Langone, Wissick, Langone, and Ross (1998:62) also discover that although EFL teachers do learn new skills as a result of instruction, they do not necessarily use these skills in their daily practice or change their instructional practice in the long run. Levy's study (1997a:4) suggests that there should be a fit between EFL teachers' philosophies of teaching and learning and what they see as the capabilities of technology to facilitate teacher use of CALL in their classrooms.

Along the same lines, Galloway (1996:15) and Smerdon et al. (2000:8) find that most EFL teachers learned to use computers outside of coursework. While this helps to prepare them for CALL coursework in the use and integration of appropriate technologies, it also has other implications for teacher education. The important trend noted in both of these studies is that the majority of respondents learned to use these applications
that they needed to use in their lives outside of school. Galloway explains this trend by noting that the most-used computer application among his participants was word processing. This is because EFL teachers use word processing for both personal and professional work. Galloway also finds that few of those teachers actually used telecommunications, hypermedia, or even other business programs such as databases and spreadsheets because they did not need to use these technologies in their lives outside of the classroom. “The ‘United States Department of Education’ similarly reports that EFL teachers use CALL most frequently to prepare or supplement instruction rather than for instructional delivery, thereby working to save themselves time or to enhance pupil learning beyond the classroom” (Smerdon et al., 2000: 33). Keirns (1992:34) concurs, noting that the practical experience of learning computer skills which are personally useful has a positive effect on EFL teacher technology use in his classroom. This implies that for CALL coursework to have an impact it should focus on the needs of individual EFL teachers and their contexts. Abdal-Haqq (1995:3) argues that EFL teachers are not integrating new and advanced technologies into their syllabi, possibly because teacher education in CALL often focuses on older and simpler instructional applications of computer technology rather than multimedia, problem solving applications, and other newer tools. In short, those teachers cannot implement what they do not know about.

In this connection, “findings indicate that even more experienced EFL teachers use the CALL in their classrooms mainly for word processing, spreadsheets, drills, and to some extent Internet research and problem-solving. Those teachers are more likely to use these programs for creating worksheets, tests, and forms to supplement their practice. This suggests that they are using technology in ways that fit their current practice, rather than transforming their practice through the use of technology” (Smerdon et al., 2000).

Programs like those described by Fisher, Ringstaff, Yocam, and Marsh (1996:12) seem to have a greater impact on EFL teachers’ personal use and on their instructional delivery because CALL is situated in the context where it will be used, and learning takes place during their actual teaching.

During CALL programs, EFL teachers apply computer technology in their own classrooms and plan with real pupils and colleagues. It should be noted that those teachers still experienced barriers to implementing technology, and those who did experience such barriers made fewer changes in their thinking and instruction. Wentworth (1996:101) finds in her study of teacher education that EFL teachers could not use CALL projects they developed within their technology class in their teaching because the schools did not have the proper facilities. Her participants also felt that they did not have enough time to adapt their CALL projects to their specific teaching, school contexts, and cultural philosophies. Cited in Egbert, J. and Trena M. Paulus (2002:8), Keirns’ (1992:34) study of coursework transfer supports this conclusion noting that although participants’ practices may not be significantly altered by one course in computer, the course can help EFL teachers develop positive attitudes towards CALL and encourage them to think about the integration of this tool into their personal teaching situations.

In this connection, a single, non-site-based CALL course will likely not have much direct immediate impact on EFL teachers’ classroom uses of computers because this type of course does not prepare them for the realities of their classrooms” (Hargrave and Hsu, 2000:33). Debski (2000:236) finds that EFL teachers in his study, offered the chance to join an innovative CALL project, did so for reasons ranging from pressure to use computers in their courses to the opportunity to learn new technical skills.

In the same way, “other factors seen as facilitating EFL teachers CALL use are pre-service use, perception of the usefulness of technology for teaching, and overcoming technology-related anxiety” (Knezek, Christensen, and Rice, 1996:42). Rihab El Hachfi Essoussi Reed, Anderson, Ervin, and Oughton (1995:26) agree that even one computer course can positively affect teachers' attitudes towards CALL integration in their classrooms, giving them more confidence and convincing them that technology is a valuable tool. Lam (2000:52) also notes that EFL teacher confidence is crucial, and adds that other factors in the complex decision by those teachers of whether to use CALL in their classrooms include whether the technology is useful for job performance and how easy it is to use. However, “a positive attitude towards CALL does not ensure that EFL teachers will be able to use it in the classroom. Educators are prevented from using CALL in many ways. These include time pressures both outside and during class (Lam, 2000:4; Levy, 1997a:6; Reed et al., 1995:212; Smerdon et al., 2000:62; Strudler, Quinn, McKinney, and Jones, 1995:87); lack of resources and materials (Loehr,1996:27; Smerdon et al., 2000:33); insufficient or inflexible guidelines, standards, and curricula (Langone et al., 1998:25); lack of support or recognition for integrating computers (Grau 1996; Strudler, McKinney, and Jones, 1999:217); a clash between new technologies at universities and older ones in schools; lack of leadership (Smerdon et al., 2000:65); as well as inadequate training and technical support (Abdal-Haqq, 1995:2; Lam, 2000:41; Langone et al., 1998:60; Levy, 1997a:29; Smerdon et al., 2000:45). Other factors that may influence technology use are age, gender, attitudes towards technology, and teaching experience, but the results are mixed as to what extent these variables are related to EFL teacher use of technology” (Lam, 2000:8). Levy (1997a:23) also suggests that the rate of technological change poses a barrier to CALL use in EFL classrooms. “The current
uses of the technology in their schools and having a computer at home may also influence EFL teachers' CALL use in their classrooms" (Yildirim, 2000:18). Fisher (1999:32) finds that EFL teachers' attitudes towards CALL integration in their classrooms were strongly related to their success in using technology. Parr (1999:42) agrees, noting that slow integration of CALL in EFL classrooms might also be due to the lack of a collaborative culture supporting the technology use in schools.

In addition, Lam (2000:4) notes that the top-down implementation of technology by authorities may cause resentment and avoidance by EFL teachers. He adds that the lack of perceived legitimacy of the computer as an educational tool has an influence on those teachers' adoption of CALL in their classrooms. Lam also suggests that EFL teachers do not use computers in their classrooms not because they are technophobes, as some suggest, but because institutions policymakers and programs overlook the importance of training them and matching their goals with the tools they hope to employ.

Similarly, Cuban (1986, 1996:54-56) notes that technology advocates have ignored realities such as the social organization of EFL classrooms that serve as an inhibitor of classroom technology use. He also observes that innovations for solving productivity problems defined by non-EFL teachers invariably were mandated into use by district policy makers, not teachers. He adds that views of teaching and organizational compliance ill-fitted to schools and classrooms, as well as Rihab El Hachfi Essoussi married to feckless strategies aimed at coercing teachers to use the innovation explain limited use of the new technologies. EFL teachers' attitudes and philosophies towards CALL, regardless of their basis, can both support and prohibit the use of technology in their classrooms. Reed et al. (1995:2) find that those able to overcome some of these hindrances included EFL teachers who had prior experience with computing. If this conclusion were true, we would expect to see a relationship between EFL teachers' previous experience with computers and CALL implementations in their classroom. In fact, studies show that technology-using teachers are those more likely to have more teaching experience in the EFL classroom.

Levy (1997b:23) addresses the link between technology coursework and further professional development in computer by proposing that a CALL course should be looked at from a more holistic view than whether or not EFL teachers become computer experts during a course. That is, teachers can learn additional skills after their coursework on their own if they receive a firm grounding in CALL theory through their coursework. Levy also argues that it is nearly impossible to cover every piece of technology in a course. However, if those teachers understand the underlying theories and perspectives of technology integration, they can continue to learn and develop their materials according to their future needs. Studies have found, though, that EFL teachers who spent more time in professional development activities were generally more likely to indicate they felt well prepared to teach with technology. Although CALL professional development materials and resources in the form of books, Web sites, electronic discussion lists, journals, and courses exist, it is unclear which of them provide the most effective development and which provide theories and activities that directly transfer to classroom implementation.

“In the same path, Smerdon et al. (2000:iv) declares that we may take a cue from the ‘Apple's Classrooms of Tomorrow’ project reported in Sandholtz, Ringstaff, and Dwyer (1997:35), where hands-on, active learning by EFL teachers allowed exploration, experimentation, and most important reflection, these ‘situated teacher development’ activities, in turn, supported many different kinds of change in classrooms. Studies focus on CALL and its effect on EFL learners’ achievement, thus overlooking the psychological and contextual factors involved in the process of educational computerization (Clark, 1983:123; Thompson, Simonson, and Hargrave, 1992:34). In this connection, Wtson (1998:190) sates that the development of EFL teachers’ positive attitudes towards CALL is a key factor not only for enhancing this tool integration, but also for avoiding teachers’ resistance to computer use. We must warn against the severance of the innovation from the classroom teacher and the idea that the teacher is an empty vessel into which this externally defined innovation must be poured.

According to Rogers (1995:267) cited in Albirini (2004:12), people’s attitudes towards a new technology are a key element in its diffusion within EFL teaching and learning. Since Rogers uses the terms innovation and technology interchangeably, the diffusion of innovation framework seems particularly suited for the study of the diffusion of CALL. ‘Rogers' Innovation Decision.Process’ theory states that innovation diffusion is a process that occurs over time through five stages which are: Knowledge, Persuasion, Decision, Implementation, and Confirmation.

Accordingly, “the innovation-decision process is the process through which an individual or other decision-making unit passes from first knowledge of an innovation, to forming an attitude towards the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision” (Rogers, 1995:161).

Similarly, “Due to the novelty of computers and their related technologies, studies concerning CALL diffusion in EFL education have often focused on the first three phases of the innovation decision process. This is also because the status of computers in education is, to a great extent, still precarious. In cases where technology is very recently introduced into the educational system, as is the case of most developing countries, studies have mainly focused on the first two stages, that is, on
knowledge of an innovation and attitudes about it” (Albirini 2004:189). “Rogers' premise concerning individuals’ shift from knowledge about technology to forming attitudes towards it and then to its adoption or rejection corroborates the general and widely accepted belief that attitudes affect behavior directly or indirectly” (Ajzen and Fishbein, 1980:29; Zimbardo, Ebbesen, and Maslach, 1977:24). “In fact, it has been suggested that attitudes towards CALL affect EFL teachers' use of computers in the classroom and the likelihood of their benefiting from training” (Kluwer, Lam, Hoffman, Green, and Swearinges, 1994:62). Knezeck and Christensen's (2002:76) analysis of several major cross-cultural studies completed during the 1990s and related to CALL in education suggests that EFL teachers advance in technology integration through a set of well defined stages which sometimes require changes in attitudes more so than skills.

According to Zimbardo et al. (1977:20-52), changing individuals' behavior is possible once their attitudes have been identified. Zimbardo and his associates suggest that attitudes are made up of three components which are: ‘Affect’, ‘Cognition’, and ‘Behavior’. The affective component represents an individual’s emotional response or liking to a person or object. The cognitive component consists of a person’s factual knowledge about a person or object. Finally, the behavioral component involves a person’ overt behavior directed towards a person or object. Zimbardo et al. contend that even though we cannot predict the behavior of single individuals; we should be able to predict that people in general will change their behavior, if we can change their attitudes. Unfortunately, “the task of pinning down teachers' attitudes has not always been an easy one considers EFL teachers' attitudes as the most misread impeding force in the integration of CALL in educational practices” (Watson, 1998:234). As Zimbardo et al. (1977:53) note, the complexity of attitudes and their interrelationship with behavior and many other variables summons considerations for the maze of variables and processes that could affect attitudes, beliefs, and action. Studies have pointed to a wide range of Factors affecting attitudes towards CALL. The variations in the factors identified by different researchers might be attributed to differences in context, participants, and type of research.

Rogers (1995:42) affirms that one of the major factors affecting people’s attitudes towards a new technology is the attributes of the technology itself. He also identifies five main attributes of technology that affect its acceptance and subsequent adoption which are: relative advantage, compatibility, complexity, observability, and triability. Thus, a new technology will be increasingly diffused if potential adopters perceive that the innovation which has an advantage over previous innovations; is compatible with existing practices and not complex to understand and use, shows observable results, and can be experimented with on a limited basis before adoption.

In a study, computer attributes was operationally defined as “the level of relative advantage, compatibility, complexity, and observability of the computers” as perceived by high school as EFL teachers in Iran. Trialibility was not examined because the majority of Iranian EFL teachers may not have had the chance to experiment with CALL before these were introduced into schools.

In his study in Trinidad and Togo, Sooknanan (2002:91) finds that relative advantage, compatibility, and observability were significantly related to EFL teachers' attitudes towards CALL. However, the results showed no relationship between complexity and teachers' attitudes. Rogers (1995:21) and Thomas (1987:15) emphasize the importance of the cultural/social norms of a given country to the acceptance of technology among its people. Potential adopters may resist a technological tool because it may not fit within their micro- or macro-cultures. Thomas proposes, how acceptable a new technology will be in a society depends on how well the proposed innovation fits the existing culture. Thomas refers to his hypothesis as the cultural suitability factor. Both Rogers and Thomas note that few studies have considered the influence of people’s cultural perceptions on their adoption of technological innovations.

Among the very few researchers examining cultural norms, Li (2002:71) explores the effects of national culture on learners' use of the Internet and the differences between Chinese and British EFL learners in terms of use of the Internet. The researcher finds that there were differences in Internet experience, attitudes, usage, and competence between Chinese and British EFL learners. Most of these differences were related to learners' national culture. "A large number of studies show that EFL teachers' computer competence is a significant predictor of their attitudes towards CALL integration in their classrooms" (Berner, 2003:8; Na, 1993:210; Summers, 1990:26). Al-Oteawi (2002:253) finds that most EFL teachers who showed negative or neutral attitudes towards the use of CALL in education lacked knowledge and skill about computers that would enable them to make 'informed decision'. In his study of Korean EFL teachers, Na (1993:46) finds a positive correlation between EFL teachers' attitudes towards CALL and computer ownership, accessibility to school computers, the level of accessibility to school computers, and number of computer locations in the school. Na concludes that there was a significant relationship between the proximity of computers and the number of access resources (e.g., home and school) on the one hand and on the other, EFL teachers' attitudes towards CALL.

Therefore with regard to the importance of EFL teachers' attitudes and its relationship with the above variables, we want to find out whether the factors truly influence EFL teachers' attitudes towards technology use. These factors include in detail: perceived computer attributes, cultural perceptions, perceived computer
competence, and perceived computer access. EFL teachers’ personal characteristics (e.g., gender, age, income, teaching experience, school location, education, and teaching methods as well as computer training background) were also included in order to ensure maximum possible control of extraneous variables by building them into the design of the course. The culture and perception of using CALL as a means for EFL educational and professional development has not reached its desirable status and most of the people look at it as a recreational tool for their pastime and leisure activities. Notwithstanding, Langone et al. (1998:54) evince that EFL teachers are prevented from using CALL in many ways including inflexible guidelines, standards, and curricula. Grau (1996:23); Strudler, McKinney, and Jones (1999:80) also sustain that the lack of recognition for CALL inhibit EFL teachers from using this tool in their classrooms. “Lack of resources and materials, inadequate training, and technical support; time pressure both outside and during courses; clash between new technologies at universities and older ones at schools; and technology advocates’ ignoring to the social organization of classrooms are other obstacles to the integration of CALL in EFL classrooms” (Loehr, 1996:2; Smerdon et al., 2000:16; Abdal-Haqq, 1995:32; Lam, 2000:5; Langone et al., 1998:41; Levy, 1997a:32; Smerdon et al., 2000:34; Lam, 2000:9; Levy, 1997a:10; Reed et al., 1995:62; Smerdon et al., 2000:12; Strudler, Quinn, McKinney, and Jones, 1995:91).

Effects of CALL use in EFL classrooms on teachers and learners

Egbert, J. and Trena M. Paulus (2002:8) asseverate that when integrated appropriately in EFL classrooms, CALL stimulates and supports experiential learning in a variety of modes, provides effective feedback to learners, as well as enables working in pairs and groups. Having settled the issue as to whether computers can or cannot teach real EFL from a communicative point of view, perhaps we should now put CALL programs in their real perspective and consider some of their advantages and limitations.

Advantages of CALL use in EFL classrooms on teachers and learners

One of the most important advantages of the growth of CALL is that software vendors and EFL teachers are no longer feel bound to grammar practices as the main goal of computer use in the classroom. The movement towards communicative EFL teaching with computers is clearly expanding. The vocabulary software has started to be contextualized and to incorporate graphics, audio recording, playback, and video. More sophisticated error-checking can provide EFL learners real help in the feedback they receive, directing them to further practice, or moving them Rihab El Hachfi Essoussi to the next stage. EFL learners who need extra help with aspects of EFL that improve with practice can use small, focused programs to give them assistance outside the regular class time.

The writing process is another area where CALL has added a great deal of value. Some programs help EFL learners in the pre-writing stage to generate and outline ideas. Most word-processors now come with spelling checkers, giving weak spellers some help in finding their errors and recognizing the correct spelling from a list of options.

Further, according to Higgins (1995:210) pronunciation work in particular has benefited from CALL. Most pronunciation programs now incorporate some sort of voice recording and playback to let EFL learners compare their recording with a model. Most computer programs stimulate some discussion among group of learners even if oral practice is not the main purpose of the activity. In the same way, Lee (2000); Warshauer and Healey (1998:2) announce that When integrated appropriately, CALL can support experiential learning and practice in a variety of modes, provide effective feedback to EFL learners, enable pair and group work, promote exploratory and global learning, enhance learners achievement, provide access to authentic materials, facilitate greater interaction, individualize instruction, allow independence from a single source of information, motivate EFL learners, and arouse their interest in learning. As Johnson (1999:5) state that the promise of CALL, supported by both research and practice, underlies the emergence of technology classes across teacher education programs and a sharp increase in courses specifically aimed at EFL teachers. Warschauer and Healey (1998:15) assert that most drills now include games, as well as using the power of the computer and competition for collaboration towards a goal, the fun factor, to motivate EFL learning.

The other advantages of CALL are:

- Multimodal practice with feedback;
- Individualization in a large EFL class;
- Pair or small group work on projects;
- The fun factor;
- Variety in the resources available and EFL learning styles used;
- Exploratory learning with large amounts of EFL data;
- Real-life skill-building in computer use.

On a more general note, CALL programs, besides teaching, will provide the EFL learner with some sort of computer literacy which is becoming essential in our modern society and which could be of great help in future training and career prospects. The difference between the computer and other pieces of equipment such as tape recorders and film projectors is its interactive capability, as highlighted in the quotation below cited in Kenning and

Essoussi, 129
Kenning (1983:2): "The unique property of the computer as a medium for EFL education is its ability to interact with the learner. Books and tape recording can tell a learner what the rules are and what the right solutions are, but they cannot analyze the specific mistake the learner has Rihab El Hachfi Essoussi made and react in a manner which leads him not only to correct his mistake, but also to understand the principles behind the correct solution. The computer gives individual attention to the EFL learner and replies to him. CALL acts traditionally as a tutor, assessing the EFL learner's reply, recording it, pointing out mistakes, and giving explanations. It guides the EFL learner towards the correct answer, offers interactive learning, assesses the EFL learner's response, repeats an activity without any of the errors arising from repetition by humans, handles a very large volume of interaction, delivers to the learner feedback, and accommodates different speeds of EFL learning".

Disadvantages of CALL use in EFL classrooms on teachers and learners

Although computers in EFL classes have an important role in the learning process, there are some disadvantages of CALL. Higgins (1988:21) affirms that CALL requires computers and software, as well as other equipment all of which are expensive. Once computer laboratories are established, it is not possible to re-equip them for several years. There are many limitations of equipment and facilities, and many EFL teachers may not be able to do what they want to do. EFL learners are not very good at teaching themselves and the software does not run the lesson for the teacher. who can adapt, improve, and compensate for shortcomings in the software. It can take longer to learn a piece of computer software than handle a textbook because he has to work through it rather than just skimming through it. The EFL teacher must feel comfortable in the computer lab and with the medium in order to be able to use it effectively. In addition, it is important to use the appropriate program for the learners’ level. If it is not correct for their level, the activity cannot be prevented from becoming a chaos of uncertainty. Some EFL learners can never really adjust to using computers. They are never comfortable with them so these learners often make mistakes. Working with computers normally means that EFL learners work in isolation. This obviously does not help in developing normal communication between the learners, which is a crucial aim in any language lesson. Computers are not suitable to all the activities that go on in the EFL classroom. Computers cannot cope with the unexpected happenings and ambiguity. Computers cannot conduct open ended dialogues and cannot give feedback to open-ended questions. The time and effort required to develop computer programs could be considerable, and thus their cost and effectiveness becomes questionable. It requires competence in the target subject area, pedagogical skills and computing experience. It is more tiring to read from a screen than from a printed text; or to scroll the screen that turn over the page.

This research project is concerned at answering the following research questions:

(1) What are the attitudes of Tunisian EFL teachers towards CALL integration in their classrooms?
(2) What are the factors affecting CALL use and CALL non-use in Tunisian EFL classrooms?
(3) What are the effects of CALL use in EFL classrooms on Tunisian teachers and learners?
(4) What are the difficulties faced by Tunisian EFL teachers in the process of applying CALL within their classrooms?

RESEARCH DESIGN

Subjects

This study was addressed to EFL teachers who teach the baccalaureate level (4th grade) in El Omrane secondary school of Tunis which has 14 EFL teachers, in Taher Sfar secondary school of Mahdia which has 10 EFL teachers, and in El Imtiez secondary school which has 6 EFL teachers. The reason of choosing EFL teachers of baccalaureate to participate in the study is to evaluate CALL practices in a grade where EFL is given a great concern.

Twenty two EFL teachers, having different roots, participated in the questionnaire survey. A stratified sample of 6 EFL teachers was chosen for interviews according to the answers they gave on questionnaire sheets. The following criteria were considered while selecting the two groups of participants: whether they have positive attitudes or negative attitudes towards CALL integration in their classrooms (see Table 2).

Instrumentation

In order to get a representative data on the use of CALL
within EFL classrooms in Tunisian secondary schools, the research was conducted in the first week of the first module during the second semester in the month of December from the 2011 academic year in the following secondary schools:

- El Omrane secondary school of Tunis;
- Taher Sfar secondary school of Mahdia;
- El Imtiez secondary school of Tozeur.

The reason of choosing these three secondary schools is to have an idea about CALL integration by EFL teachers in the North region, the Sahel region, and the South region of Tunisia.

This research was primarily based on data gathered from a questionnaire survey. Over and above, semi-structured oral interviews and an empirical observation supplied this study with a qualitative dimension.

### Data Collection Procedures

#### Questionnaire survey

Before the research study begins, the questionnaire survey was designed and written for specific purposes.

#### Purpose of questionnaire

The questionnaire was divided into two sections: The first section was the background section which aimed at gathering personal information about the participants such as name, place of birth, secondary school location, sex, age, teaching experience, and income. Section two aimed to measure EFL teachers' attitudes towards CALL integration in their classrooms and the factors influencing these attitudes.

#### Design of questionnaire

The questionnaire was a combination of closed-ended and open-ended sets of questions. It was composed of 47 questions as total: 25 closed-ended questions or Likert scale response items (14 yes/no, 5 multiple choices, and 20 optional), except 2 open-ended response type items which are designed to encourage a full, meaningful answer using the subject's own knowledge and/or feelings. According to Turner (1993:5), Likert scale items are a useful and effective means of determining attitudes (see Appendix A).

#### Method of distribution and collection of questionnaire

The questionnaire was piloted between December 1 and 7, 2011 with a random sample of 16 EFL teachers. The constructive feedback from those teachers was taken into consideration in rewording items, adding new ones, modifying ambiguous wordings, and deleting the items that were irrelevant to the purpose of this study. Besides, grammatical mistakes were corrected and concepts (e.g., online lexical tutor, the lexis project, etc.) were modified so that they were clear to the participants. For this reason, the pilot study proved to be very beneficial and efficient in correcting instruments' errors.

Prior to the distribution of questionnaire, a letter was sent to the administrations of secondary schools requesting permission for the data collection (see Appendix D). When the request was approved, the questionnaire was distributed on December 8, 2011 to 26 EFL teachers and was collected in the next days. Some of the submitted questionnaire papers were returned empty for no obvious reasons. Empty responses were excluded from the processing as they did not carry any information and could not contribute to estimating any
The statistical treatments of data were used for the following purposes:

Firstly, to know if the percentage of EFL teachers who have positive attitudes towards CALL integration in their classrooms is higher or lower than the percentage of EFL teachers who have negative attitudes towards CALL integration in their classrooms.

Secondly, to know the influence of secondary school location, sex, age, teaching experience, and income on the percentage of EFL teachers who have positive attitudes towards CALL integration in their classrooms and the percentage of EFL teachers who have negative attitudes towards CALL integration in their classrooms.

Thirdly, to compare between the percentage of EFL teachers who do use CALL in their classrooms and the percentage of EFL teachers who do not use CALL in their classrooms.

Excel summary overview was the most frequently used lay-out for the research as it comprises, arranges, and demonstrates the results of questionnaire survey in a comparatively reader-friendly manner.

**Interviews**

The interviews were designed before the study gets started for specific purposes.

**Purpose of interviews**

Interviews were done via audio-taping each one took thirty minutes long and was divided into two sections. The first section comprised questions addressed to all the interviewees in order to obtain the reasons of EFL teachers’ attitudes towards CALL integration in their classrooms, the factors of CALL use and CALL non-use in EFL classrooms.

Section two comprised questions which were addressed to EFL teachers who have positive attitudes towards CALL integration in their classrooms in order to examine the differences between the traditional EFL class and the CALL-based EFL class, the ways to integrate CALL in the non-technological classroom, the characteristics of CALL methodology, and the difficulties facing EFL teachers in the application of CALL within their classrooms (see Figure 5).

**Design of interviews**

The conducted type of interview is called ‘the semi-structured interview’. The core questions for interview were taken from the questionnaire and structured parallel to its sections. In each secondary school, two interviews, in the form of dialogues, took approximately 30 minutes. The sets of each interview schedules were prepared for two different participants: an EFL teacher who has positive attitude towards CALL integration in his classroom and an EFL teacher who has negative attitude towards CALL integration in his classroom. Each participant is presented with a varied number of specific and additional questions evoked in the course of discussion. The written conversations were later transformed into Microsoft Word files and saved for the processing. The qualitative nature of EFL teachers’ responses was quantified through the Likert scaling (see Appendix B and C).

**Empirical observation**

The empirical observation was done through taking notes and video-taping within an EFL CALL-based class in El Omrane secondary school of Tunis, an EFL CALL-based class in Taher Sfar secondary school of Mahdia, and an EFL CALL-based class in El Imtiez secondary school of Tozeur in order to expound the technologies used in classroom CALL practices, as well as the preferences of EFL teachers in their classroom CALL practices and to explore the effects of CALL use in EFL classrooms on teachers and learners.

**Data Analysis Procedures**

In order to collect the data, three instruments were used during the research studies which are questionnaire survey, interviews, and empirical observation.

**Qualitative analysis**

According to Downs and Ticehurst (1998:17), the term qualitative is used to describe research methods that use and generate qualitative rather than quantitative information. Qualitative methods comprise an array of interpretative techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world. Qualitative research is based on the belief that the people, personally involved in a particular situation, are best placed to analyze and interpret it through their own words. This type of research has the following advantages:

Qualitative analysis enables the researcher to understand and explain the personal experiences of individuals. The researcher’s feelings and reasoning can help shape the research. Qualitative research focuses on people’s understanding and interpretations rather than finding external causes or laws for behavior” (Sekaran, 1995:2 as cited by Subramaniam, 2005:61).
Table 3. Superiority of EFL teachers having positive attitudes towards CALL integration within their classrooms over EFL teachers having negative attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools

<table>
<thead>
<tr>
<th>Secondary school</th>
<th>El Omrane</th>
<th>Taher Sfar</th>
<th>El Imtiez</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EFL teachers who responded and took part in the questionnaire</td>
<td>10</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Number of EFL teachers having positive attitudes towards CALL integration in their classrooms</td>
<td>7</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Number of EFL teachers having negative attitudes towards CALL integration in their classrooms</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Quantitative analysis

According to Downs and Ticehurst (1998:32), the quantitative approach to research involves statistical analysis based on numerical evidence; this is then used to draw conclusions. This data can be obtained from questionnaire surveys, empirical observations, or secondary sources. The qualitative responses of interviews were transformed into quantitative answers and measured through the use of Likert scaling.

FINDINGS

Research Question 1: EFL teachers’ attitudes towards CALL integration in their classrooms

A questionnaire survey was used to know EFL teachers’ perceptions to and beliefs about CALL, the reasons behind these attitudes, and the factors influencing them.

EFL teachers’ perceptions to and beliefs about CALL

The results of questionnaire survey show that the number of EFL teachers who have positive attitudes towards CALL integration within their classrooms (7) is higher than the number of EFL teachers who have negative attitudes towards CALL integration within their classrooms (3), in El Omrane secondary school of Tunis. The number of EFL teachers who have positive attitudes towards CALL integration within their classrooms (4) is equal to the number of EFL teachers who have negative attitudes towards CALL integration within their classrooms (4), in Taher Sfar secondary school of Mahdia. Whereas, the number of EFL teachers who have positive attitudes towards CALL integration within their classrooms (1) is lower than the number of EFL teachers who have negative attitudes towards CALL integration within their classrooms (3), in El Imtiez secondary school of Tozeur (see Table 3). Thus, the number of EFL teachers who have positive attitudes towards CALL integration within their classrooms is generally higher than the number of EFL teachers who have negative attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. While, the number of EFL teachers who have negative attitudes towards CALL integration within their classrooms is generally lower than the number of EFL teachers who have positive attitudes towards CALL integration within their classrooms in the same three secondary schools. The results of questionnaire survey show that the percentage of EFL teachers who have positive attitudes towards CALL integration within their classrooms (70%) is higher than the percentage of EFL teachers who have negative attitudes towards CALL integration within their classrooms (30%), in El Omrane secondary school of Tunis.

The percentage of EFL teachers who have positive attitudes towards CALL integration within their classrooms (50%) is equal to the percentage of EFL teachers who have negative attitudes towards CALL integration within their classrooms (50%), in Taher Sfar secondary school of Mahdia. Whereas, the percentage of EFL teachers who have positive attitudes towards CALL integration within their classrooms (25%) is lower than the percentage of EFL teachers who have negative attitudes towards CALL integration within their classrooms (75%), in El Imtiez secondary school of Tozeur (See Figure 2 and 3).

Thus, the percentage of EFL teachers who have positive attitudes towards CALL integration within their classrooms is generally higher than the percentage of EFL teachers who have negative attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. While, the percentage of EFL teachers who have negative attitudes towards CALL integration within their classrooms is generally lower than the percentage of EFL teachers who have positive attitudes towards CALL integration within their classrooms in the same three secondary schools.
Figure 2. Percentage of EFL teachers having positive attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools.

Figure 3. Percentage of EFL teachers having negative attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools.

Reasons of EFL teachers’ attitudes towards CALL

The results of interviews show that affective and pedagogical reasons are behind EFL teachers’ attitudes towards CALL integration in their classrooms.

Affective reasons

In the one part, the 3 EFL teachers who participated in interviews and have positive attitudes towards CALL stated that they are willing to integrate this tool in their classrooms because they feel confident, comfortable, and enjoyable about using computers at work or in everyday life. In the other part, the 3 EFL teachers who participated in interviews and have negative attitudes towards CALL stated that they can use computers only for general purposes, but they refuse to integrate this tool in their classrooms because they seem to be technophobes and feel anxious about using any kind of technology. They are also perturbed and stressed from the society criticism and pressure that all instructors should be capable of teaching with computers and incorporating authentic materials with textbooks’ materials inside each online course.

Pedagogical reasons

In the one part, the 3 EFL teachers who participated in interviews and have positive attitudes towards CALL stated that they have continuous attempt to introduce this tool and authentic materials to their classrooms because they looked to be aware of the usefulness of computers in improving the learning level of pupils. They are convinced that CALL makes schools worth places and guarantees interesting courses where authentic materials are mixed with textbooks in a flexible way in order to fit the needs of learners. They also believe in the communicative approach and the learner-centered EFL teaching and learning which create an interactive learning environment where learners become more motivated and interact with their teachers in a way they do things by themselves. In the other part, the 3 EFL teachers who participated in interviews and have negative attitudes towards CALL stated that using this tool as a supplement to their classrooms was not part of their culture. They said being so much attached to the traditional instruction
Factors influencing EFL teachers’ attitudes towards CALL

The findings of questionnaire survey also indicate that EFL teachers’ attitudes towards CALL integration in their classrooms are influenced by five factors which are: secondary school location, sex, age, teaching experience, and income.

Secondary school location

The number of EFL teachers who have positive attitudes towards CALL integration within their classrooms is higher in El Omrane secondary school of Tunis (70%) than in Taher Sfar secondary school of Mahdia (50%), and in El Imtiez secondary school of Tozeur (25%). While, the percentage of EFL teachers who have negative attitudes towards CALL integration within their classrooms is lower in El Omrane secondary school of Tunis (30%) than in Taher Sfar secondary school of Mahdia (50%), and in El Imtiez secondary school of Tozeur (75%) (see Figure 4). Thus, the percentage of EFL teachers who have positive attitudes towards CALL integration within their classrooms in El Omrane secondary school of Tunis is generally higher than the percentage of EFL teachers who have negative attitudes towards CALL integration within their classrooms in Taher Sfar secondary school of Mahdia and in El Imtiez secondary school of Tozeur.

Sex

In El Omrane secondary school of Tunis, the number of female EFL teachers who have positive attitudes towards CALL integration within their classrooms (4) is higher than the number of male EFL teachers who have positive attitudes towards CALL integration within their classrooms (1). In Taher Sfar secondary school of Mahdia, the number of female EFL teachers who have positive attitudes towards CALL integration within their classrooms (4) is also higher than the number of male EFL teachers who have positive attitudes towards CALL integration within their classrooms (1). In El Imtiez secondary school of Tozeur, the number of female EFL teachers who have positive attitudes towards CALL integration within their classrooms (2) is similarly higher than the number of male EFL teachers who have positive attitudes towards CALL integration within their classrooms (0) (see Table 5).

Thus, female EFL teachers who have positive attitudes towards CALL integration within their classrooms outnumber male EFL teachers who have positive attitudes towards CALL integration within their classrooms.
Figure 4. Percentage of EFL teachers having positive attitudes versus percentage of EFL teachers having negative attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools

<table>
<thead>
<tr>
<th>Secondary school</th>
<th>El Omrane</th>
<th>Taher Sfar</th>
<th>El Imtiez</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EFL teachers who responded and took part in the questionnaire</td>
<td>10</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Number of female EFL teachers</td>
<td>6</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Number of male EFL teachers</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Number of female EFL teachers having positive attitudes towards CALL integration in their classrooms</td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Number of female EFL teachers having negative attitudes towards CALL integration in their classrooms</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Number of male EFL teachers having positive attitudes towards CALL integration in their classrooms</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Number of male EFL teachers having negative attitudes towards CALL integration in their classrooms</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 5. Influence of sex on EFL teachers’ attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools

classrooms in the three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. In El Omrane secondary school of Tunis, the percentage of female EFL teachers who have positive attitudes towards CALL integration within their classrooms (40%) is higher than the percentage of male EFL teachers who have positive attitudes towards CALL integration within their classrooms (10%). In Taher Sfar secondary school of Mahdia, the percentage of female EFL teachers who have positive attitudes towards CALL integration within their classrooms (50%) is also higher than the percentage of male EFL teachers who have positive attitudes towards CALL integration within their classrooms (12.5%). In El Imtiez secondary school of Tozeur, the percentage of female EFL teachers who have positive attitudes towards CALL integration within their classrooms (50%) is similarly higher than the percentage of male EFL teachers who have positive attitudes
towards CALL integration within their classrooms (0%) (See Figure 6). Thus, the percentage of female EFL teachers who have positive attitudes towards CALL integration within their classrooms is generally higher than the percentage of male EFL teachers who have positive attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. While, the percentage of male EFL teachers who have positive attitudes towards CALL integration within their classrooms is generally higher than the percentage of female EFL teachers who have positive attitudes towards CALL integration within their classrooms in the same secondary schools.

**Age**

In El Omrane secondary school of Tunis, the number of young female EFL teachers who have positive attitudes towards CALL integration within their classrooms (3) is higher than the number of old female EFL teachers who
Table 6. Influence of age on EFL teachers' attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools

<table>
<thead>
<tr>
<th>Secondary school</th>
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<th>El Imtiez</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EFL teachers who responded and took part in the questionnaire</td>
<td>10</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Number of female EFL teachers</td>
<td>6</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Number of male EFL teachers</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Number of young female EFL teachers (aged 25-39)</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Number of old female EFL teachers (aged 39 and over)</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Number of young male EFL teachers (aged 25-39)</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Number of old male EFL teachers (aged 39 and over)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of young female EFL teachers having positive attitudes towards CALL integration in their classrooms</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Number of young female EFL teachers having negative attitudes towards CALL integration in their classrooms</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of old female EFL teachers having positive attitudes towards CALL integration in their classrooms</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Number of old female EFL teachers having negative attitudes towards CALL integration in their classrooms</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Number of young male EFL teachers having positive attitudes towards CALL integration in their classrooms</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Number of young male EFL teachers having negative attitudes towards CALL integration in their classrooms</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of old male EFL teachers having positive attitudes towards CALL integration in their classrooms</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of old male EFL teachers having negative attitudes towards CALL integration in their classrooms</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

have positive attitudes towards CALL integration within their classrooms (1). While, the number of young male EFL teachers who have positive attitudes towards CALL integration within their classrooms (1) is higher than the number of old male EFL teachers who have positive attitudes towards CALL integration within their classrooms (0). In Taher Sfar secondary school of Mahdia, the number of young female EFL teachers who have positive attitudes towards CALL integration within their classrooms (2) is equal to the number of old female EFL teachers who have positive attitudes towards CALL integration within their classrooms (2). While, the number of young male EFL teachers who have positive attitudes towards CALL integration within their classrooms (1) is higher than the number of old male EFL teachers who have positive attitudes towards CALL integration within their classrooms (0). In El Imtiez secondary school of Tozeur, the number of young female EFL teachers who have positive attitudes towards CALL integration within their classrooms (2) is higher than the number of old female EFL teachers who have positive attitudes towards CALL integration within their classrooms (0). While, the number of young male EFL teachers who have positive attitudes towards CALL integration within their classrooms (1) is higher than the number of old male EFL teachers who have positive attitudes towards CALL integration within their classrooms (0). In El Omrane secondary school of Tunis, the percent-
-age of young female EFL teachers who have positive attitudes towards CALL integration within their classrooms (30%) is higher than the percentage of old female EFL teachers who have positive attitudes towards CALL integration within their classrooms (10%). While, the percentage of young male EFL teachers who have positive attitudes towards CALL integration within their classrooms (10%) is higher than the percentage of old male EFL teachers who have positive attitudes towards CALL integration within their classrooms (0%). In Taher Sfar secondary school of Mahdia, the percentage of young female EFL teachers who have positive attitudes towards CALL integration within their classrooms (25%) is equal to the percentage of old female EFL teachers...
who have positive attitudes towards CALL integration within their classrooms (25%). While, the percentage of young male EFL teachers who have positive attitudes towards CALL integration within their classrooms (12.5%) is higher than the percentage of old male EFL teachers who have positive attitudes towards CALL integration within their classrooms (0%). In El Imtiez secondary school of Tozeur, the percentage of young female EFL teachers who have positive attitudes towards CALL integration within their classrooms (50%) is higher than the percentage of old female EFL teachers who have positive attitudes towards CALL integration within their classrooms (0%). While, the percentage of young male EFL teachers who have positive attitudes towards CALL integration within their classrooms (0%) is equal to the percentage of old male EFL teachers who have positive attitudes towards CALL integration within their classrooms (0%) (see Figure 7, 8, 9, and 10).

Thus, the percentage of young EFL teachers who have positive attitudes towards CALL integration within their classrooms is generally higher than the percentage of old EFL teachers who have positive attitudes towards CALL integration within their classrooms three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. While, the percentage of old EFL teachers who have negative attitudes towards CALL integration within their classrooms is higher than the percentage of old EFL teachers who have positive attitudes towards CALL integration within their classrooms in the same Tunisian secondary schools. Hence, the attitude of EFL teachers towards CALL integration in their classrooms is strongly related to their age.

Teaching experience

In El Omrane secondary school of Tunis, the number of EFL teachers with less than 6 years teaching experience and having positive attitudes towards CALL integration within their classrooms (5) is higher than the number of EFL teachers with more than 15 years teaching experience and having positive attitudes towards CALL (1). On the contrary, the number of EFL teachers with less than 6 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2) is equal to the number of EFL teachers with more than 15 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2). In Taher Sfar secondary school of Mahdia, the number of EFL teachers with less than 6 years teaching experience and having positive attitudes towards CALL integration within their classrooms (3) is higher than the number of EFL teachers with more than 15 years teaching experience and having positive attitudes towards CALL integration within their classrooms (1). On the contrary, the number of EFL teachers with less than 6 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2) is equal to the number of EFL teachers with more than 15 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2). In El Omrane secondary school of Tunis, the number of EFL teachers with less than 6 years teaching experience and having positive attitudes towards CALL integration within their classrooms (5) is higher than the number of EFL teachers with more than 15 years teaching experience and having positive attitudes towards CALL (1). On the contrary, the number of EFL teachers with less than 6 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2) is equal to the number of EFL teachers with more than 15 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2). In Taher Sfar secondary school of Mahdia, the number of EFL teachers with less than 6 years teaching experience and having positive attitudes towards CALL integration within their classrooms (3) is higher than the number of EFL teachers with more than 15 years teaching experience and having positive attitudes towards CALL integration within their classrooms (1). On the contrary, the number of EFL teachers with less than 6 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2) is equal to the number of EFL teachers with more than 15 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2) (see Figure 7, 8, 9, and 10).
teachers with more than 15 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2).

In El Imtiez secondary school of Tozeur, the number of EFL teachers with less than 6 years teaching experience and having positive attitudes towards CALL integration within their classrooms (2) is higher than the number of EFL teachers with more than 15 years teaching experience and having positive attitudes towards CALL integration within their classrooms (0). On the contrary, the number of EFL teachers with less than 6 years teaching experience and having negative attitudes towards CALL integration within their classrooms (2) is equal to the number of EFL teachers with more than 15 years teaching experience and having negative attitudes towards CALL integration within their classrooms (1) (see Table 7).

Thus, EFL teachers with less than 6 years teaching experience and having positive attitudes towards CALL integration within their classrooms outnumber EFL teachers with more than 15 years teaching experience and having negative attitudes towards CALL integration within their classrooms.

Table 7. Influence of teaching experience on EFL teachers’ attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools

<table>
<thead>
<tr>
<th>Secondary school</th>
<th>El Omrane</th>
<th>Taher Star</th>
<th>El Imtiez</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EFL teachers who responded and took part in the questionnaire</td>
<td>10</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Number of EFL teachers with less than 6 years teaching experience</td>
<td>7</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Number of EFL teachers with more than 15 years teaching experience</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Number of EFL teachers with less than 6 years teaching experience having positive attitudes towards CALL integration in their classrooms</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Number of EFL teachers with less than 6 years teaching experience having negative attitudes towards CALL integration in their classrooms</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Number of EFL teachers with more than 15 years teaching experience having positive attitudes towards CALL integration in their classrooms</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Number of EFL teachers with more than 15 years teaching experience having negative attitudes towards CALL integration in their classrooms</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 10. Percentage of young male EFL teachers versus percentage of old male EFL teachers having negative attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools.
Figure 11. Percentage of EFL teachers with less than 6 years teaching experience versus percentage of EFL teachers with more than 15 years teaching experience having positive attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. While, EFL teachers with more than 15 years teaching experience and having positive attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools.
Table 8. Influence of income on EFL teachers’ attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools

<table>
<thead>
<tr>
<th></th>
<th>El Omrane</th>
<th>Tahter Sfar</th>
<th>El Imlez</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EFL teachers who responded and took part in the questionnaire</td>
<td>10</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Number of EFL teachers with 800 dinars income</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Number of EFL teachers with more than 800 dinars income</td>
<td>6</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Number of EFL teachers with 800 dinars income having positive attitudes towards CALL integration in their classrooms</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Number of EFL teachers with 800 dinars income having negative attitudes towards CALL integration in their classrooms</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Number of EFL teachers with more than 800 dinars income having positive attitudes towards CALL integration in their classrooms</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of EFL teachers with more than 800 dinars income having negative attitudes towards CALL integration in their classrooms</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

In El Omrane secondary school of Tunis, the percentage of EFL teachers with less than 6 years teaching experience and having positive attitudes towards CALL integration within their classrooms (50%) is higher than the percentage of EFL teachers with more than 15 years teaching experience and having positive attitudes towards CALL (10%). On the contrary, the percentage of EFL teachers with less than 6 years teaching experience and having negative attitudes towards CALL integration within their classrooms (20%) is equal to the percentage of EFL teachers with more than 15 years teaching experience and having negative
In Taher Sfar secondary school of Mahdia, the percentage of EFL teachers with less than 6 years teaching experience and having positive attitudes towards CALL integration within their classrooms (37.5%) is higher than the percentage of EFL teachers with more than 15 years teaching experience and having positive attitudes towards CALL integration within their classrooms (12.5%). On the contrary, the percentage of EFL teachers with less than 6 years teaching experience and having negative attitudes towards CALL integration within their classrooms (25%) is equal to the percentage of EFL teachers with more than 15 years teaching experience and having negative attitudes towards CALL integration within their classrooms (25%).

In El Imtiez secondary school of Tozeur, the percentage of EFL teachers with less than 6 years teaching experience and having positive attitudes towards CALL integration within their classrooms (50%) is higher than the percentage of EFL teachers with more than 15 years teaching experience and having positive attitudes towards CALL integration within their classrooms (0%). On the contrary, the percentage of EFL teachers with less than 6 years teaching experience and having negative attitudes towards CALL integration within their classrooms (25%) is equal to the percentage of EFL teachers with more than 15 years teaching experience and having negative attitudes towards CALL integration within their classrooms (25%) (see Figure 11 and 12).

Thus, EFL teachers with less than 6 years teaching experience having positive attitudes towards CALL integration within their classrooms outnumber EFL teachers with more than 15 years teaching experience having positive attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. While, EFL teachers with less than 6 years teaching experience having negative attitudes towards CALL integration within their classrooms outnumber EFL teachers with more than 15 years teaching experience having negative attitudes towards CALL integration within their classrooms in the same three Tunisian secondary schools. It seems that the teaching experience of EFL teacher is related to his age. The older an EFL teacher the larger his teaching experience. When an EFL teacher has passed more years in teaching this means that he is old, but he must be attached to traditional methods of teaching which are based on books without the introduction of technological tools and authentic teaching materials.

**Income**

In El Omrane secondary school of Tunis, the number of EFL teachers with 800 dinars income and having positive attitudes towards CALL integration in their classrooms (1) is lower than the number of EFL teachers with more than 800 dinars income and having positive attitudes towards
CALL integration in their classrooms (3). In contrast, the number of EFL teachers with 800 dinars and having negative attitudes towards CALL integration in their classrooms (5) is higher than the number of EFL teachers with more than 800 dinars income and having negative attitudes towards CALL integration in their classrooms (1).

In Taher Sfar secondary school of Mahdia, the number of EFL teachers with 800 dinars income and having positive attitudes towards CALL integration in their classrooms (2) is higher than the number of EFL teachers with more than 800 dinars income and having positive attitudes towards CALL integration in their classrooms (1). In contrast, the number of EFL teachers with 800 dinars income and having negative attitudes towards CALL integration in their classrooms (4) is higher than the number of EFL teachers with more than 800 dinars income and having negative attitudes towards CALL integration in their classrooms (1).

In El Omrane secondary school of Tunis, the number of EFL teachers with 800 dinars income and having positive attitudes towards CALL integration in their classrooms (1) is equal to the number of EFL teachers with more than 800 dinars income and having positive attitudes towards CALL integration in their classrooms (1). In contrast, the number of EFL teachers with 800 dinars income and having negative attitudes towards CALL integration in their classrooms (2) is higher than the number of EFL teachers with more than 800 dinars income and having negative attitudes towards CALL integration in their classrooms (0) (see Table 8).

Thus, EFL teachers with more than 800 dinars income and having positive attitudes towards CALL integration within their classrooms outnumber EFL teachers with more 800 dinars income and having positive attitudes towards CALL integration within their classrooms in the three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. While, EFL teachers with 800 dinars income and having negative attitudes towards CALL integration within their classrooms outnumber EFL teachers with more than 800 dinars income and having negative attitudes towards CALL integration within their classrooms in the same three secondary schools.

In El Omrane secondary school of Tunis, the percentage of EFL teachers with 800 dinars income and having positive attitudes towards CALL integration within their classrooms (10%) is lower than the percentage of EFL teachers with more than 800 dinars and having positive attitudes towards CALL (30%). On the contrary, the percentage of EFL teachers with 800 dinars income and having negative attitudes towards CALL integration within their classrooms (50%) is higher than the percentage of EFL teachers with more than 800 dinars income and having negative attitudes towards CALL integration within their classrooms (10%).

In Taher Sfar secondary school of Mahdia, the percentage of EFL teachers with 800 dinars income and having positive attitudes towards CALL integration within their classrooms (20%) is higher than the percentage of EFL teachers with more than 800 dinars and having positive attitudes towards CALL (12.5%). On the contrary, the percentage of EFL teachers with 800 dinars income and having negative attitudes towards CALL integration within their classrooms (50%) is higher than the percentage of EFL teachers with more than 800 dinars income and having negative attitudes towards CALL integration within their classrooms (12.5%).

In El Imtiez secondary school of Tozeur, the percentage of EFL teachers with 800 dinars income and having positive attitudes towards CALL integration within their classrooms (50%) is equal to the percentage of EFL teachers with more than 800 dinars and having positive attitudes towards CALL (50%). On the contrary, the percentage of EFL teachers with 800 dinars income and having positive attitudes towards CALL integration within their classrooms (10%) is lower than the percentage of EFL teachers with more than 800 dinars income and having negative attitudes towards CALL integration within their classrooms (20%).

Table 9. Superiority of EFL teachers who do use CALL within their classrooms by EFL teachers who don’t use CALL within their classrooms in the three Tunisian secondary schools.

<table>
<thead>
<tr>
<th>Secondary school</th>
<th>El Omrane</th>
<th>Taher Sfar</th>
<th>El Imtiez</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EFL teachers who responded and took part in the questionnaire</td>
<td>10</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Number of EFL teachers who responded and took part in the interviews</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Number of EFL teachers having positive attitudes towards CALL integration in their classrooms</td>
<td>7</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Number of EFL teachers who having negative attitudes towards CALL integration in their classrooms</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Number of EFL teachers who do use CALL in their classrooms</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of EFL teachers who do not use CALL in their classrooms</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
having negative attitudes towards CALL integration within their classrooms (50%) is higher than the percentage of EFL teachers with more than 800 dinars income and having positive attitudes towards CALL integration within their classrooms (0%) (see Figure 13 and 14). Thus, the percentage of EFL teachers with more than 800 dinars income and having positive attitudes towards CALL integration within their classrooms is generally higher than the percentage of EFL teachers with 800 dinars income and having positive attitudes towards CALL integration within their classrooms in these three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. While, the percentage of EFL teachers with 800 dinars income and having negative attitudes towards CALL integration within their classrooms is generally higher than the percentage of EFL teachers with more than 800 dinars income and having negative attitudes towards CALL integration within their classrooms in the same three secondary schools.

Factors affecting CALL use and CALL non-use in EFL classrooms

The findings of interviews also indicate that the percentage of EFL teachers who do use CALL within their classrooms (70%) is higher than the percentage of EFL teachers who do not use CALL within their classrooms (30%), in El Omrane secondary school of Tunis. The percentage of EFL teachers who do use CALL within their classrooms (50%) is equal to the percentage of EFL teachers who do not use CALL within their classrooms (50%), in Taher Sfar secondary school of Mahdia. Whereas, the percentage of EFL teachers who do use within their classrooms (0%) is lower than the percentage of EFL teachers who do not use CALL within their classrooms (100%), in El Imtiez secondary school of Tozeur. Thus, the percentage of EFL teachers who do use CALL within their classrooms is higher in El Omrane secondary school of Tunis (70%) than in Taher Sfar secondary school (50%) and in El Imtiez secondary school of Tozeur (0%). While, the percentage of EFL teachers who do not use CALL within their classrooms is lower in El Omrane secondary school of Tunis (30%) than in Taher Sfar secondary school (50%), and in El Imtiez secondary school of Tozeur (100%) (see Table 9). Thus, young EFL teachers who have positive attitudes towards CALL integration within their classrooms outnumber old EFL teachers who have positive attitudes towards CALL integration within their classrooms in these three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. Thus, young EFL teachers who have positive attitudes towards CALL integration within their classrooms outnumber old EFL teachers who have positive attitudes towards CALL integration within their classrooms.
integration within their classrooms in these three Tunisian secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur. In addition, a wide range of internal factors closely related to individual contexts and external factors, closely related to work environments have been found to affect CALL use and CALL non-use in EFL classrooms. The characteristics of internal factors are invisible and unnoticeable when compared to external factors which are easily recognizable. Internal and external factors are complementary and interrelated.

Factors of CALL implementation in EFL lessons

Internal and external factors were found to facilitate the implementation of CALL in EFL classrooms.

Internal factors

The implementation of CALL in EFL lessons is affected by many internal factors such as as positive attitudes towards CALL, as well as availability of theoretical and practical knowledge.

Positive attitudes towards CALL

In El Omrane secondary school of Tunis, the 7 EFL teachers who have positive attitudes towards CALL declared that they do use this tool within their classrooms. In Taher Sfar secondary school of Mahdia, the 4 EFL teachers who have positive attitudes towards CALL also declared that they do use this tool within their classrooms. Per contra, in El Imtiez secondary school of Tozeur, the unique EFL teacher who positive attitude towards CALL has declared that he does not use this tool in his classroom.

Availability of theoretical and practical knowledge about computers

When EFL teachers have the sufficient cognitive and behavioral knowledge about computers, they can easily integrate CALL in their classrooms. In the process of applying CALL, EFL teachers act as facilitators, designers, guides, and assistants.

External factors

The implementation of CALL in EFL lessons is affected by many external factors such as high rate of technological change, availability of pedagogical support, convenience of tools, social pressure, availability of adequate administrative, financial, and technical support, availability of training, prior teaching experience with CALL, and time.

High rate of technological change

The rapid development of computers and other Information and Communication Technologies (ICTs) facilitates CALL integration in EFL classrooms.

Availability of pedagogical support

The national curriculum should reconsider the new technological tools and emphasize their importance so that CALL can be integrated in EFL lessons.

Social pressure

The social pressure makes EFL teachers frustrated and discouraged at first, but eventually it is a driving force to implement CALL in their classrooms and to improve their instruction practices in order to meet the demands from their secondary schools and society as innovative teachers.

Convenience of teaching materials

Appropriate online teaching materials and flexible teaching methods that fit current textbooks’ contents and the needs of learners enhance the implementation of CALL in EFL classrooms.

Availability of administrative, financial, and technical support

Secondary schools have a very important role in supporting their EFL academic staff to use CALL within their classrooms. At this point, administrative support, money, well equipped computers (i.e., hardware and software), laboratories, excellent network capacity, and daily equipment maintenance should be provided.

Availability of computer training

EFL teachers as individuals with complex internal variables are key elements in integrating CALL within their classrooms, so they must have the adequate computer competency. “EFL teachers should participate in computer training actively to build up their self-confidence” (Atkins and Vase, 2000:24; Egbert, Paul us, and Nakamichi, 2002:16; Jung, 2001:46; Kim, 2002:23; Lam, 2000:12; Lee and Son, 2006:56; Shin and Son, 2007:56; Suh, 2004:34; Yildirim, 2000:34).

Prior teaching experience with CALL

Having a previous teaching experience with CALL aids EFL teachers to use it in their classrooms.
Availability of time

If EFL teachers have enough time to search for online teaching materials and incorporate them with the contents of textbooks, CALL can be used in their classrooms which create a blended learning environment with a mixture of face-to-face and online learning environments.

Barriers to the introduction of CALL in EFL lessons

Internal and external factors were found to hinder the introduction of CALL in EFL lessons.

Internal factors

The introduction of CALL in EFL lessons is prevented by many internal factors such as negative attitudes towards CALL, as well as limited theoretical and practical knowledge.

Negative attitudes towards CALL

Based on their perceptions to and beliefs about CALL, EFL teachers can make every effort to integrate this tool into their classrooms. However, in El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and El Imtiez secondary school of Tozeur, the EFL teachers who have negative attitudes towards CALL do not use it within their classrooms.

Limited theoretical and practical knowledge about computers

Many EFL teachers do not have the necessary background or expertise to handle CALL materials. Not only there is a shortage of knowledge about developing computers to promote their lessons, but they do not understand how to use the new technologies into an overall plan which constitutes another barrier to the integration of CALL in their classrooms. “EFL teachers who lack sufficient competences, such as computer multimedia contents presented, systematic teaching models applied, and multimedia sources utilized, cannot integrate CALL into their classrooms” (Wei, 2005:34).

External factors

The introduction of CALL in EFL lessons is prevented by many external factors such as low rate of technological change, absence of pedagogical support, non convenience of tools, social pressure, lack of adequate administrative, financial, and technical support, lack of training, limited time for teachers to learn how to use CALL, and poor internet access. Despite the existence of external and internal barriers Tunisian EFL teachers always try to integrate CALL in their classrooms.

Low rate of technological change

The constant development of computers and other ICTs inhibits the integration of CALL in EFL classrooms.

Absence of pedagogical support

The inflexibility of national curriculum, educational policies, and textbooks is another obstacle of CALL use in EFL classrooms. “The top-down implementation of computers by authorities may cause resentment and avoidance by EFL teachers. The lack of perceived legitimacy of CALL as an educational tool has an influence on its adoption. Teachers do not use CALL in their classrooms not because they are technophobes, as some suggest, but because institutions and programs overlook the importance of training them and matching their goals with the tools they hope to employ” (Lam, 2000:18).

Non convenience of teaching materials

When online teaching materials do not respect the standards of national curriculum and do not meet the levels of learners, CALL cannot be implemented in EFL classrooms.

Lack of adequate administrative, financial, and technical support

Many EFL teachers still reluctant to introduce advanced technologies like computers in their classrooms. This may be due to the lack of principles and administrators’ support and so CALL was not easy to set into action. Another thing that needs to be taken into account is the economic aspect which is considered as fundamental. The financial barriers include high costs of software and hardware, as well as the shortage of budget. Lack of technical support and human resources, undesirable number of computers, absence of equipment remedy, and poor internet connectivity also discourage the introduction of CALL in EFL classrooms.

Lack of computer training

CALL cannot be introduced, if educational institutions, policymakers and programs overlook the importance of training EFL teachers and matching their goals with the tools they hope to employ in their classrooms. So simply providing EFL teachers with CALL resources is not enough because they have to be trained on using computers before everything. “EFL teachers training is strongly related to the employment of CALL materials in their classrooms” (Atkins and Vase, 2000:31; Egbert, Paul us, and Nakamichi, 2002:4; Jung, 2001:9; Kim, 2002:12; Lam, 2000:34; Lee and Son, 2006:12; Shin and Son, 2007:89; Suh, 2004:56; Yildirim, 2000:12).
Limited time

It seems time-consuming for EFL teachers to search for appropriate online materials and use them together with textbooks to satisfy the needs of their learners. So teaching with CALL requires more time and effort from instructors. There never seems to have enough time for preparing Internet-mediated materials and incorporating them with the contents of textbooks, since teachers are confronted by an overwhelming amount of administrative work. “Time lack inside and outside EFL classrooms is the most common constraint of CALL use” (Lam, 2000:12; Levy, 1997a:26; Reed et al. 1995:9; Smerdon et al., 2000:3; Strudler, Quinn, McKinney, and Jones, 1995:81).

Relationship between internal and external barriers

This research has revealed that simply providing computer technology resources may not always guarantee EFL teachers’ use of CALL in their instruction. It seems that internal factors also contribute to the use of this tool. The results of interviews showed the existence of a relationship between external and internal barriers to CALL implementation by observing and interviewing several EFL teachers within an elementary school who had achieved varying levels of integration. The study was designed to look at differences in teachers’ use of CALL, their perceptions of the value or role of this tool in the classroom, and their beliefs about what constitutes effective classroom practice. It also draws attention to the complementarily between internal and external barriers which prevent EFL teachers from using CALL within their classrooms. The results of the study suggest that EFL teachers’ internal beliefs about CALL interact with external barriers to facilitate or limit teachers’ computer use. Although it is important to know that teachers need more equipment or more time to plan for technology use, it may not always be enough. It may also be important to understand teachers’ reasons for CALL use or non-use and their beliefs about the usefulness of technology in teaching and learning practices. Ertmer, et al. emphasize that internal barriers may persist even when external barriers are removed, thus they suggest that while addressing barriers at each level of technology integration, the following strategies should be taken into account:

Focus on pedagogical issues, as well as technological issues during training;
Provide a broader vision of technology integration by explaining the basis and rationale and grounding for better teaching and learning;
Provide help and guidance by models, mentors, and assistance from other colleagues in the implementation process;

And provide opportunities for teachers to reflect, collaborate, and discuss the integration with colleagues. Gruich (2002:14) reports on a study which suggests that general attitudes towards CALL are a key predictor of adoption.

The study investigated community college faculty attitudes in 15 public community and junior colleges selected in southern US towards utilization of technology, the flexibility of technology, and technology efficacy among faculty in community colleges. The study finds that there was a relationship between attitudes towards teaching with technology and certain variables. These variables were EFL teachers’ beliefs about the usefulness of technology resources and their perception of flexibility and integration of technology in instruction. Ely (1990:16) warns that teachers should change their beliefs about how CALL is used in improving EFL teaching and learning. EFL teachers should not expect technology to do all the work and answer all the questions. They should learn to see technology resources as tools that they can manipulate to create ways and opportunities for better learning and teaching environment. CALL creates an EFL blended learning environment which is based on the use of online teaching materials. Kemp (2002:43) argues that the studies and theories previously cited have demonstrated the relevance of a range of variables such as teachers’ attitudes towards CALL, teachers’ self-efficacy, teachers’ innovativeness and teachers’ past experiences of educational technology in the classroom.

However, according to Kemp, many studies do not fail to identify the extent to which these variables influence EFL teachers’ attitudes, self-efficacy beliefs and practices in relation to CALL, nor do they look for a relationship between the variables and teachers’ willingness to adopt technology into their classrooms. Kemp’s study examined the influence these variables have on EFL teachers’ implementation and use of CALL in their classrooms. She found that teachers who spent more time in professional development were found to have more positive attitudes towards technologies, higher scores on self-efficacy practices, and higher innovativeness scores than their colleagues who spent less time in such activities. The common emerging issue from most of the studies reviewed is the provision of training. Most research agrees on the impact of training in overcoming both external and internal barriers to the integration of computer technology resources in instruction. The following section will go into more detail on the impact of training on developing positive attitudes towards computers, as well as computer technology adoption and integration.

Comparison between the traditional EFL class and the CALL-based EFL class

The EFL teachers who have positive attitudes towards
CALL and do use it within their classrooms in El Omrane secondary school of Tunis and in Taher Sfar secondary school of Mahdia reported in interviews that the traditional EFL class differ from the CALL-based EFL class in four aspects which are: classroom interest, classroom effectiveness, tutor, and classroom difficulty. First of all, the significant difference between the two classes was classroom interest. Learners in the CALL-based EFL class show significantly higher interest in their learning than learners in the traditional EFL class. In other words, teaching materials in the CALL-based EFL class are presented in an interesting way and the course is well organized. Online activities are especially useful and enjoyable due to learners’ use of media which provide variety, as well as interactivity and facilitated memorization, retention, verbal exchange, as well as vocabulary recall. “The use of CALL in EFL classrooms appears to increase interaction with a variety of interesting, enjoyable, and useful tasks which sustains learners’ interest” (Ayres, 2002:12; Muenier, 1999:3; Adair-Hauck, Laurel, Willingham-McLain, and Youngs, 1999:12; Warschauer, 1996; Strambi, 2001:16; Echavez-Solano, 2003:25; Holmes, 1998:19).

Besides, learners’ responses in the CALL-based EFL class are not significantly different to learners’ responses in the traditional EFL class in terms of classroom effectiveness. There are four items relating to classroom effectiveness: learners’ evaluation of their understanding of the academic subject, availability of informative feedback, as well as effectiveness of the materials. “Learners in both the traditional EFL class and the CALL-based EFL class are accustomed to teacher-centered teaching styles rather than learner-centered teaching styles which involve interaction with the other teachers and learners. This may have a negative impact on the effectiveness of their learning environments” (Hird, 1995:12; Lim, 2000:30).

Further, CALL is not only seen as a tool but also as a tutor which communicates enthusiastically with EFL learners and assists them. In this case, web-enhanced environment may have a positive impact on EFL learning. “CALL is a medium through which EFL learners must negotiate meaning by interaction, interpretation, and collaboration rather than providing finite and authoritative information for carrying out a stipulated task. Nevertheless, it may take time to adjust their learning behavior and expectation of the classroom to fit in with a changed methodological and procedural paradigm. The electronic medium facilitates communication with the tutor too, resulting in assistance and support being easily available” (Warschauer, 1996:12; Holmes, 1998:8 and Kern, 1995:27).

Lastly, CALL welcomes more learning feedback which is more manageable, efficacious, and easy in the CALL-based EFL class than the traditional EFL class. The scores returned by learners of the CALL-based EFL class in relation to the measure of perceived course difficulty are in fact extremely low when compared with the scores returned by learners of the traditional EFL class. In the traditional EFL class learners seem to have more difficulty in understanding the course than in the CALL-based EFL class where learners are assisted not only by the teacher, but also by software and online materials.

**Ways to integrate CALL in the non-technological EFL class**

The findings of interviews pointed out that CALL can be integrated in the non-technological EFL class by two ways: creating a small network and using computers from home.

**Creating a small network**

A small computer network can be implemented in the classroom. Building the small network helps the learners access and share files, share a printer, and share the same Internet connection through the same phone line. The learners can be exposed to hands-on practice and are able to browse the Internet. To create a small network, the instructor needs a 5-port 10/100M Ethernet mini switch with a USB bus power supply and several networking cables. A network of two computers can be first tried out at home. Laptops or PC’s are usually equipped with an Ethernet port, a modem, a network card, Windows XP, a firewall and Internet Explorer.

An Ethernet-based network can be created with the instructor’s laptop serving as the server (main computer). Connect the main computer to the hub with a networking cable and connect the hub to the power outlet. Connect the other laptops to the hub with the networking cables. To configure the network, use the Network Setup Wizard that comes with Windows XP to name the laptops in the network, create the workgroup, and create a network bridge. Extend a phone line from the main office to the classroom.

To enable the network to save, access, share, look at, modify, delete, rename, and add files and web pages, create a shared documents folder. To enable the learners to print files from any laptop or from the Internet, a printer can be shared by clicking the ‘Start’ button in Windows XP, selecting the ‘Control Panel’, clicking on the ‘Printers’ icon, double-clicking the ‘Add a Printer’ wizard, choosing the ‘Network Printer’ option and clicking Next. The wizard will install the appropriate driver when the CD with the driver software is inserted. With all the laptops in the network configured, the laptops can be connected to the hub at the beginning of the session, and detached from the hub at the end of the session. During the class session, the internet and printer are shared. Web pages and other files can be saved in the Shared Documents folder, and copied to the learners’ laptops later in order to help them find what they search and need in the acquisition of language.
Using computers from home

Online chat, pen pals, e-mail, a newsgroup, a discussion forum, or an online course can be used from home or from an Internet café as a supplement to EFL in-class instruction. Use a questionnaire to assess the learners' computer literacy skills before instruction. Tell the learners about the type of CALL to be used, why and how. Create your own mailing list, discussion forum, newsgroup, or chat room. Sign up with an Online Course Management System such as NNCnet or OWCP as they are easy to use and free of charge. Give the students the course URL and class key, and have them enroll themselves. Explain one course component at a time. Start a thread in 'Conferencing'. The first thread should require the learners to introduce themselves. Write a paragraph about yourself and ask the learners to write one about themselves. Add some websites related to themes taught in class in the "Link Sharing" are. Sites may cover dictionaries, encyclopedia, writing skills, grammar points, exercises or quizzes. Post one announcement at a time and one thread per week. You may add a new announcement every couple of days. Break complex topics several threads. When you post a new thread, post your own paragraph in response to the thread as an example for the students to follow. Encourage the students to write about something that they know or have experienced. Encourage the students to locate articles about certain themes from www websites such as Yahoo Movies, e-How, Discovery, about.com, NASA Kids. Set a time slot each day to respond to the students. Encourage the students to send e-mails to you and to their classmates. Do not highlight spelling and grammatical errors. Comment on students' messages and allow them to comment on each others and on yours. Behave like a learner. Do not react negatively if they critique you. Send group messages every now and then to keep the learners interested. Encourage the students to post their own threads and websites.

Characteristics of CALL methodology

The findings of interviews sustained that computers are not very good at teaching themselves. How effective computers are in the language classroom depends on the way the teacher and students use them. Computers allow the user to carry out tasks which are impossible in other media such as providing feedback automatically on certain kinds of exercises or editing a piece of writing by deleting, moving and inserting text. Students can do some exercises on their own and have them marked by the computer. Multiple-choice and total deletion programs provide examples of this. Students can carry out exploratory work which is not assessed by the computer but which allows them to see the results of their decisions.

Hardisty and Windeatt (1989:113) say that the examples of this can be seen in word-processing, spreadsheet and simulation programs. Again they argue that students should have an opportunity to discuss with the teacher the activities they have done on the computer, otherwise they cannot learn effectively from them. In this respect, the methodology used in CALL classes is similar to that which is used in non-CALL classes, but there are some points that have to be distinguished. The main characteristics of the methodology for CALL are using a variety of interaction patterns in class, information-transfer and information-and opinion-gap tasks, fluency and accuracy practice, as well as computer-work, pre-computer work, and post-computer work.

Use of a variety of interaction patterns in class

Learners can work individually, in pairs, and groups, or as a whole class in CALL laboratories.

Information-transfer and information-and opinion-gap tasks

CALL includes three main activities which are information-transfer activities, information-gap activities, and opinion-gap or problem solving activities.

Information-transfer activities

In CALL generally activities involve transferring information from one medium to another; that is, from one learner to another, or from one group to another group. Learners listen to a tape-recording of a story and then sequence the events of the story, or match sentences spoken with the characters in a story, or load a text written by another group of students into a word-processor. The networked computers provide the optimum conditions for information-transfer activities. This helps to create a communicative learning environment where FL learners are interacting not only between each others, but also with their teachers in order to improve the level of course.

Information-gap activities

CALL lessons frequently involve an information-gap, with one student, or group of learners needing information from others in the class to complete an activity. Sometimes the computer itself has the information hidden. The programs which involve total or partial deletion are examples of activities based on such an information gap.

Opinion-gap or problem solving activities

A number of CALL lessons are based on opinion-gap activities. The learners have different opinions concerning
a problem-solving scenario, such as the cheapest way of allocating resources in a spreadsheet, or a simulation. Alternatively, the difference of opinion may be over the best ending to a short story written on a word-processor.

Fluency and accuracy practice

One of the characteristics of many CALL programs is that the students have to pronounce or type in exactly the answer the computer expects because the computer can only accept the answers it has been programmed to accept.

Computer-work, pre-computer work, and post-computer work

There are three important stages in CALL activities which are: pre-computer work before students make use of the machines, work done at the computer, and post-computer work done away from the computer. These stages are complementary and necessary in each EFL classroom practices.

Effects of CALL use in EFL classrooms on teachers and learners

The use of CALL methodology in EFL classrooms has many characteristics, as well as positive and negative effects on both teachers and learners. It can facilitate the EFL learning or cause problems to the teachers and learners who encounter some difficulties especially during downloading documents and online courses.

Benefits of CALL use for EFL teachers and learners

The empirical observation which was done within three EFL classes in El Omrane secondary school of Tunis, in Taher Sfar secondary school of Mahdia, and in El Imtiez secondary school of Tozeur disclosed that CALL use has the following benefits for teachers and learners: quality improvement, adaptability, rapid information access, independency, experiential learning, novelty and creativity, direct feedback, motivation, interaction, EFL skills development, autonomy, discipline, and entertainment.

Teaching quality improvement

It occurs that new EFL learning contexts created by the use of CALL as essential, desirable, and non-threatening blended environments add value to teachers and help them to use different methods and accommodate the different needs of fast, slow, or handicapped learners.

Adaptability

Unlike books which are produced in a single uniform format and cannot suit the knowledge levels of EFL learners, CALL programs are more learner-friendly because they are flexible.

Rapid information access

By implementing CALL in their classrooms, EFL teachers can have a faster, easier, and better entry to authentic materials whose contents are continually and constantly up-dated with minimum efforts and less time. The uses of CD-ROMs provide learners with a considerable rich EFL input and a wide variety of registers and accents. It also help them to memorize what they learn everyday and save files or videos.

Independency

Still use their books, EFL learners in CALL activities are given the chance to escape from canned knowledge and discover thousands of information sources. They can equally get at current and real time authentic materials include for instance online newspapers, webcasts, podcasts, newsroom video-clips, or even video-sharing websites such as say You Tube which fulfills their need for interdisciplinary learning in a multicultural world.

Experiential learning

The use of audio and video-multimedia, as well as Internet in the CALL-based EFL class let learners have an exploratory learning and tackle a large amount of data and human experience in a huge real world. So they become the creators not just the receivers of knowledge and can learn by doing things themselves. As the way information presented is not linear, they develop their thinking skills and choose what to explore before they start their learning activities.

Novelty and creativity

Books have fixed and uncontrolled modes of presentation, unlike computers which combine visual with listening materials such as texts with graphics and pictures. Videos, sounds, images, and colors presented by CALL stimulate EFL learners’ sight and hearing simultaneously.

Direct feedback

CALL acts traditionally as a tutor and gives EFL learners the possibility of positive or negative feedback. It automatically assesses learners’ replies, pointing out mistakes, and giving explanations through: Explicit correction (i.e., explicitly giving the correct form and indicating that this is a correction), Recast (i.e.,
reformulating all or part of the student’s utterance without the error and not indicating that this is a correction), Clarification request (i.e., asking for a clarification), Metalinguistic feedback (i.e., comments, information, or questions about the correctness of the student’s utterance, but not giving the correct form), and Elicitation (i.e., eliciting a response from a student by pausing or by asking him to reformulate the response), Repetition (i.e., repeating the student’s utterance usually marking the error intentionally).

Motivation

When CALL is employed in EFL classrooms, it promotes learners’ motivation and self-esteem through chat rooms and virtual environments such as Second Life where the learner can practice not only the written use of language, but also practice speaking and pronunciation without the fear of making mistakes. The charm of virtual CALL-mediated environments transforms learning from a traditional passive experience to one of discovery and excitement in a less stressful setting where EFL learners can not only acquire the language from the books, but also from online courses by browsing the net and searching for useful documents which can help them to enrich their vocabulary knowledge and their grammar skills so that they become good speakers of the language.

Interaction

CALL composes a warm climate between EFL learners and their teachers, as well as among themselves. It also encourages the collaborative learning by letting shy and inhibited learners work in pairs or small groups. So high fliers can produce common products and realize their full potential without preventing their peers from working at their own pace and produce common products. EFL teachers are introducing myriads of CALL projects including simulations between their learners and learners in other countries, as well as widening the learning perspective into that of learning about the cultural context being used. When the computer technology combines with the Internet, it creates a platform for global understanding, as well as fabricates a channel for learners to obtain a huge amount of human experience and enter the ‘Global Community’. In this way, learners not only can extend their personal view, thought, and experience, but also can learn to live in the real world. For example, the random access to web-pages similarly breaks the linear flow of EFL instruction and affords vast opportunities for cooperation between learners and peers. Thus, learners can participate in distance learning and communicate with other learners they have never met before.

EFL skills development

Using CALL in EFL classrooms enables the vocabulary recall and the verbal exchange. It also builds learners’ real life skills and provides them with some sort of large amount of computer literacy which is becoming essential in our modern society and could be of great help in future training and career prospects. Some CALL programs help EFL learners in the pre-writing stage to generate and outline ideas, as well as in the pronunciation stage in which most 205 word-processors now come with spelling checkers stimulating oral activities, giving weak spellers some help in finding their errors, and recognizing the correct spelling from a list of options. According to Warschauer and Healey (1998:43), CALL offers EFL learners various activities for developing different language skills. They can provide a useful and motivating medium for both integrated skills and separate activities.

Reading Skills

There are three main ways in which CALL is useful in helping EFL learners develop reading skills which are:

Incidental reading: most of the CALL programs, whether oriented towards reading not, involve the learner in reading text for the successful completion of the activity.

Reading comprehension: traditional question and answer CALL programs are used for reading comprehension as well as grammar and vocabulary development.

Text manipulation: there are a number of ways in which computers can manipulate continuous text which involve the learner in close study of the content and structure of the text. An example might be shadow reading which provides students with authentic texts.

Additionally, “sentence structure, speed reading, and cloze-reading are some of the alternative ways of developing reading skills. An example for software matching activity might be the JMS New line activity: ‘Match the slang words with their definitions’. Another important activity might be JMS New line Software: Speed Practice Reading Comprehension activity” (Sperling, 1998:24).

Writing Skills

The word-processing program is one of the most common purposes for which computers are used and it is regarded as the most powerful to use when starting to work with CALL. In order to use word processors learners have to be familiar to the keyboard of the computer and they also have to learn the following before using the computer:

- Learn how to start a word processor.
- Learn how to delete and insert a letter, a word or a larger chunk of text.
- Learn how to save text.
- Print a text.
- Moving words, lines, sentences, etc.

“Word-processing programs transform the computer into a sophisticated and flexible writing aid that can improve learners' writing skills and their attitude toward writing. The main principle of word-processing programs is based on the ability to manipulate text freely. By writing text into the memory of a computer, the writer can play round with his text until entirely satisfied. The word processor provides useful practice for guided and free writing. Vocabulary, grammar, punctuation and reading tests have an obvious relevance to the sub-skills that are needed for writing. By providing something to write about, the computer stimulates both writing and speaking. An example might be the following activity from the ‘Red House Dictionary CD-ROM’: Put the jumbled idioms in order and write them in your notebook” (Duber, 2000:54).

**Speaking Skills**

Oral communication is very important in EFL learning process. In today’s EFL classrooms, considerable emphasis is given to oral activities in which learners use the language they have learned to communicate with each other. These activities include simulations, role-plays, and discussion. “CALL simulations provide a stimulus for such a work, as they offer both a focus for oral activity and a continually changing scenario for learners to talk about. CALL has a useful contribution to the development of oral skills if they are used wisely” (Hammersmith, 1998:23). Dialogue studies can be made by the computers with the aid of the movies, learners watching these dialogues can see the conversation, setting and cultural atmosphere clearly. They can also see the body movements and the semiotic background of the conversations and learn a powerful experience and thus improve their communicative competence. These all pave the way to their communicative performances through reinforcing their accuracy, intelligibility and fluency.

The main advantage of computer simulations is that they are very motivating. They give learners instant feedback on the effects of their decisions, and this feedback itself stimulates arguments and comments, suggestions and counter suggestions. An activity for improving listening and speaking skills might be a listening activity from ‘Learn to Speak English Software: Spoken English Demo: Communication Skills’.

**Listening Skills**

Listening activities that use the computer are more complex than the other kinds of CALL materials since they involve equipment other than the computer itself. One of the simplest ways of giving practice in listening comprehension is to use a multiple-choice or fill-in program in conjunction with a cassette recorder or the latest multimedia containing a recorder. In addition to the normal feedback given after a wrong answer, the computer can let the learner hear the relevant part of the tape again. If a separate cassette recorder is used, the error message can give the learner appropriate counter numbers. Another simple technique is to use a tape with a test- reconstruction program which enables learners to reconstruct a summary of a recorded anecdote on screen by the help of the tape. Academically, this can and does enhance language teaching by bringing the outside world into the classroom, and in short making the task of learning a more meaningful and exciting one. “Such activities not only help to integrate listening and writing skills, but also evaluate learners' listening comprehension skills in a more active way than is generally possible in a non-CALL class” (Jones and Fortescue, 1987:124). An activity for improving listening skills might be listening activity from ‘JMS Newline Software’, The Listening Learner: Listening Comprehension, Spoken English.

**Grammar Development**

“Computer software and the WWW provide both EFL learners and teachers with materials which integrate language skills, as well as with separate activities for grammar, vocabulary, reading, and the like. Some grammar activities that can be done on the computer might be: matching, multiple choice, fill in the gaps or complete the following” (Blackie, 1999:81 and Sperling, 1998:101). Sample multiple choice grammar quizzes are provided in www.eslcafe.com. The quizzes can be done either online or after printing them. You do not have to subscribe or pay for it: it's free! After finishing the exercise you can ask for immediate feedback by clicking on the submission button.

Another grammar test resource site which provides you with test on placement, general English, grammar or business English is the www.englishtown.com which requires subscription to do the mini tests or to release various grammar exercises as download material for EFL learners to print them. For example, the grammar test on 'conditionals' in this site provides the learners with immediate feedback after each question. Here again, the tests can be done either online or after printing them. However, you cannot ask for immediate feedback if you print the material. Vocabulary related Computer software such as guessing games, do-it-yourself dictionaries or word building activities provide a nice challenge for learners. A word game program such as the Word Hunt or the site www.puzzlemaker.com enables the learners to learn and practice vocabulary.

**Autonomy**

CALL provides EFL learners with greater chances for
individual forms of work and facilitates the organization of their self-directed activities, so that they can gain privacy and feel more responsible for their own learning. It also calls for a change in the role distribution of teacher-learner where learners take on teaching functions.

**Discipline**

CALL deepens the academic achievement of EFL learners and makes them more engaged in learning by doing more school work when not in school which improve their tests' scores and decrease their dropouts.

**Entertainment**

CALL is not only a fashionable way to learn, but it is also a means of entertainment for EFL learners who enjoy using the Internet and playing games.

**Drawbacks of CALL use for EFL teachers and learners**

EFL teachers who have negative attitudes towards CALL in El Omrane secondary school of Tunis, in Taher Sfar secondary school of Mahdia, and in El Imtiez secondary school of Tozeur disclosed that CALL use within EFL classrooms has the following shortcomings for teachers and learners: time waste, teacher dependency, inadequate communication, anti-social behavior, native language and culture endangerment, health threat, and costs inflation. In this manner, CALL use in EFL lessons cannot only be beneficial for teachers and learners, but also can have many disadvantages for them which hinder the success of learning and cause many problems and difficulties, especially during the online courses.

**Time waste**

Hand-written essays are significantly longer and more organized than technical essays produced by CALL programs because the EFL teacher spends time teaching about work-station use instead of the writing process and the learners could not see what the final paper looked like which supplement his efforts, so he wastes time working on other activities while using the computer. The teacher may also not have sufficient time to brainstorm topics before and after posting, go through the material in the hyperlinks, check, and respond to all the e-mails, discussion threads, and newsgroup discussion threads. Some learners who do not have prior experience in using the keyboard may waste a lot of valuable time identifying in order to print their responses and some others prefer speaking than writing because it is more tiring to read from a screen than from a printed text or to scroll the screen than turn over the page.

**Teacher dependency**

In the CALL-based EFL class, the teacher is not able to design his own tests and exercises or to upload graphics and Power Point presentations.

**Inadequate communication**

Face-to-face discussions that precede writing activities in the traditional EFL classrooms are superior to CALL programs in producing written comments and explanations. Less than 40% of the EFL CALL-based class enrollment participates in online courses. Some learners do not post any responses if not prompted by their teacher. Other learners do not use the course tools properly, but they write ‘Thank you’ notes and compliments instead of real responses or start a new thread dealing with the same topic instead of posting a response under that topic which can decrease the quality of learning and create an unequal understanding.

**Anti-social behavior**

The more CALL is implemented in EFL classrooms, the more learners are dehumanized.

**Native language and culture endangerment**

CALL makes EFL learners more dependent on foreign countries and hinders them from learning their Arabic traditions.

**Health threat**

Spending too much time in the CALL-based EFL class can harm the health of teachers and learners.

**Costs inflation**

The time and efforts required to develop CALL programs can be considerable. So startup costs which include hardware, software, staffing, and training are expensive which endanger the budget of the secondary school.

**Technologies used in CALL practices**

CALL embraces many types of computer technologies such as word processing, software, compact disks, authoring tools and software, e-mail, chat, pen pals, mailing lists, lists, discussion forums, videoconferencing, the World Wide Web, online courses and so on.

**World Wide Web (WWW or Web)**

It refers to the whole constellation of resources that can be accessed using gopher, FTP, HTTP, Telnet, Usenet, WAIS, and other tools. The World Wide Web (WWW)
presents the user with documents (web pages), and links to other documents or information systems. Web pages include text as well as multimedia (images, video, animation, sound). The WWW can be used in a myriad of ways for language teaching. It provides linguistic exercises, authentic reading materials, simulating communicative exercises such as student discussion of trips or vacations, and is used as a medium of student publishing. Web resources can be viewed as bibliographic documents, electronic Web resources, multimedia objects, database concepts, or case tool structures.

Mailing Lists on the Web (Listservs)

A mailing list is a collection of names and addresses used by an individual or an organization to send information or material to multiple recipients sharing the same interest. The term is often extended to include people subscribed to such a list.

Newsgroups

Thousands of newsgroups or discussion groups are currently active over the Internet, sharing information among millions of people. They cover virtually every subject such as science, entertainment, sports, children's education, nature, or computing. A free newsgroup can be created using Google, Yahoo, Usenet, or MSN groups. A newsgroup has a moderator who watches over and allows uploading rights to the newsgroup that s/he has set up and is responsible for moderating. A moderator may enroll members or send a message to individuals to join the group.

Pen pals (or pen friends)

They are people who regularly write to each other. A pen pal relationship is often used to practice writing and reading in a foreign language, to learn more about other countries and life-styles, and to reach out and communicate with a fellow human being.

Chat

It is an informal online conversation. Students may engage in a voice chat, video chat with personal contacts using Talk City, Yahoo or MSN. Yahoo, MSN and Windows messengers may be downloaded from the Internet. They can create their own chatroom or join any chatroom available on the net: General chat, official rooms, art, animals and pets, business, finance, technology, cultures and community, entertainment, family and home, games, politics, health, hobbies, crafts and interests, movies, music, recreation, sports, religion, education, science, sports.

Electronic Mail (E-mail)

It refers to messages, usually text, sent from one person to another via the computer. E-mail accounts can be created with Yahoo, Hotmail, Maktoob, or Lycos.

Discussion Forums

They are places where people can exchange messages of common interest.

Online Courses

Online courses (web-based instruction) refer to computer based instruction in which courses use the WWW as the primary delivery method of information. Materials, as well as communication with the instructor, are provided through the course web-site. Students may participate in the class by using the Internet for all or part of the coursework. The instructor posts course information, assignments, hyperlinks and discussion threads.

Software

According to Triki, M; and Sellami Baklouti, A. (2002, 27), concordance software is a program in the Internet that manages to count, catalogue, or index a text. It can manipulate two or more texts at the same time.

Generic software applications

“They are multi-purpose programs that are not designed specifically for FL teaching and learning including (Dr. Dilip Barad, Dept. of English, Bhavnagar University, Bhavnagar, Gujarat-India, 2007: 15-17):

- Word-processors such as Microsoft Word, Microsoft Works, Word Perfect? and Open Office;
- Sound recorders such as Sound Recorder for Windows and Garage Band for Mac;
- Video-makers such as Windows Movie Maker and i-Movie;
- Online tutorial and video-conference;
- Microphones;
- Presentation software such as Power Point;
- E-mail packages;
- Web browsers such as the WWW”.

CALL software applications

CALL software, such as Rosetta Stone and Tell Me More, provides lessons and exercises to enhance FL learners' listening, speaking, reading, and writing skills. These programs usually include a substantial degree of interactivity like software laboratories and CD-ROMs. Dr.
Dilip Barad, Dept. of English, Bhavnagar University, Bhavnagar, Gujarat-India (2007: 15-17) sustains that there are mainly four types of software used in CALL which are: do what I tell you, guess what was there, can I help you, and how do I get out of this.

Do what I tell you

The machine controls to get a great extent the nature and order of events. This includes drills, exercises, quizzes, and tests, and at the end programmed learning it gives the student a task, such as: ‘write a sentence to complete or a question to answer’. Then, it tells the student whether s/he is right or wrong and invites her/him to try again if he was wrong. When the student has found the right answer, he can go on with the next task and choose what he wants such as grammar and vocabulary tasks.

Guess what was there

All the words of a text are masked out and the student has to point to single words and buy them. The minimum number of words that the student needs in order to answer a comprehension question are displayed at the end of the text.

Can I help you?

This type of software describes uses of the computer as a tool. The computer’s natural role is that of a slave, obeying orders and carrying out jobs for its master on demand, and the obvious language job is word-processing. All the word-processors have a search and replace function that can be used to create practice material from any piece of text which has been typed in. For instance, the teacher can replace all the articles with XXX and then print out the text so that the learners write them back in the gaps.

How do I get out of this?

This type consists of activities such as simulations, games, puzzles, many of which were not created for language learners at all. As seen above, CALL software is very diverse. It includes drills, tutorials, games, simulations and information databases. “Good software should be easy to use and have a clear purpose. It should be based on instructional theory so that it can be used for self-study at home. Additionally, CALL software should be enjoyable. “Oxford Advanced Learner’s Dictionary” is one among the many software programs in the market” (Higgins, 1995:31).

According to Warschauer and Healey (1998:42), the reason to buy software is providing an integrated teaching that will:

- Provide realistic, native-speaker models of the language in a variety of media;
- Offer a language learning curriculum;
- Do a needs assessment;
- Determine the best next step for the learner and provide practice with that skill area;
- Record what the student has done, along with an evaluation;
- Be available at any time and require no additional pay.

Internet

By the mid-1990's, experts estimated that more than fifty million computers were linked to the information superhighway by way of a network called the Internet (Net). “The internet is a computer-based worldwide information network. It is composed of a large number of smaller interconnected networks called internets. These internets may connect tens, hundreds or thousands of computers, enabling them to share information through a series of fibrotic cables (phone-lines) (Encarta, 2000). With a ‘Personal Computer’ (PC) you can get connected to the internet via a ‘Modem’ (Modulator-Demodulator) which is a very small device and can be attached to your computer. It connects your computer to another or other computers over communication/telephone lines.

The Internet is made up of a combination of various software applications, each with its own unique function. However, in order to take advantage of the greatest Internet software like the Netscape Navigator for exploring the Web you will need a late-model Macintosh or PC running Microsoft Windows or Windows. Once on the Net you will be able to get access to:

- E-mail which allows you to instantly send and receive messages from all over the world;
- WWW;
- Chat which is a way to communicate in real time to others.

On the Internet, there are databases that contain information on every branch of human knowledge and enterprise- from the most serious scientific topics to catalogues of jokes. Due to advances in the worldwide telecommunication systems, the Internet has become a global network and universities, businesses, and individual users in virtually every nation are on the Net. EFL teachers are in a constant need of additional teaching materials; therefore, the internet is an invaluable recourse for them. Since the most common objective for language learners is better communication, the internet will improve their communication skills. For the teacher aiming to provide the desirable dynamic learning environment, the need for appropriate and stimulating resources and experiences are never greater, and it is here that the Internet can make a significant and unique contribution. “A teacher can get access to English
teaching support of many kinds through the WWW sites specialized in English teaching; download a wealth of realia from newspapers, tourism and hobby-based WWW sites to use in class” (Blackie, 1999:28).

“The Internet also widens the students' horizons, provides regular confirmation of the usefulness of proficiency in the language and gives powerful stimulus to the broader education process. Although the internet is a terrific resource for accessing full-text newspapers, magazines, journals, reference works and even books, there is the problem of where to begin, which might be overwhelming for novice users; for, there is an infinite amount of information and recourses. However, there are tools such as Search Engines, Directories, Libraries and Online Encyclopedias that can help find the information you are looking for, whether it is a particular EFL software or information on CALL” (Encarta, 2000). “The rise of CALL communication and the Internet has reshaped the uses computers for language learning at the end of the 20th century. With arrival of the Internet, the computer, both in society and in the classroom, has been transformed from a tool for information processing and display to a tool for information processing and communication” (Sperling, 1998:73). “For the first time, learners of a language can now communicate inexpensively and quickly with other learners or speakers of the target language all over the world. This communication can be either synchronous (with all users logged on and chatting at the same time) or asynchronous (with a delayed message system such as electronic mail)” (Warshauer, 1995:86). With the World Wide Web, learners of many languages have access to an unprecedented amount of authentic target-language information, as well as possibilities to publish and distribute their own multimedia information for an international audience. Dudeney (cited in Sperling, 1998:74) enthusiastically reports that the internet is like a library which is five minutes old. Similarly, Gray (cited in Sperling, 1998:20) states that the internet is such an amazing seemingly infinite collection of recourses that with access to all this information teachers can be more creative and up-to-date.

In sum, the Internet enables EFL learners to:

- Correspond in English by e-mail with other classes in other parts of the world;
- Develop individual-pen-pals to write to at out of class time;
- Communicate in real-time chat rooms;
- Share opinions and ideas across cultures on sports, music, food, hobbies, etc.;
- Conduct international surveys for class work;
- Read and listen to up to date news.

As for disadvantages, connecting to the Internet might take long time; it might break down in the middle of communication and it might be expensive. It should be borne in mind that the Internet does not mean the end of the blackboard, whiteboard, the course book, the tape-recorder or the OHP; but it does provide tremendous opportunities, stimuli, and resources for not only teachers but also learners which creates a blended learning environment appropriate for teaching and learning.

Multimedia

“A major impact has been created by the arrival of CD-ROMs (Compact Disk-read only memory) another invaluable material for teachers and learners; multimedia and an integration of text, audio and video material all in one package is seen now, whereas everything was 'text-based CALL' in the past” (Jarvis, 2000:45). “Multimedia computing, the Internet, and the WWW provide an incredible boost to CALL applications. First ignored, CALL is finally achieving the recognition it deserves thanks in large part to these developing technologies (Duber, 2000:108). Personal computers enable users to interact with multimedia programs- that is, users become active participants rather than passive observers. Many computer programs combine several types of media, such as text, graphics, animation, and sound. Desktop computers are now able to play natural human speech together with full screen interactive video which was impossible just a few years ago. Users can now communicate and interact with one another in real-time (Duber, 2000:109). The advantage of CD-ROM is that it can offer books, videos, audio-cassettes, language labs and computer language games as individual methods of study all together, in such a small package. However, it takes time for sound and pictures to appear on the screen, so the more video or audio it has, the longer everything is going to take. In today's world people are too impatient and not willing to wait any longer than two seconds before they expect something to happen.

The fun and the learning potential of the CD-ROM is that it enables individuals or at most two or three students on one computer control their own learning. Before buying and using CD-ROMs, it is worth understanding what you can expect and what you want and evaluate this form of material. Therefore, an EFL teacher should consider the following:

- How do you want to use it?
- What and how is it teaching?
- How easy is it to use?
- What back-up is there?
- What methodological features does it use?
- What makes it different to learning from a book?

EFL teachers’ preferences in their classroom CALL practices

The results of interviews delineate that the EFL teachers
who have positive attitudes towards CALL and do use it within their classrooms in El Omrane secondary school of Tunis, in Taher Sfar secondary school of Mahdia, and in El Imtiez secondary school of Tozeur announced that they prefer to use electronic portfolio, web-quest, and digital video which are considered as the most effective teaching means.

**Electronic portfolio (E-portfolio)**

Electronic portfolios (E-portfolios) can be used as a medium for self-assessment and an alternative.

**Portfolios as a medium for self-assessment**

“A widely used instrument for practicing self-assessment strategies is the portfolio. Portfolios provide an opportunity for EFL learners to monitor their own progress and take responsibility for meeting goals. Through the portfolio approach learners are acknowledged as contributors and the multicultural resources that they bring to assessment situations serve as rich data sources. Portfolios designed by learners can help capture the full range of the learners' competency” (Hirvela and Pierson, 2000:96).

“Developmental portfolios also enable learners to demonstrate their growth in EFL proficiency including oral EFL and literacy development, academic achievement, and attitudinal variation in terms of acculturation, learning, and acquisition of learning strategies. So at the heart of portfolio pedagogy there is a place for self-assessment guided by learners” (Hirvela and Pierson, 2000:14).

“While portfolio assessment is practiced as an integral part of instruction, it also serves as a practical medium for self-assessment and propose three steps for practicing self-assessment with portfolios which are: documentation, comparison, and integration. The first step, documentation, asks learners to provide a justification for the selected items for the portfolios. In comparison, learners compare a recent piece of work with an earlier one and identify ways that they have improved. In the final step, integration, learners use portfolios to provide examples of their growing strengths in oral or written EFL. These three steps not only facilitate reflection on learning, but also prepare learners to become independent” (Paulson, 1992:46).

“Web-quest can be defined as an inquiry-oriented activity in which some or all of the information that the learners interact with come from resources on the Internet optionally supplemented with video-conferencing” (Dodge, B., 1997:43). “Educators believed that the original definition failed to capture the meaning and theoretical underpinnings of the web-quest concept. A web-quest is a scaffolded learning structure that uses links to essential resources on the WWW and an authentic task to motivate learners' investigation of a central, open-ended question development of individual expertise, and participation in a final group process that attempts to transform newly acquired information into a
more sophisticated understanding. The best web-quests do this in a way that inspires learners to see richer thematic relationships, facilitate a contribution to the real world of learning, and reflect on their own meta-cognitive processes.

A good web-quest prompts the learner to apply higher order thinking skills such as analysis, synthesis, and evaluation. By what mode, the activities in web-quests should engage learners in a real life problem which is divided among group members in with each assigned a manageable task and should direct them towards achieving the set learning objectives. Learners apply pre-existing knowledge to construct new knowledge individually or as part of a group. The task in a web-quest be set in the form of a question or a problem, ongoing contradiction or debate and encouraging research, especially experiential and exploratory online surf” (March, T. 2008:2). “The task should be set in a way that would ask the learners to apply previous knowledge and go beyond fact memorization. It also should be jointly constructed in such a way as to motivate learners by being authentic and relevant to their real life needs. The teacher role is one of a facilitator exercising his presence, as much as it is needed by the learners” (Johnson and Zufall, 2004:90). “There are two levels of web-quests: short term designed to be completed in one to three class periods and long term designed to take between a week and a month to complete. Each web quest generally contains the following six parts (Dodge, B., 1997:24): Introduction: “It builds on learner’s previous knowledge and experience. In this section the instructor provides background information and can explicitly mention specific new concepts or principles to prepare the learner for the lesson” (Tecelehaimanot and Lamb: 2004:5).

Task: “It is a scaled down doable variation of a real life situation. This focuses on what the learners will do and what they are expected to create as a final product once they finish all of the activities. The task requires synthesis of multiple sources of information, taking a position, going beyond the data given, making a generalization or product” (Johnson and Zufall, 2004:101).

Information sources: “It points to information from the WWW, this information needs to be specific and carefully selected by the instructor. Information sources can include web- documents, experts available via e-mail or real time conferences, searchable databases on the net, books and other documents available to the learners in hard” (Johnson and Zufall,2004:101).

Process: “It includes detailed activity description, step-by-step instructions, timelines, checklists, and resources such as assignments, questions, links to website resources, and descriptions of requirements. It is in this section that the instructor needs to provide most of the scaffolding for learners to accomplish the tasks successfully without any difficulties” (Tecelehaimanot and Lamb, 2004:6). Guidance or also called ‘learning advice’: “It is where the instructor provides additional advice presented through description of how information or notes should be organized and guiding questions or directions to follow by giving the learners templates, timelines, concept maps, and other information” (Tecelehaimanot and Lamb, 2004:7).

Conclusion: “It brings closure and summary of what has been and can also encourage learners to go beyond what they have learned” (Tecelehaimanot and Lamb, 2004:7).

Evaluation: It describes the evaluation criteria needed to meet performance standards. Usually, there are explicit directions that will tell the learner how he will demonstrate the knowledge gained. The instructor typically creates a rubric to evaluate the final product and learners will have access to this from the very beginning” (Johnson and Zufall, 2004:101).

Digital video

Video is lauded for EFL contextualizing (i.e., linking the language form to the meaning) and depicting the foreign culture more effectively than other instructional materials. Video-tapes permit learners to hear native speakers interacting in everyday conversational situations and to practice important linguistic structures. “Unlike audio-cassettes, video’s visual dimension is thought to reduce ambiguities present in native speaker voices and to motivate learners to learn the EFL by creating a blended learning environment which is not only based on books, but also on online videos, so there is a mixture between the written and the visual. Learners can read, listen, and watch videos during the acquisition of language which enhance their understanding of the material and the teacher in an easy way without spending too much time and effort” (Herron, et al., 1995:775).

Difficulties faced by EFL teachers in the process of applying CALL within their classrooms

The three EFL teachers; having positive attitudes and using computer frequently within their classrooms in El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia, and in El Imtiez secondary school of Tozeur; declared that in spite of the glamour of CALL, its application does not reflect all the intentions of curriculum and does not guarantee learners’ success in learning nor higher levels of achievement than traditional classroom techniques because it can be associated with difficulties which appear and lead to the failure of course such as teachers’ heavy burden, limited class management, weak computer competence, and unsuitable online courses which make learning difficult and lead to the failure of teaching and learning processes.

Teachers’ heavy burden

The EFL teacher plays multiple roles in the same CALL
course. He revises teaching materials, posts important information on the bulletin board, and reminds learners' assignments. More importantly, he designs curriculums and revises teaching materials to satisfy his learners' needs.

**Limited class management**

It is not easy for the EFL teacher to control the unethical behavior of his learners in CALL activities like making noise, chatting on web site, playing games, cheating in exams, or doing their private matters.

**Weak computer competence**

When applying CALL, some EFL teachers and learners are never comfortable with computers and often make mistakes. Many learners do not take online activities seriously, so they do not post any responses, if not prompted by him. He always finds that a lot of useless information his learners collect are copied and pasted.

**Unsuitable online courses**

The CALL material level available on the net may be too basic, complicated, difficult, and inappropriate for the competence levels of EFL learners and the course objectives which make the lesson becoming a chaos of uncertainty. So learners cannot cope with the unexpected happenings and ambiguity, conduct open-ended dialogues, or give feedback to open-ended questions because some links may work at a time, disappear, or not work later.

**Computer shutdowns**

On some occasions, the CALL programs demonstrated to EFL teachers and learners can be overtaken by power cut, mechanical failure, bad connection, slow browsing, and viruses which can lead to the failure of course. A few common pitfalls of Internet use include objectionable materials, netiquette behavior, and privacy issues because of predators, copyright violations, plagiarism, and hacking.

**DISCUSSION AND CONCLUSIONS**

**Research Question 1: EFL teachers’ attitudes towards CALL integration in their classrooms**

The results of questionnaire survey showed that EFL teachers who have positive attitudes towards CALL integration within their classrooms outnumber EFL teachers who have negative attitudes towards CALL integration within their classrooms in secondary schools of South region of Tunisia. In this manner, EFL teachers’ attitudes towards CALL integration in their classrooms tend to be positive from the Southern secondary schools to the Northern secondary schools of Tunisia.

The results of interviews showed that EFL teachers of the three secondary schools: El Omrane secondary school of Tunis, Taher Sfar secondary school of Mahdia and El Imtiez secondary school of Tozeur use computers for such general purposes as e-mail, Internet, office work, typing, keeping lesson plans, and storing materials. However, when it comes to EFL teachers’ attitudes towards CALL integration in their classrooms, their responses vary. Admitting that 12 teachers stated they perceive CALL as pedagogical tool and reported positive attitudes towards the integration of this tool in their classrooms, 10 EFL teachers remained undecided whether they would use CALL resources for teaching purposes because they perceive rather than something they can use for direct instruction.

The findings of questionnaire survey also indicated that five major factors were found to influence EFL teachers’ attitudes towards CALL integration in their classrooms which are:

- Secondary school location, sex, age, teaching experience, and income.
- Secondary school location: EFL teachers’ attitudes towards CALL integration within their classrooms tend to be positive from the Southern secondary schools to the Northern secondary schools of Tunisia. However, EFL teachers’ attitudes towards CALL integration within their classrooms tend to be negative from the Northern secondary schools to the Southern secondary of Tunisia (i.e., from the secondary schools of the North region to secondary schools of the South region of Tunisia) (see Figure 17 and 18).

- Sex: Female EFL teachers who have positive attitudes towards CALL integration in their classrooms outnumber male EFL teachers who have positive attitudes towards CALL because female teachers in general always need to feel comfortable especially married and pregnant women.

- Age: Young female and male EFL teachers who have positive attitudes towards CALL integration in their classrooms outnumber old female and male EFL teachers who have positive attitudes towards CALL integration in their classrooms. Whilst, old female and male EFL teachers who have negative attitudes towards CALL integration in their classrooms outnumber young female and male EFL teachers who have negative attitudes towards CALL integration in their classrooms. In this manner, the younger an EFL teacher, the more he has positive attitude towards CALL integration in his
Factors of CALL use and CALL non-use in EFL classrooms

The findings of interviews also indicated that EFL teachers who do use CALL within their classrooms outnumber EFL teachers who do not use CALL within their classrooms in the secondary schools of North region of Tunisia. Whilst, EFL teachers who do not use CALL within their classrooms outnumber EFL teachers who do use CALL within their classrooms in the secondary classroom because old teachers in general are so attached to traditional methods of teaching and have a fear that technology will replace them.

Teaching experience: The longer his teaching experience, the less an EFL teacher has positive attitudes towards CALL integration in his classroom because teachers with a considerable teaching experience are used to teaching with books while the new teachers always search for easier ways of teaching and love to be modern and try new technological methods of teaching. Income: The higher his income, the more an EFL teacher has positive attitude towards CALL integration in his classroom because teachers with big income are always the older teachers with more teaching experience.
CALL use progress from the Southern secondary schools to the Northern secondary schools of Tunisia (see Figure 19).

In this manner, EFL teachers’ integration of CALL within their classrooms is different between secondary schools and tend to be better in the secondary schools of North region than the secondary schools of Sahel region and South region of Tunisia (i.e., CALL is used more in secondary schools of urban zones and of sub-urban zones than in secondary schools of rural zones). EFL teachers declared that a wide range of internal factors closely related to individual contexts and external factors closely related to work environments have been found to affect CALL use and CALL non-use in EFL classrooms.

In the one part, CALL implementation in EFL lessons is affected by internal factors such as positive attitudes towards CALL, as well as availability of theoretical and practical knowledge about computers. The external factors are: high rate of technological change; availability of pedagogical support; social pressure; convenience of teaching materials; availability of administrative, financial, and technical support; availability of computer training; prior teaching experience with CALL; and availability of time. In the other part, CALL non-use in EFL classrooms is affected by internal factors such as negative attitudes towards CALL, as well as limited theoretical and practical knowledge about computers. The external factors are: low rate of technological change; absence of pedagogical support; non convenience of teaching materials; lack of adequate administrative, financial, and technical support; lack of computer training; and limited time.

However, a positive attitude towards CALL does not always ensure the integration of this tool within his classroom. The EFL teachers who have positive attitudes towards CALL and do use it within their classrooms, in El Omrane secondary school of Tunis and in Taher Sfar secondary school of Mahdia, reported in interviews that the traditional EFL class differs from the CALL-based EFL class in four aspects which are: classroom interest, classroom effectiveness, tutor, and classroom difficulty. Nevertheless, learners’ responses in the CALL-based EFL class are not significantly different from learners’ responses in the traditional EFL class in terms of classroom effectiveness.

Effects of CALL use in EFL classrooms on teachers and learners

The results of empirical observation evinced that CALL is a double-sided tool because when it is used in EFL classrooms; it can have, at the same time, advantages and disadvantages for teachers and learners. On the one hand, the advantages are: quality improvement, adaptability, rapid information access, independency, experiential learning, novelty and creativity, direct feedback, motivation, interaction, vocabulary and grammar development, writing and reading enhancement, autonomy, discipline, and entertainment. On the other hand, the disadvantages are: time waste, teacher dependency, inadequate communication, anti-social behavior, Native language and culture endangerment, health threat and costs inflation.

Difficulties faced by EFL teachers in the process of applying CALL within their classrooms

The findings of interviews also corroborated that EFL
teachers have many preferences in their classroom CALL practices such as electronic portfolio (e-portfolio), webquest, and digital video. However, they can encounter many difficulties such as teachers’ heavy burden, limited class management, weak computer competence, unsuitable online courses, and computer shutdowns.

Ways to improve the level of CALL practices in EFL classrooms

Considering that CALL is continually developing and making more diverse EFL learning environments possible, this study focuses on how it can be integrated more effectively in EFL classrooms rather than whether to accept it. The effective integration of this tool depends on how it is used, what is being taught and for how long. After establishing a series of variables as ‘setting’ with the presence or the absence of teacher, role of CALL, and age of learners; the EFL teachers in El Omrane secondary school of Tunis and in Taher Sfar secondary school of Mahdia must change their roles, reduce their workload, do self-evaluation, and follow guidelines.

Variables’ definition

A range of variables should be defined which are: the setting, CALL as a tutor/tool, the age of learners, EFL teacher tasks, and the EFL teacher roles change.

Setting: EFL teacher’s presence/absence

The inaugural thing that needs to be defined is the ‘setting’: is there an available EFL teacher present with a supportive role or will the learning be carried out without any type of human support?

CALL as a tutor, CALL as a tool

It will be also necessary to decide whether CALL will be used as a ‘tutor’, with a directive role (e.g., EFL courses on CD-ROM) or whether it will be used as a ‘tool’ with a non-directive role (e.g., word-processor, e-mail, dictionaries, language corpora, etc.). The EFL teacher’s presence will be more necessary when CALL is used as a ‘tool’, since his learners will not be directed by it and at the same time he can lack the necessary skills to use such a ‘tool’ together with textbooks. The EFL teacher will refer mainly to the use of CALL as a ‘tutor’ since most its programs are designed in this way, but even so and as mentioned above the necessity or at least the convenience of the teacher’s presence cannot be discarded.

Age of learners

It will be necessary to keep in mind that the users of computer software will be young. The age of EFL learners is very important in this sense. It is easier for an adult to take the responsibility for his own learning than for a child to do so.

EFL teacher’s tasks

The EFL teacher has the following tasks:

To identify the reasons why his learners study the EFL and want to improve their skills and knowledge within.

To help his learners to establish their goals in a realistic way, to reach them, and to assess themselves always keeping in mind the variety of learning styles.

To increase his learners’ motivation by speaking to them about the benefits of EFL.

To make his class a positive place where psychological needs are satisfied and anxiety is reduced to the minimum.

To insist on his learners’ self-evaluation and encourage the achievement of certain specific goals instead of the comparison with other learners, since in this way their auto-efficiency feeling will increase thanks to themselves and not to their peers or teacher.

EFL teacher roles change

The approach of EFL teaching and learning should be communicative (i.e., there is a corporation between the teacher and CALL tool, as well as the opportunity to learn new technical skills). The CALL-based EFL class should be considered as learner-oriented learning environment where learners’ self-directed and independent learning increases. In the new EFL environments, learners can be at the centre of learning; they are responsible for their work, manage their learning by gathering information, and control the pace of learning.

The EFL teacher should be aware of his new roles as activity guide or facilitator, not all powerful judges for the learning process. He has to be aware of the role transition in his classroom and try to cope with new demands of computer-based society. So as to respond to the expected roles in a computer-based society, conversely, it is recommended that the EFL teacher should be aware of the fact that the use of CALL in his classroom requires different teaching styles, approaches, and methods. If teachers consider these educational shifts as incentives to improve the quality of his teaching, he will be able to accept a series of the new changes related to CALL implementation. Challenging shifts from the teacher as provider and the learner as perceiver to the learner as provider.

As in contexts of autonomous learning, the EFL teacher now increasingly has to function as facilitator and guide to his learners. He plays multiple role at the same time. He does not only provide informations for his learners, but also aid them and enhance the learning process. Other new and important teacher roles are ones of...
mediator, researcher, and designer of complex learning scenarios, collaborator, and evaluator.

**EFL teacher as a facilitator and a guide**

As facilitator, the EFL teacher must in many ways know more than he would as directive provider of information. He also should be aware of a variety of materials available for improving his learners’ EFL skills. In EFL contexts such as these where CALL processes are adopted, this focus on choice and independent use of materials by learners under the teacher’s guidance has been identified in terms of a pedagogy of resources in parallel with other pedagogies like the pedagogy of time, the pedagogy of choice, and the pedagogy of cooperation. The EFL teacher also has to be flexible, responding to the needs that his learners have, and not merely dependent on what has been set up ahead of time by curriculum developers and their idea of who will be in the classroom.

The EFL teacher education is a key element to success in this more flexible classroom where he will have the ability to use and to recommend multimedia and other resources effectively. The teacher must not only know about and understand the functions of different media available in a CALL-rich environment he must also know when best to deploy them. In the joint construction of projects with his learners (i.e., pedagogy of cooperation between learners, as well as between teachers and learners) the EFL teacher needs to guide them in the use of word-processing, graphics, and presentation programs.

The integration of audio-visual elements will bring home to EFL learners the fact that their learning environment is as vibrant and multi-faceted as the society in which they live. The presentation of material in a creative manner also aids the development of cognitive processes.

In order to help EFL learners to extend and develop their mental and social abilities, i.e. to learn how to learn; the teacher himself is a key figure in guiding them and at the same time practicing skills alongside them like hypothetical thinking, analyzing points of view, and applying different symbol systems including the graphical, the musical, and even the mathematical as is now possible through the integration of multimedia environments in the learning process. The teacher does not only give his learners an amount of ambiguous information, but also he explain the lesson to them and guide them through suggestions.

**EFL teacher as a mediator**

The role of mediator is not new for the EFL teacher, it has always been his task to act as intermediary between two cultures while he introduces his learners to new linguistic and cultural concepts. Even though, the immediacy offered by the new media forefronts this role and gives it a new importance. Within the relatively safe confines of traditional textbooks the teacher can introduce relevant aspects of the EFL culture in small and manageable chunks. Access to the real world of the EFL culture and, at times, confrontation with it, requires new strategies that need to be learned and practiced. Indeed, a more rewarding and promising point of departure is perhaps one which takes into account the multilingual environment that many learners live in and bring with them into the classroom.

**EFL teacher as a researcher**

To keep abreast of developments in relevant fields of knowledge and walks of life, particularly in the EFL countries, the teacher needs to know how and where he can access information for his own and for his learners use. Reflective practice and action research are now becoming part and parcel of the daily lives of EFL teachers. The teacher needs to keep up to date with knowledge generated in the field of modern languages and applied linguistics not only for the sake of his learners, but also for his own professional development. Familiarity with the use of CALL tools for EFL analysis like concordancers will, for example, enable the teacher to further develop his own linguistic and professional competence, as well as increase his confidence in the EFL use.

Research often takes the shape of ‘reflection on action’. Action research involves a self-reflective, systematic and critical approach to enquiry by teacher in order to identify areas of difficulty, to embark on a period of study possibly in collaboration with others, and to bring about informed changes in practice as a result. The EFL teacher as researcher should be able to adjust continually to varying demands made upon his professional competence and knowledge. These demands vary from the level of learners’ competence he is asked to deal with to the increasing responsibility placed on him to participate in the administration and evaluation of the educational institution. For those concerned with mainstream education, the propriety and reliability of information sources must figure as one of the main criteria for the selection of background material.

**EFL teacher as a designer of (complex) learning scenarios**

For the sake of successful learning scenarios, the EFL teacher needs to learn how to put together tasks and materials to guide his learners to successful execution and conclusion of their projects. Unlike work with conventional teaching materials (textbook, workbook, audio, and video-materials) which have been graded, pre-assembled, and collated in a chronological order; the design of learning scenarios nowadays is much more
complex requiring higher order skills, involving researching, evaluating source materials, setting overall aims and objectives, as well as breaking down tasks into meaningful and manageable sequences.

The complexity of EFL learning environments also demands that the teacher is able to switch between a variety of roles: from one who encourages learners to establish their own learning objectives to one who sets meaningful learning tasks to a guide throughout the various stages of the learning process, to a presenter and evaluator of information both during and at the end of a task. The flexibility demanded of EFL teacher is related not only to the changing nature of current methodologies, or to the changing type of learners he faces from year to year, or from group to group, but also to the range of roles he has to perform within the same CALL-based course and with the same group of learners.

**EFL teacher as a collaborator (with other teachers)**

The investment of time and effort required in this new EFL teaching and learning environment which is based on CALL implies a sharing of responsibilities and tasks among the teaching staff. Collaboration with colleagues will lighten the burden and make the efforts more fruitful and rewarding. New management patterns must emerge to ensure fair distribution of workloads and revised job descriptions will be necessary to share and coordinate the tasks in hand. When the teacher collaborates with another teacher he learn many things from him and enrich his method of teaching or adapt new one.

**EFL teacher as an orchestrator (computer, learner, curriculum)**

The EFL teacher will need to develop fairly sophisticated management skills in order to be able to provide a healthy balance between the different elements which make up the new learning environments. Mastery and confidence in the use of computer needs to be applied to the CALL inclinations and abilities of individual learners whilst covering the prescribed syllabus or curriculum which are often set by outside authorities for teaching institutions.

When the EFL teacher is conversant with the learning styles of learners, he is able to synchronize learner styles, learning method, and tools. Then, the symphony orchestrated and conducted by the teacher with the learners as performers will surely be timed correctly and well in tune. This is a highly sophisticated task as the teacher needs to be able to identify with some precision the learning styles of learners, as well as to choose from, and apply with efficacy the relevant learning techniques, tasks, and materials; thus, to initiate and successfully sustain the learning process often within set frameworks which are less than ideal or conducive to collaborative learning.

**EFL teacher as an evaluator and a self-evaluator**

The first evaluation task for an EFL teacher is undoubtedly that of selecting materials, methods, and other means for the learners to work with.

Farther, evaluation of both the learning process and the product (i.e., learners’ level of competence acquired, calls for a radical revision of current models of evaluation like examinations). If CALL-based project oriented work in the EFL classroom using learning is to become the norm or at least form an important part of activities, then models of evaluation need to be revised radically. Standard multiple-choice examinations are, for example, hardly likely to test the learners’ newly acquired skills in EFL web literacy. A portfolio-based approach to assessing competence and skills acquired would seem to be a more appropriate way of recording an EFL progress. As the skills to be acquired by learners are largely identical to those to be mastered by the teacher in training, this form of evaluation should be practiced in initial training courses providing the teacher with first-hand experience of the system and with direct relevance to his own situation.

Current models of the EFL teacher education practices are beginning to reflect a trend towards empowerment through introspection with self-evaluation and assessment. Teacher self- evaluation also includes self-assessment of training and development programs he undergoes, as well as self-reflection on the impact of personal professional growth on the learners’ progress and on the development of teaching team. All this augurs well for the chance for teacher to succeed in his task of raising learners’ awareness of learning processes.

**EFL teacher workload reduction**

To reduce the EFL teacher burden and to enhance the benefits of CALL, the teacher should train his learners as group leaders to aid them in their courses. Therewith, he should have contact with the computer programmer such as e-learning campus, bulletin, discussion board, and online test.

**EFL teacher self-evaluation**

When the EFL teacher adopted CALL in his classroom, he should have reflective thinking and see whether the strategy was helpful to learners or whether the new method in instruction was much better to learners. He has to do self-evaluation continuously based on the result and then, they can make some improvement. He also needs to be facilitator, organizer, and evaluator; he can control the pace of teaching activities.

In the age of integrating CALL into teaching, the teacher’s task is both difficult and challenging; so he must take participate in related seminars, conferences activities, and practical lessons to seek for professional
members to solve difficult problems. Regular evaluations, strategies revised at any time are necessary for the teacher to find the most appropriate and efficient methods in order to help learners reach the best learning outcomes.

Instructional guidelines for CALL use

This section provides pedagogical rationale of three different approaches to using an online environment to explore Internet-based resources and discusses pedagogical issues such as the degree of teacher-centeredness, learner control of contents and learning processes, level of proficiency, the scope of Internet resources, and text types that need to guide the design of Internet-based reading lessons and task design. In the next section, a set of guidelines summarize those pedagogical and instructional design issues that need to be considered during the planning.

Teacher-centered approaches

This section provides a set of guidelines pointing out pedagogical and instructional design issues that need be taking into account to avoid some of the pitfalls and to make the learning activity a successful experience for the learner.

Does the design of your reading lesson justify the use of its medium, that is, do the learning tasks take full advantage of the potential of the medium?

 Needless to say, asking students to fulfill learning tasks online should entail pedagogical advantages to the learner and the instructor. Otherwise, it may be difficult to justify the development time and potential challenges that are involved in using this medium. The decision of having student do Internet-based activities should be based on a clear rationale that justifies its use. For example, are students to explore at least two or three different sites and/or multimedia resources. Do learners have a choice in selecting the content? If a print out of an Internet-based resource can be made and used in the classroom, sending learners online may not be the best instructional practice.

Are the reading materials and learning tasks appropriate for the learners’ level of proficiency?

As Walz (2001:1202) reminds us, to make the critical reading of authentic texts from the Internet feasible for learners at the lower levels of proficiency, independent readings as well as those with pedagogical support must have tasks aimed at the reader’s level. As a general guideline, text type, reading tasks and the learner’s level of proficiency are criteria that need to be taking into account in the approach to and choice of contents of Internet-based reading resources.

Do the activities engage the learners in real-world and meaningful tasks as well as in a variety of skills (e.g., communicative, reading, cultural explorations, writing)?

As pointed out above in Osuna and Meskill’s (1998:24) study, learners feel more engaged when the purpose of their tasks simulate real-world tasks. The exploration for any available multimedia resources should also have a purpose and be associated with a meaningful task. For example, instead of having a learner provide general descriptions of images or a photo, asking them to identify specific cultural aspects and compare them to their own cultural background make a task more purposeful and focused, and thus enhances their awareness of cultural differences.

How do learners demonstrate what they have learned?

There are many instructional practices to assess what learners have learned. Traditional examples include true-false types, matching, and comprehension questions, filling in charts, summaries, comparisons, reactions to the texts, comments, and so forth. By and large, they depend on the approach, the type of materials and texts, and the students’ level of proficiency.

Furthermore, as the use of the open-ended structure of the Internet lends itself in particular well to make use of authentic exploratory tasks, the learners’ assessment can be based on the degree and quality of the fulfillment of these tasks. Examples may include a presentation of an end product, such as a report, a description of an itinerary, a food menu, and a prepared meal. The presentations can also be easily integrated into the classroom. In this way, learners can exchange and compare information with each other, while getting engaged in the application of oral communicative skills.

Are all the instructions clearly stated?

Not only is it easy to get lost, but also stuck in a hypertext environment. This often has to do with lack of instructions or dysfunctional hyperlinks that one encounters when surfing the Internet. Therefore, precise instructions are necessary on how to navigate or what navigational path to take when exploring Internet sites. Ask yourself, when students navigate between sites, do they know what to do and how to return to your home page? Are precise instructions or examples provided, online or on a worksheet, telling learners what to do?

Are all the hyperlinks functional?

URL addresses change and sites often disappear. One
strategy to guarantee functionality is to thoroughly test your own lesson making sure all URL addresses are correctly stated and the sites and links work when you access them. Another strategy is to provide alternative sites, in case some sites are no longer available.

Learner-centered approaches

This section also provides a set of guidelines pointing out pedagogical and instructional design issues that need be taking into account to avoid some of the pitfalls and to make the learning activity a successful experience for the learner.

Are your pupils prepared to do project-oriented work?

Provide clear guidelines to your students on the process and nature of project-oriented work. You may allow your pupils to select their own topic, materials, end product, and form of assessment. This does not mean that the instructor becomes redundant. On the contrary, the teacher plays an important role, that of a guide and coach. At the same time, the students may be required to follow a certain timeline and other stipulations built into the projects. That means, students need to know when it is important to consult with their teacher.

Are your pupils familiar with the process on how to conduct research?

The preparation phase for project learning may also include information on the process of conducting research. As suggested by Gaspar (1998:276), a useful model to teach might be McKenzie’s ‘Iterative Research Cycle’ consisting of questioning, planning, gathering, sifting, synthesizing, and evaluating. Despite the open-ended nature and student-centered approach, it most likely is necessary to provide examples and models of learner projects to demonstrate on how to go about planning and conducting projects that result in entirely different end products.

Do the pupils know how to search the Internet?

Internet-based project learning involves gathering and identifying information. This requires knowledge about how to use search engines. Most pupils are familiar with the basics of using Web browser (e.g., Internet Explorer or Netscape) search engines. In the last few years, however, search engines have become more sophisticated allowing searches to be specified, for example, based on foreign languages or multimedia contents. Learners may require additional training in the use of such features as well as information-seeking skills in general.

Guidelines for CALL use

To help the EFL teacher through the process of getting used to CALL, this is a set of the necessary guidelines:

To remember that computer, as well as other equipments are just tools and make them work for the teacher not against him.
To not feel satisfied with the materials that commercial software can provide and to create own materials.
To motivate learners by using computer games for which the class-work materials are prepared.
To create materials for work with the computer which are also related to the teacher-led sessions.
To make schedules flexible enough as to accommodate individual or small group sessions with the computer.
To think of the combination of teacher-led classes and computer sessions that best suit the teacher needs.
To direct learners to the objectives the teacher wants them to achieve, but these may not necessarily be the same objectives of the software program.
To use Internet accessibility and create writing, as well as speaking tasks for learners. The WWW contains millions of pages the teacher can use to produce reading tasks and to encourage learners to learn about a wide variety of cultures and topics.
To design reading tasks using any CD-ROM encyclopedia or program that contains hypertext.
To encourage learners to use their intellectual potential by assigning them computer tasks such as looking for information in databases that will make them think and use the EFL.
To encourage learners to use word processors and other applications such as spelling and grammar checkers.
In order to give a sense of purpose to what learners are going to write, the teacher has to make them write and send real e-mails and faxes. This will provide them with a real sense of communication.
To make use of web pages or CD-interactive programs to generate discussions.
To use computers that suit better learners’ culture and identity.

LIMITATIONS

Limitations of the research

The first limitation is that this study is not generalized because it was conducted to reveal only the attitudes of EFL teachers working at public secondary schools of Tunisia. It would be more appropriate to generalize this situation to all EFL teachers working in preparatory schools, private and pilot secondary schools, as well as public and private colleges who may face very different conditions to the participants of this study.

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

Furthermore, no case study was carried out by the researcher to understand how EFL teachers plan for the integration of CALL in their classrooms and what means they use in preparing themselves before their pupils start learning. Moreover, a review of methodology literature relating to educational field was carried out to ensure that correct procedures were used and that the research process would be effective. The process of operationalization is critical for effective research. Data triangulation was the methodological strategy used in drawing attention to the divergences observed in the analysis of data corpus. To be precise, the researcher compared three types of data: data obtained from the questionnaire survey, data obtained from the interviews, and data obtained from the empirical observation.

The following are the limitations of the chosen research methodology:

The questionnaire sheets were not completed by the whole EFL teachers of three secondary schools. There was only 84.61% response rate, which means that the results may not accurately represent the views of the whole teachers. The questionnaire survey and interviews did not allow much room for EFL teachers input because of their primarily closed nature.

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