Investigating the role of ICT in teaching English at the tertiary level

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Abstract

Current studies in language pedagogy have shown a central interest in the implementation of innovative methodologies while teaching English as a foreign language. Thus, the issue of resorting to the use of information and communications technologies (ICT) has gained ground and has generated much debate over the actual requirements of increased ICT skills. The present study seeks to unveil the teachers’ conceptions regarding the implementation of ICT at the tertiary level. For this reason, an interview was held at the Higher Institute of Languages in Gabes with 25 high school language teachers of English who were included in this study through random sampling. The findings revealed that most of the informants held positive attitudes towards the implementation of ICT. They mainly alluded to the perceived positive effects not only on their own EFL teaching practices but also on their students’ learning processes and strategies. Despite the merits that are achieved through ICT, this study seeks also to pinpoint to a number of challenges that still have to be dealt with.

Keywords: Information Communications Technology (ICT), EFL teaching, EFL learning.
Introduction

The advanced developments in technology particularly in Information Communication Technology (ICT) have gained contentious profound effects notably on the educational field. Researchers have constantly strived to “make schools more efficient and productive than they currently are” (Cuban, 2001, p. 13). For this reason, they have searched for novel teaching methodologies that facilitate for them the process of teaching and guarantee for their learners a smooth internalization and acquisition of the target language. The new directions of teaching methodologies revolve around the use of ICT which has a profound effect on “transform(ing) teaching and learning into an engaging and active process connected to real life” (Cuban, 2001, p. 14). Thus, adopting and incorporating ICT in EFL teaching and learning have become increasingly emphasized within CLT paradigms (Earle, 2002; Kozma, 2003; Steketee, 2005; Williams, 2003).

1. Literature Review

The literature review highlights mainly three major parts. In the first part, an account of the diverse attitudes that can be experienced towards the implementation of ICT in education is specified. In the second part, the main impact of ICT on the instructors’ teaching practices is highlighted in terms of the diversification of the technological equipments utilized for the teaching of English and the achievements gained through its application in the classroom setting. In the final part, the impact of ICT on students’ learning is clearly depicted namely in transgressing the rigid boundaries dictated by the physical classroom settings, encouraging the learners’ motivational attitudes towards learning, promoting the learners’ production of the target language, sustaining the learners’ collaboration and developing the learners’ autonomy.

1.1 The different attitudes towards the integration of ICT in education

The concept of attitude can be defined following Thomas (1971)’s terms as “a complex of feelings, desires, fears, convictions, prejudices or other tendencies that have given a set of readiness to act because of varied experience”. The study of the EFL teachers’ beliefs and attitudes is vital for the understanding of the extent to which teachers manage to apply and make use of ICT within their instructional teaching practices (Bordbar, 2010; Teo, 2012; Wozney et al., 2006).

In this respect, Mueller et al. (2008) argue that:

It is the individual differences in beliefs, attitudes, and skills among teachers that are the key area of interest for researchers today. Educators are the focus of interest because it is educators that have the primary contact with students and it is educators that experience the barriers and supports the integration of technology first-hand. Given the critical role of educators, it is important to understand the contributions that teachers make in supporting or inhibiting the integration of computer technology in the classroom. (p. 1524)
Numerous researches argue that teachers tend to show very positive attitudes toward the incorporation of ICT in education (Albirini, 2004; Summers, 1990; Hermans et al., 2008; Voogt, 2010; Schrum and Levin, 2013; Tondeur, van Braak and Valcke, 2007). The examination of teachers’ attitudes towards the use of particular ICT devices is essential in determining the methodological decisions opted for the teaching of the syllabus content (Ertmer, 2005; Loveless, 2003; Haydn & Barton, 2007). To this end, teachers have to adapt their use of ICT to meet the requirements of the course objectives and to satisfy each individual learner needs in the classroom (Williams, Boone and Kinsley, 2004).

In addition, the attitudes towards the incorporation of ICT seem to be largely affected by a number of variables namely the age factor, the frequent usage and the degree of motivation. For instance, Hammond et al. (2008) stress the role of age factor in influencing the teachers’ attitudes to embrace ICT in their teaching practices. They maintain that young teachers are more inclined to use ICT than older teachers. Other researchers point out that it is the teachers’ frequent usage of ICT that has an impact on the teaching attitudes (Cox, Preston, Cox, 1999; Moseley and Higgins, 1999; Kozma, 2003). While Askar and Olkun (2005) argue that the intersection of the age factor and the recurrent application of ICT has effects on the EFL instructors’ attitudes. Also, Karsenti, Villeneuve and Goyer (2006) indicate that the level of motivation determines the teachers’ resort to ICT, i.e., strongly motivated teachers tend to make use of ICT more than the less motivated ones.

Besides, the examination of the teachers’ attitudes can reveal the potential impact of ICT on their students’ personal learning experiences. In this respect, Christensen and Knezek (1998) argue that “teachers’ attitudes towards computers affect not only their own computer experiences, but also the experiences of the students they teach”.

1.2 Effects of ICT on the teaching process

In this part, the effects of ICT on the EFL instructors’ classroom practices will be revealed in relation to the various technological instruments that might be utilized for teaching and the numerous advantages that can be achieved. Each will be clarified as follows.

1.2.1 Diversification of the technological devices in teaching English

The supportive use of ICT is reflected in the teachers’ instructional teaching methods. The latter might comprise the following list:

- The use of online learning platforms such as ‘Quipper’, ‘Moodle’, ‘Claroline’, ‘ATutor’, ‘Omeka’ and ‘Docebo’ (Mulyono, 2016, p. 61) which help in carrying out online discussion forums (Morris, 2010), creating web pages, storing data and designing blogs (Alshumaimeri, 2011).
- The use of wikis as an indicator of collaborative writing (Judd, Kennedy and Cropper, 2010).
- The use of computers as pedagogical means that "may improve the instructional processes and learning outcomes" (Pelgrum and Plomp, 1991, p. 3).
• The use of graphics which appeals to the learners’ visual senses sustains the visualization and comprehension of intricate data (Rıza, 1997), i.e., it facilitates the comprehension and memorization of information.

• The use of PowerPoint as “a type of presentation software that allows one to show coloured text and images with simple animation and sound” (Radanov, 2008).

Thus, the diversity of ICT devices is sub-divided by Kennewell (2004) into four distinct categories which are as follows:

• Hardware: refers to the physical entities that can be found in a computer or any other telecommunication equipments such as the use of webcam, touchpad, keyboard or any other electronic data processors.

• Software: refers to the virtual storage and manipulation of data within the previously mentioned hardware systems such as the operating system, Spreadsheet calculations software and text processing software.

• Media: refers to the tools that can be used to handle data such as DVD or CD-ROM.

• Services: refer to the integration of hardware, software and other network resources which “can support the creation and development of ideas if they reflect an approach to open-ended exploration in design and use” (Loveless, 2002, p. 24). For example, the services that might be needed include having access to the internet.

All the previously mentioned ICT tools have to be well-exploited by teachers in order to bring about developments in the learners’ language skills.

1.2.2 Merits of ICT use on teaching practices:

Since the advent of ICT within the educational field, researchers have been investigating its real impact on the process of teaching and learning. They deduced that the fusion and inclusion of ICT tools within the teachers’ actual teaching classroom practices result in a number of benefits. Therefore, ICT enables teachers to:

• Gather, arrange, store, disseminate, manipulate and transfer all kinds of data into digital graphics, numbers, posters or any other formats needed for the clarification of the course content (Brush, Glazewski and Hew, 2008; Hopson, 1998). In the same vein, Anyakoha (1991) maintains information and communication technology is employed “for the collection, generation, communication, recording, re–management and exploitation of information. It includes those applications and commodities, by which information is transferred, recorded, edited, stored, manipulated or disseminated”.

• Increase their and their students’ competencies (McPake, Stephen, Plowman, Sime and Downey, 2005). The concept of competency is referred to, in Sampson and Fytros (2008)’s terms, as “personal characteristics (e.g. skills, knowledge, attitudes) that an individual possesses or needs to acquire, in order to perform an activity within a specific context, whereas performance may range from the basic level of proficiency to the highest levels of excellence”.

• Encourage student - centered approach (Castro Sánchez and Alemán, 2011).

• Urge learners to put into practice their “useable knowledge” (Lim, 2002, p. 411).

• Develop their own and their learners’ technical skills namely in using computers (Chai et al., 2009).
• Enhance the quality of instruction by making learning resemble authentic creative real–life situations (Lowther et al. 2008; Ndukwe, 2002).
• Nurture a sense of collaborative spirit within the classroom (Koc, 2005; Gall and Breeze, 2008; Sutherland et al., 2004).
• Carry out evaluative educational reforms if needed (Jo Shan, 2013).
• Foster cross–cultural communicative competence (Chakhlikova, 2009).
• Create opportunities for authentic assessment (Dudeney and Hockly, 2007).

1.3 Effects of ICT on students’ learning

The examination of the effects of ICT on students’ learning has been viewed as beneficial. ICT succeeds in enriching their knowledge, increasing their motivation, encouraging their productive use of the target language, boosting their collaboration and nurturing their sense of autonomy. Each will be clarified as follows.

1.3.1 Transgress the rigid boundaries dictated by the physical classroom settings:

Learners can broaden their knowledge by having access to a wide range of learning materials such as various digital online resources namely visiting virtual libraries and attending online virtual classrooms (Kramarki et al., 2000; Lim and Chai, 2004; Karimi, 2007; Cross and Adam, 2007; Markovic, 2010; Sarkar, 2012). In this respect, Cabero (2001) stresses that:

The flexibilization time–space accounted for by the integration of ICT into teaching and learning processes contributes to increase the interaction and reception of information. Such possibilities suggest changes in the communication models and the teaching and learning methods used by teachers, giving way to new scenarios which favour both individual and collaborative learning.

As a result, learning becomes to be viewed as a dynamic process that is no longer confined to particular space or time (Hattangdi and Ghosh, 2008).

1.3.2 Encourage the learners’ motivational attitudes towards learning:

The incorporation of ICT increases the learners’ motivation, enhances their engagement and promotes their self–confidence in using the target language (Pustinová, 2012; Torff and Tirotta, 2010; Cobb, 2002; Jonassen and Reeves, 1996; Punie, 2007; Wood, 2004). Consequently, learners enjoy working in an attractive, interesting and lively classroom atmosphere by listening to music, watching videos or associating abstract and intricate word items to colorful vivid images.

1.3.3 Promote the learners’ production of the target language:

The use of ICT creates many opportunities for the learners to be enrolled into a productive and creative use the target language for communicative purposes (Chapelle, 2003; Mandal and Mete, 2012). For example, social networks provide support for learners to interact with
one another for sharing their ideas, thoughts and beliefs such as the use of blogs, discussion forums or chat rooms…

1.3.4 Sustain the learners’ collaboration:

Through the use of Information and communication technology, learners are able to build intrapersonal social relationships by being engaged into a collaborative team work and a proactive communicative classroom environment (Soh, 2011; Susman, 1998; Behnam, 2012; Faraj and Zarif, 2009). As such, Siemens (2002) argues that in an e–learning session the learners’ interactive process moves along four major stages namely ‘communication’, ‘collaboration’, ‘cooperation’ and building a sense of ‘community’ by the end.

1.3.5 Develops the learners’ autonomy:

In total contrast with the traditional learning approaches such as audiolingualism and grammar translation method, foreign language learners are invited within CLT to make use of innovative technological devices which have proved efficient in fostering their autonomy through the development of their self–direction and self–regulation strategies (Serhan, 2009; Faraj and Zarif, 2009; Waddell, 2000).

Therefore, the positive effects of ICT guarantee a classroom environment that is conductive to learning (Karsenti et al., 2012). Consequently, they might contribute to enhance the learners’ academic achievements (Mercier and Higgins, 2013).

As it has been demonstrated, the increasing incorporation of ICT might lead to satisfactory and positive results on both teaching and learning foreign languages (Gilmore, 2008). According to Kenning (2007), it enables learners to control and master their own learning and helps teachers to promote their individualized ways of language instruction (p. 105). A broader view of the benefits of ICT on teaching and learning is stressed by Rahmani et al. (2006) who admit its pleasing effects on enhancing the process of classroom assessment, developing thinking skills, promoting student–centered learning, increasing the motivational attitudes and facilitating learning as it is demonstrated in the figure below.
2. The Experimental part

2.1 Research questions

The present study seeks to investigate the following two main questions:

• What are the high school teachers’ conceptions regarding the implementation of ICT?
• What is the impact of ICT on both the teaching and learning practices?

2.2 Participants

Based on random sampling, 25 teachers enrolled at the Higher Institute of Languages in Gabes, Tunisia, particularly from the department of English took part in the present research.

2.3 Data collection instrument

A semi-structured interview was used as a means of gathering data. The choice of this research instrument in particular was motivated by the following reasons. Firstly, interviews can be regarded as effective tools employed in the elicitation of people’s beliefs, opinions and perceptions. Secondly, they can be utilized in order to deepen our understanding of what people might conceive of ICT use in the teaching of English as a foreign language as it enables the interviewer to get into detailed and well-justified replies from the informants. Finally, they can be used as a survey method for the valuable insights that can be raised upon
the negotiation of some of the main ideas. The duration of each interview lasts approximately 35 minutes.

2.4 Method

The present research is founded upon a single study group that is composed of a number of high school teachers. These informants sat for an interview in an attempt to know more about their conceptions concerning the integration of ICT within foreign language pedagogy and to investigate the latter’s impact on both their teaching practices and their students’ learning processes.

3. Research findings and discussion

It should be mentioned that initially the total number of informants was 30 English language teachers. As 5 respondents admitted their non-use of ICT while teaching, they were directly dismissed from the corpus analysis. The reluctance of some teachers to employ ICT tools when teaching is also echoed in the literature through the works of Granath & Estling Vannestål (2008, p. 125). The remaining 25 informants provided the data necessary for the investigation of the use ICT within the university setting.

The research findings pertaining to the second question reveal that based on likert scale, the informants’ replies can be classified into three main categories as it is revealed in the table below.

<table>
<thead>
<tr>
<th>Informants’ replies</th>
<th>Informants’ percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very positive</td>
<td>6</td>
</tr>
<tr>
<td>Positive</td>
<td>16</td>
</tr>
<tr>
<td>Negative</td>
<td>3</td>
</tr>
</tbody>
</table>

Table: The informants’ varied reactions towards the use of ICT.

The first category of informants, with a percentage that reaches 24%, find the experience of implementing ICT when teaching English as a foreign language as very positive. The second category of informants, which in fact constitutes the majority, has had a positive experience with the use of ICT, while the last category which constitutes 12% of the whole percentage of informants has reported a negative experience. In total, the majority of informants who hold positive beliefs with more or less varying degrees constitute 88%. Thus, there is generally speaking a highly satisfactory, enjoyable, enthusiastic and supportive attitude towards the application of ICT within the higher educational setting. Actually, the increased resort to the use of ICT highlights the existence of some basic knowledge and curiosity that urges teachers to cope with and be flexible in dealing with the innovative technological advances.

Concerning the roles assumed by teachers once they are implicated into the actual use of ICT within the classroom, none of the informants regard themselves as technology experts.
Instead, they view themselves either as facilitators (24%), guides (20%), coaches (12%), advisors (12%) or co-learners (32%). Each of the presumed roles will be clarified as follows.

**Teachers as facilitators**

The informants consider themselves as facilitators of English language acquisition and learning. It is through their use of ICT that they can perform various tasks. To include, teachers can generate constructive feedback on students’ performances in an attempt to develop empowered and critical and reflective learners. They can also assist learners in the way they approach or design online courses with Moodle. In this respect, teachers can help learners deal with e-learning. Therefore, the use of ICT in English language teaching alleviates the burden of introducing intricate abstract concepts by providing explanations, justifications and clarifications that appeal to the learners’ senses, be it visual or auditory. Thus, when teachers operate as facilitators, they might aid learners in the construction of their own developmental route towards language proficiency.

**Teachers as guides**

Some other informants believe in their role as real mentors who can guide the students to develop their own learning strategies, lead learners towards active discovery learning and direct their attention towards the investigation of their own potentials and strengths. They might also promote the active negotiation of some ideas pertaining to the content of an online course in order to help learners interact with one another in a meaningful, relevant, interesting context. Learners might, for example, meet virtually in the chat space of the agreed upon website in order to converse about different course content issues. Consequently, by doing so, ICT manages to incorporate the social dimension while learning English.

**Teachers as coaches:**

Other group of informants consider themselves as coaches who are constantly ready for providing assistance, supervising the learners’ progress and guaranteeing a well-organized classroom atmosphere. They tend to offer motivation and ensure harmonious collaborative work in a virtual world. The role of teachers as coaches can also be revealed when the informants try to align their instructions with the requirements dictated upon them by the syllabus so as to address the needs of all students.

**Teachers as advisors:**

Some other teachers perceive themselves as advisors as they strive to direct the learners’ attention to some key recommendations pertaining to how to handle for example the use of wikis, or web-page design. They might also act as consultant when they help learners manage their course database and as mentors when they inform their learners of the decisions that have to be made for example in relation to e-learning.
Teachers as co–learners:

Through the use of ICT, teachers participate actively in the co–construction of knowledge with their learners who are increasingly encouraged to experiment, think, reflect, question and share the learning process with one another. As such, the use of ICT helps teachers stress the social dimension of classroom interactions and discussions. In the same vein, Redecker (2014) argues that the internalization of the acquisition of a foreign language is founded especially on the dynamic interpersonal aspect of learning. In this way, teachers interact with learners of diverse learning styles, different levels of intelligences and distinct socio–cultural backgrounds. Therefore, it is through their technology – enhanced instructional tools that EFL teachers promote students’ positive attitudes, lower their affective filters, broaden their knowledge, deepen their understanding and develop their creativity and sense of reflection.

The diverse missions assumed by teachers as facilitators, guides, coaches, advisors and co – learners are strongly interconnected with their choice of high school subjects. The analysis of the fourth question of the interview yields the following findings:

<table>
<thead>
<tr>
<th>High school subjects</th>
<th>Number of teachers</th>
<th>Percentage of teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening</td>
<td>11</td>
<td>44%</td>
</tr>
<tr>
<td>Writing composition</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Pronunciation</td>
<td>7</td>
<td>28%</td>
</tr>
<tr>
<td>Civilization</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Literature</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Oral skills</td>
<td>4</td>
<td>16%</td>
</tr>
</tbody>
</table>

Table: The teachers’ resort to ICT along the different university subjects.

As it is indicated in the table above, the majority of instructors opt for ICT for the teaching of listening courses (44%). Another relatively high percentage of informants tend to resort to ICT in order to teach pronunciation courses (28%) and oral skill courses (24%). A minority of informants make use of ICT in their sessions of literature (8%) and civilization (4%) while none of the informants have applied ICT for instructing reading comprehension or writing composition. Based on these findings, the use of ICT pervades most of the high school specialties but with varying degrees. The tendency seems to be in favor of the subjects that seek to develop the learners’ aural – oral skills.

A better clarification of the skills that teachers strive to develop through the implementation of ICT is depicted in the analysis of the fifth question of the interview.

<table>
<thead>
<tr>
<th>The skills to be developed</th>
<th>Number of teachers</th>
<th>Percentage of teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening skills</td>
<td>11</td>
<td>44%</td>
</tr>
</tbody>
</table>
Writing skills | 0 | 0%
Speaking skills | 11 | 44%
Critical and reflective skills | 3 | 12%
Reading skills | 0 | 0%

Table: The targeted skills through the use of ICT

As it is shown in the table above, the results indicate that a similar high percentage of informants (44%) agree on the necessity to develop the learners’ listening as well as speaking skills. Only 12% of informants allude to importance of developing the learners’ critical and reflective skills while none of the informants evoke the adoption of ICT in order to enhance their learners’ reading or writing skills. Therefore, the general trend of informants embraces ICT for the development of their learners’ communicative competency and oral performance. In the same vein, Carmen et al., (2003) argues that the integration of ICT in teaching results in an improvement in the learners’ language competencies, an enhanced intelligibility and a promoted communicative interaction.

Concerning the frequency in which ICT is actually endorsed within the classroom teaching methodologies, the informants’ responses seem to vary from one another as it is shown in the table below.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Informants’ number</th>
<th>Informants’ percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>16</td>
<td>64 %</td>
</tr>
<tr>
<td>Frequently</td>
<td>6</td>
<td>24 %</td>
</tr>
<tr>
<td>Sometimes</td>
<td>3</td>
<td>12 %</td>
</tr>
<tr>
<td>Rare</td>
<td>0</td>
<td>0 %</td>
</tr>
<tr>
<td>Seldom</td>
<td>0</td>
<td>0 %</td>
</tr>
</tbody>
</table>

Table: The frequent usage of ICT.

The findings reveal that 64 % of high school teachers use ICT ‘always’. Another group of informants (24%) admit their ‘frequent’ use of technological instruments while a weak percentage (12%) mentions that they ‘rarely’ implement hi – tech tools.

Therefore, the obtained results based upon a likert scale indicate individual variations among EFL teachers in terms of ICT implementation. Based on the interview findings, these individual variations seem to interweave especially with the nature of the course content. For example, the informants who predominantly make use of ICT in every single session are the ones who teach listening or pronunciation while the ones who frequently use ICT conduct oral expression sessions.

Therefore, the use of ICT in teaching English is directly interrelated with the nature of the themes, topics and skills teachers feel the need to accentuate and work on further.
In order to successfully deliver the course content, the informants draw upon the use of some technological tools. The findings are depicted as follows.

<table>
<thead>
<tr>
<th>ICT tools</th>
<th>Informants’ number</th>
<th>Informants’ percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language labs</td>
<td>11</td>
<td>44 %</td>
</tr>
<tr>
<td>Powerpoint presentations</td>
<td>12</td>
<td>48 %</td>
</tr>
<tr>
<td>Online learning platforms</td>
<td>2</td>
<td>8 %</td>
</tr>
</tbody>
</table>

Table: The utilized ICT devices.

The contacted high – school teachers of English show a complete reliance on particular ICT instruments rather than others. They seem to favor the use of audio language labs (44%) and powerpoint presentations (48%) as the main ICT tools used in the classroom. Very few informants (8%) admit their teaching experience with online learning platforms. The latter result testifies that lack of the teachers’ awareness and knowledge in administering a course virtually. Therefore, the high percentages mentioned earlier testify the teachers’ preference to some particular multimedia technologies into their actual teaching practices at the expense of other ones, which has also been stressed by Neo & Neo (2004).

Next, when asked to identify their learners’ attitudes towards the implementation of ICT, none of the informants alluded to ICT as confusing, boring or perplexing. But rather, all of them argue that their learners have found the experience of integrating ICT into learning English as ‘positive’. The students’ satisfactory stance corroborates similar findings achieved by Li, Chu and Ki (2014), Sagin Simsek (2008) and Christensen (2002) who tried to highlight through their research the enthusiastic, optimistic and encouraging effects of ICT on every individual learner.

Other merits that lay behind the use of ICT are stressed by the informants when asked to depict any special learner habits they have noticed. They represented their learners as shown much commitment to enhance their proficiency level in English, much willingness in being involved in collaborative activities, much eagerness to develop their autonomous profiles as foreign language learners, much concern and interest in learning language items, structures and functions, much motivation to assess themselves and their peers and much determination in ensuring an active role in learning. As a result, the use of ICT provides learners with the opportunity to interact with one another in meaningful and authentic contexts. It also promotes interpersonal communication and strengthens social relationships. The use of ICT accentuates the social dimension of learning. This has lead to the proliferation of independent language learners who increasingly tried to assume responsibility over their learning. Therefore, the use of ICT has lead to the emergence of profile of autonomous. The subsequent interview question tried to elicit from the informants the measures they rely on to judge the efficiency of their ICT use. The results indicate that teachers determine the effectiveness of their technological use based on a variety of means. To mention in particular, the informants mention that they mostly rely on their own frequent direct observations and
ongoing oral feedback. The former refers to the remarks that have to be inferred based on the actual learning situation while the latter indicates the teachers’ verbal comments on their learners’ oral performance. Thus, both direct observations and oral feedback have a paramount importance as they lay the ground for the teachers to make interpretations, deductions and decisions on their own teaching methodology and the tools that have to be used in order to facilitate the course delivery.

When asked to reflect on the extent to which they were successful in adapting ICT innovations to their teaching practices, the informants seemed to pinpoint to a number of challenges and hardships they have personally experienced. To begin with, the unavailability of technological materials is contentious: the informants maintain that the number of available technological devices is rather restricted comparing it to the high number of learners who might be interested in employing ICT. Therefore, the application of ICT might become unfeasible in particular situations. Other problems arise when the informants complain about the poorly maintained technological equipments. Troubles might also emanate from the absence of personnel support. The troubles faced in ICT preparation, identification or application make a group of informants consider ICT use as relatively time-consuming if it is not exploited appropriately (Baron & Harrari, 2005).

4. Conclusion
The concluding part contains a summary of the major findings, highlights a number of potential implications, hints to a number of possible limitations and provides some helpful suggestions for future research.

4.1 Summary of the major findings
To conclude, the research findings demonstrate that most of the teacher informants hold positive, pleasant and encouraging attitudes towards the integration of ICT within their teaching practices. Similar results corroborate the research findings reached by Voogt (2010) and Schrum and Levin (2013). It has also been revealed that the incorporation of ICT for the teaching of the English language has an impact not only on teaching practices but also on the learning processes.

As far as the teaching practices are concerned, the use of ICT seems to be reflected on the instructors’ assumed roles, the choice of high school subjects, ways of assessment and the tools opted for teaching. While conducting sessions using ICT, they do not intend to regard themselves as authoritarian technological professionals but rather they consider themselves as facilitators, guides, coaches, advisors and especially co-learners. The research findings highlight also the major high school subjects that can be the target of ICT use. It has been demonstrated that informants are more inclined to integrate ICT use when they teach listening courses, pronunciation courses and oral skill courses. For this reason, most of the contacted informants try to assess the efficiency of their ICT use on their students’ learning through their own frequent direct observations and continuous oral feedback. They also make use of ICT very recurrently as it is justified by the research findings which indicate that 88% of teachers predominantly resort to ICT while teaching. They draw upon the use of language labs
and PowerPoint presentations as the basic ICT instruments. Still, knowledge of online learning applications is not very common among the contacted teachers.

Concerning the learning process, the use of ICT intervenes in shaping the learners’ attitudes and the skills that they need to develop. In fact, the positive experiences and attitudes that teachers have experienced through the application of ICT seem to be transmitted to their learners whose behavior denotes an increasing devotion, commitment, perseverance, autonomy and motivation to ensure active and collaborative learning. It is through the use of ICT that teachers seek to develop mainly the learners’ aural – oral skills, i.e., their listening and speaking skills together with a slight consideration to the improvement of the learners’ critical and reflective thinking skills. Thus, the basic skills that teachers strive to develop are the learners’ communicative oral competency and their ability to ensure adequate oral performance.

Despite the gains that are achieved on both teaching and learning, there are a number of hardships that have to be dealt with while implementing ICT such as the unavailability, the unfeasibility of some technological materials backed up with the lack of technical and personnel support.

4.2 Implications

This study highlights a number of implications that have to be taken into account while trying to add ICT as essential teaching and instructional aids. To begin with, enriching the teachers’ expertise and knowledge about the use of ICT has to be stressed. Also, developing a strategic plan for effective maintenance and availability of technological equipments has to be ensured. Besides, increasing the teachers’ awareness of the beneficial integrative use of ICT within their teaching of English needs to be highlighted. Each of the already mentioned implications will further be clarified as follows:

- **Accentuate on the teachers’ expertise and knowledge in the use of ICT**
  
  Raising the teachers’ awareness about the importance of ICT is vital (Tondeur et al., 2008). Hence, there is a need to emphasize the teachers’ continuous professional growth and development through the organization of training workshops, seminars and conferences about the use of ICT within the actual classroom teaching and learning practices.

- **The maintenance and availability of technological equipments**
  
  The maintenance of technological equipments draws also upon the crucial roles assigned to the technicians or technology experts in dealing with technical breakdowns rapidly so that to ensure supportive learning atmosphere for the instructors.

- **The integrative use of ICT in teaching English**
  
  In this research study, the application of ICT has predominately invaded certain higher school subjects at the expense of other ones. Therefore, teachers of different specialties have to show more considerable awareness of the integrative use of ICT within their diverse disciplines especially that learners have shown positive attitudes towards the merits that can be fulfilled through the use implementation of ICT.
4.3 Limitations and suggestions for future research
Among the limitations that can be found in this research is the narrow scope of research in terms of the number of participants. Using a large sample of English language teachers from diverse institutional and educational settings can be efficient for the generalization of the research findings. Other researches could examine the potential effects of particular ICT devices on teaching and learning a foreign language.
References


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Appendix: The semi-structured interview

1. Have you implemented ICT within your teaching practices?
   - Yes
   - No

2. If yes, please indicate on the following scale how do you find the experience?

<table>
<thead>
<tr>
<th>Very positive</th>
<th>Positive</th>
<th>Neutral</th>
<th>Negative</th>
<th>Very negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

3. What are the roles you feel you assume when using ICT?

4. What are the high school subjects you taught through ICT?

5. What are the skills you seek to develop through the use of ICT?

6. How often do you implement ICT when teaching?

<table>
<thead>
<tr>
<th>Always</th>
<th>Frequently</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Seldom</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

7. What are the ICT instruments you resort to while teaching?

8. Please indicate on the following scale how do your students’ find the experience?

<table>
<thead>
<tr>
<th>Very positive</th>
<th>Positive</th>
<th>Neutral</th>
<th>Negative</th>
<th>Very negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

9. Are there any special learner habits you have noticed when using ICT in the classroom?
10. How can you determine the effectiveness of your use of ICT in class?

11. To what extent were you successful in resorting to ICT while teaching?