ICT Use in the EFL Classroom in Morocco:
EFL Teachers' Personal and Technology-Related Variables

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ABSTRACT

This study investigates the level of information and communication technology (ICT) use in teaching English as a foreign language (EFL) in Morocco. It explores the effects of EFL teachers' personal and technology-related variables in ICT use in English high school classes. The study opts for a descriptive and an analytical method to account for this claim. Therefore, a mixed-methods approach is used. A survey questionnaire and interviews are conducted to obtain a corpus of data that is both representative and reliable. The sample of the study consists of 30 teachers of English in six high schools in the city of Meknes. The findings indicate that ICT integration in the EFL classes in Morocco is hampered due to different variables. Interior variables refer to the teacher's attitude and dilemma towards using ICT while exterior ones are strongly associated with the lack of ICT facilities and ICT-related equipment in the Moroccan high schools.

KEYWORDS

EFL Classroom, ICT, Teachers' Personal Variables, Technology-Related Variables

1. INTRODUCTION

Being aware of the multiple benefits of introducing ICT in the educational system, the Moroccan educational authorities have initiated the adoption of ICT use in schools through huge national education initiatives. Firstly, the National Charter for Education and Training has incited the use of modern technologies in order to improve the students' learning. Later, the Emergency Plan has come into effect since the year 2009 to accelerate and further reinforce the achievement of the national educational reform that is envisioned by the National Charter.

The adoption of ICT in the educational system has been emphasized in the first area of the Urgency Plan. In Project E1.P10, "Integrating ICT in the Learning Process" has emphasized improving the mechanics of implementing the GENIE Program through having a strategy of equipping schools with the necessary ICT equipment, which will ultimately enhance the pedagogic and learning conditions of the learners (GENIE Division and the General Inspectorate for Educational Affairs, 2013).

Within the same program, a need for having a national strategy for training on ICT is voiced. A large number of administrators and teachers have been trained throughout the 2009- 2013 years. The desired ultimate goal of all these efforts, as it is stated by the ministry, is to improve the students' learning through the teachers' use of ICTs with a view of integrating the learners in the digital society. However, language education in Morocco still relies heavily on passive forms of learning focused on direct instruction and memorisation, rather than interactive methods that promote the critical and individual thinking needed in today's interconnected world.

Ennaji (1998) advocated the use of ICT in English language teaching, and detailed its benefits for both educators and learners. In a study conducted on Moroccan teachers, Biaz et al., (2009) concluded that most teachers use the computer to word-process their lessons or to download materials from the Internet. Another dominant characteristic which is highlighted in this study is that ICT use is teacher-centered in the Moroccan context (Ibid). That is to say, students are very rarely involved as active participants in the construction of knowledge using ICT. Similarly, Mastafi (2013) stated that the use of ICT in the Moroccan educational system is still limited. This study found that among those teachers who use ICT in their classes, 60% use PowerPoint to deliver lessons in a presentation format.

1.1 Statement of the Problem

The status quo indicates that the integration of ICT in Moroccan high schools faces different problems at different levels. This situation has triggered the main research question of this study in order to investigate teachers' personal and technology-related variables that may inhibit teachers from using ICT in their own classes in spite of the availability of ICT facilities in the majority of schools.

2. REVIEW OF LITERATURE

2.1 Defining 'ICT Use'

The terms 'use' and 'integration' are used interchangeably to refer to a teacher's basic use of the ICTs to deliver a lesson or part of it. According to Llyod (2005), the term 'integration' is used "to reflect a change in pedagogical approach to make ICT less peripheral to schooling and more central to student learning" (p. 5). On that account, 'ICT integration' is used with pedagogical considerations that reflect an approach in which ICT is fully integrated into teaching; an approach which is learner-centered and both process and product-oriented. In this sense, ICT use should be done in a systematic and pedagogically planned manner, rather than just as a simple 'add-on' to the traditional tools that are already available for teachers like the blackboard and the chalk, such as projecting a reading-comprehension text for students to read.

According to Sandholtz, Ringstaff, and Dwyer (1997) teachers will predictably progress in using technology over time through five specific stages: entry, adoption, adaptation, appropriation, and invention. As teachers move through the process of ICT integration, their attitudes to technology change as well. Teachers at the early stages have some kind of discomfort using ICTs. But, as they develop towards the end of the continuum, they become more comfortable and self-confident using technology.

Mishra and Koehler (2006, 2008) introduced Technological, Pedagogical, and Content Knowledge (TPACK) as a framework for teacher knowledge for technology integration and argued that the development of TPACK is critical for effective technology integration. As the name suggests, the framework has three main components: content, pedagogy, and technology. However, TPACK goes beyond these three components. Emphasizing the importance of dynamic relationships among these components, Mishra and Koehler (2006, 2008) identified pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK), and technological pedagogical content knowledge (TPCK) in addition to content knowledge (CP), pedagogical knowledge (PK), and technological knowledge (TK). The TPACK framework shows that technology integration requires much more than technical skills.

As stated by Mishra and Koehler (2006, 2008), when teachers understand the framework of TPACK, they can integrate technology into the content and pedagogy of their classrooms. The integration will help students learn more effectively. Mishra and Koehler suggest that TPACK should guide curriculum development and teacher education.

As globalisation and rapid advancements in technology continue to transform civic space and the world of work, education models must adapt to equip second/foreign language learners with

Figure 1. The TPACK framework (Mishra & Koehler (2006, 2008)
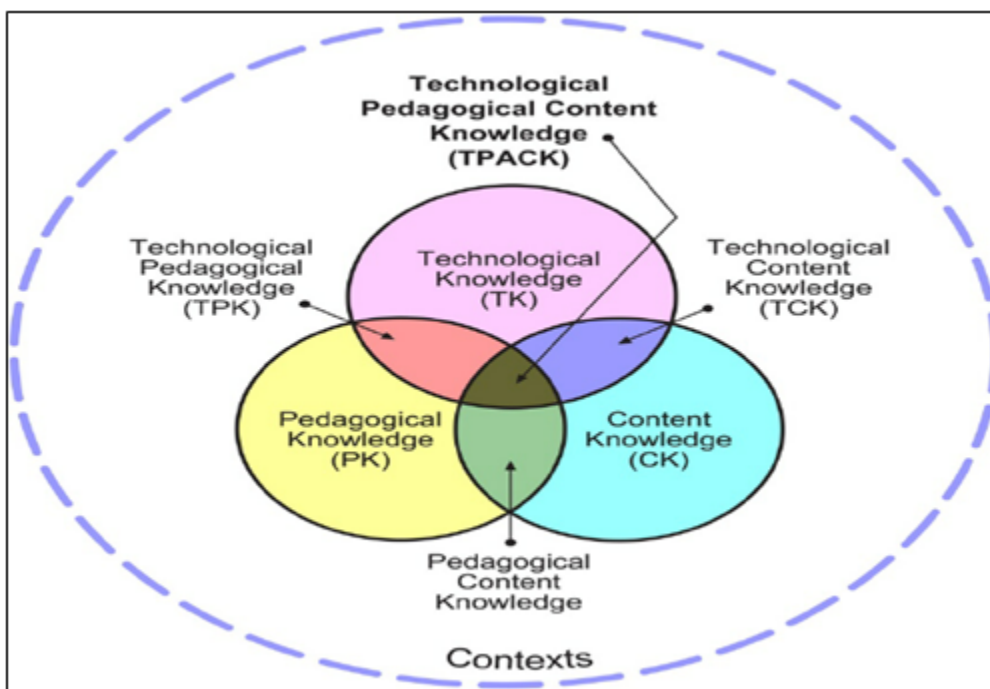
digital skills. In an increasingly interconnected world, many of today's students will be expected to collaborate in the future with peers residing in various parts of the globe, understand cultural nuances and, in many cases, use digital tools to enable these new types of interactions. As Tinio (2003) puts it, "one of the most commonly cited reasons for using ICTs in the classroom has been to better prepare the current generation of students for a workplace where ICTs […] are becoming more and more ubiquitous" (p. 6).

New advances in technology have emerged as potential solutions to second/foreign language learning gaps. Technology can serve as a tool to enable new approaches for the quality of education. Nowadays, teachers and learners can have access to a variety of hardware and software applications that engage them in various language teaching/learning activities. The development of web 2.0 tools has made foreign language education more authentic and more real-life where language teaching/ learning activities have become more communicative, interactive and meaningful. Online Project-Based Learning, for example, focuses on structuring interaction in order to facilitate negotiation of meaning with native speakers and provide authentic experiences of intercultural communication with speakers of other languages (Dooly, 2017).

The World Economic Forum Education 4.0 Framework (2019) recognises 'virtual classroom' as a pioneering aspect of its major criteria and the transition to Fourth Industrial Revolution: Education 4.0 that can enable leapfrogging to the quality of second/foreign language learning (World Economic Forum Education 4.0 Framework, 2019, p. 7). Realising this vision requires shifting the content of learning and experiences to equip students with four basic foundational skills 1) Global citizenship skills; 2) Innovation and creativity skills; 3) Technology skills; and 4) Interpersonal skills, and four fundamental mechanisms that are personalized and self-paced; accessible and inclusive; problem-based and collaborative; and lifelong- and student-driven (Ibid).

ICTs can also support telecollaboration work by enabling foreign language learners to co-create presentations and projects in a truly global team made up of learners with different perspectives

from around the world, as students will need to consider the point of view of and influence other people outside of their own contexts. This kind of collaboration work will enable these students to exercise more inclusive and empathetic leadership in the future. Thus, virtual exchange programs can increase participants' empathy for other cultures and perspectives, develop their willingness to engage constructively with peers of diverse backgrounds and views, and provide participants with the experience of being heard and respected.

2.2 ICT Use and Teachers' Personal and Technology-related Variables

ICT use in education has been under investigation for a long time for two basic reasons: to find the barriers on the way of successful integration of technology into the curriculum (Hew & Brush, 2007), and to take suitable actions in order to include courses of training teachers in modern technologies (Paraskeva et al., 2008). In this respect, a large number of studies have focused on finding the role of teachers' personal characteristics and demographic variables such as age, gender, and years of teaching experience as possible contributors to intention to use ICT in the classroom.

Studies on teachers' teaching experience and age have reported that teachers' ICT use, experience, and age are inversely associated with ICT use in the classroom. That is, more experienced teachers and older teachers tend to use computers less frequently (Albirini, 2006; Bebell et al. 2004). Gender gap has been the subject of many studies in the literature of computer use (e.g., Cooper, 2006) revealing mostly inconclusive results. However, studies with regard to teachers' gender and ICT use have reported lower levels of computer use by female teachers (Volman & van Eck, 2001) due to female teachers' limited technology access, skill, and interest. Surprisingly, as opposed to what most international studies concluded, in Morocco, female teachers are more likely to use computers than male teachers (Fatmi, 2012).

In addition to personal characteristics, teachers' technology-related variables and their relationship with computer use in the classroom have been scrutinised by many studies over the past few years. Teachers' attitudes towards technology are among the most frequently studied technology-related variables in ICT use literature because it is generally assumed that positive computer attitudes foster computer integration in the classroom (van Braak et al., 2004). The general finding of attitudinal studies suggests that any successful implementation of new technology in education requires the development of users' positive attitudes toward it (Larouz & Fatmi, 2010).

In line with this, it has been argued that the development of teachers' positive attitudes toward ICT can be a key player in reducing teachers' resistance to computer use (Watson, 1998) that is associated with computer anxiety. It has been found that computer anxiety can be related to lack of knowledge and skills about computer (e.g., Al-Oteawi, 2002), computer ownership, and frequency of computer use (Baloglu & Cevik, 2008).

3. RESEARCH METHODOLOGY

The current section will present the research methodology followed in this study. It will delve into the research questions, population and sampling as well as research instruments and data collection procedure.

3.1 Research Questions

Given the situation described above, this study uses a descriptive and an analytical method to account for this claim. Therefore, a mixed-methods approach is used. A survey questionnaire and interviews are conducted to obtain a corpus of data that is both representative and reliable to investigate the following main research question: What are the EFL teachers' personal and technology-related variables of ICT integration in the English classroom in Morocco?

While investigating this main question, this study also tackles the following sub-questions:

1. How frequently do the teachers of English in Moroccan public schools use ICT?
2. What ICT equipment and software/tools are mostly used by the teachers of English?
3. What are the language skills that teachers target with ICT use in the EFL classroom?
4. What are the factors that facilitate or hinder ICT use in the EFL classroom?

3.2 Population and Sampling

The nature of the topic under study made it inevitable for us to collect data from a sample of subjects. This enabled us to obtain concrete and substantial data for the practical part of this paper. Our aim behind collecting the data is to explore the effects of EFL teachers' personal and technology-related variables in ICT use in the classroom. Our sample is taken from six high schools in the city of Meknes. The choice of six high schools is for the sample to be representative. Each high school is represented by five teachers, which makes thirty English high school teachers in all.

This study has taken into account a variety of variables among our respondents (n=30), including age, gender, and years of experience, as summarised in Figure 2. As can be seen, the majority of participants are females (n=16). The dominant age category of (n=14) participants is between 30 and 40 years old. Most teachers (n=15) have less than 10 years of teaching experience.

Figure 2. Participants' personal characteristics
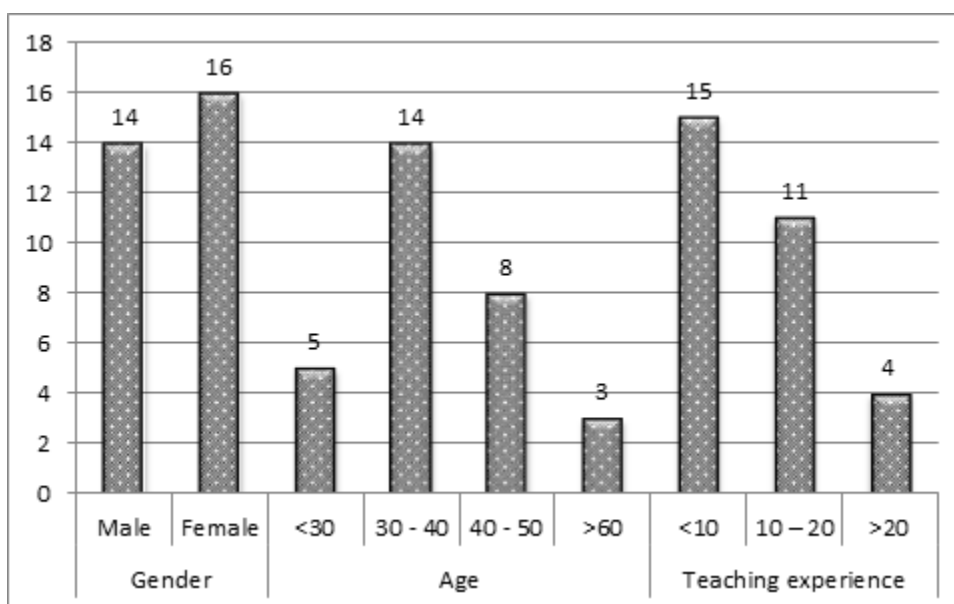
3.3 Research Instruments

Aiming to obtain a corpus of data that is both representative and reliable, we are using both a questionnaire and a semi-structured interview as research instruments. The questionnaire will serve as systematic means of collecting the data, while the follow-up semi-structured interview will enable us to have more control over the interview (vary questions when necessary, go into the details…). First, the questionnaire was pilot-tested and distributed to EFL teachers to complete. Teachers were kindly asked to fill in the survey assuring them that personal information and data will be kept confidential according to ethics of research.

3.4 Data Analysis Procedure

The survey questions were coded and entered into SPSS v.26 to create descriptive statistics, and the graphs were generated using Excel. Follow-up interviews were conducted to examine ICT use among EFL teachers to gain insight, gather data not collected by the survey, and verify the quantitative findings.

4. RESULTS AND DISCUSSION

4.1 Language Skills and ICT Use in the EFL Classroom

Investigating the language skills that the teachers target with ICT use in the EFL classroom, this study asked the EFL teachers a question which targets the language skills and activities for which they use ICT. The results indicate that teachers use ICT not only to teach language skills such as listening, vocabulary and grammar, but also for other purposes such as typing their own lessons and students' tests. The findings show that ICT is mostly used for teaching listening (26%) more than other skills (see Figure 3). Furthermore, EFL teachers also use ICT to prepare lessons' related materials and to type tests (75%).

Figure 3. Language skills and ICT use in the EFL classroom
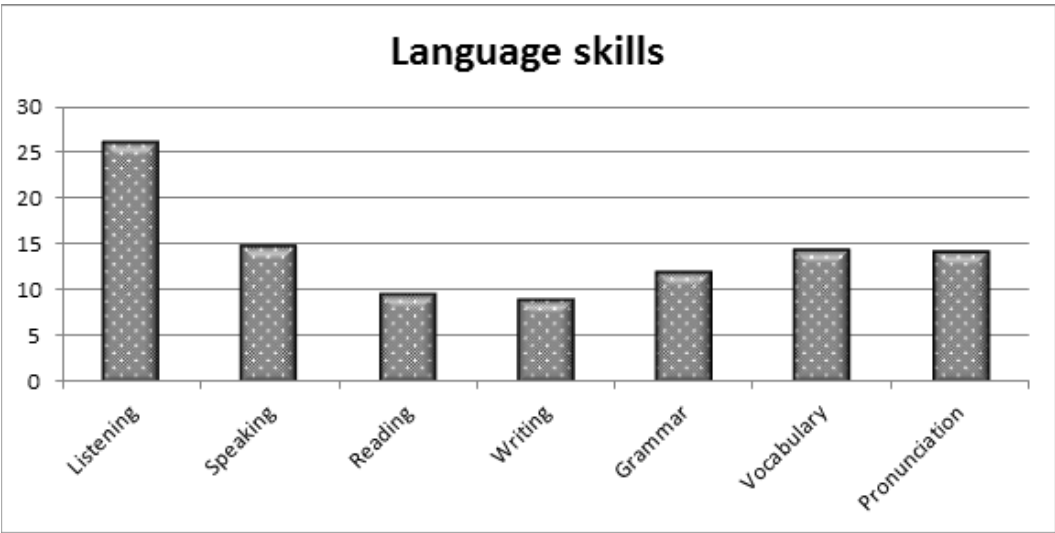
The interviewees are asked questions that further give an insight into the skills/activities for which the teachers of EFL use ICT. Compatible with the results obtained from the questionnaire, the respondents stated that they mainly use ICT to teach language skills. In addition to that, they maintained that they use ICT to target other skills such as vocabulary and language functions. The majority of the interviewed teachers also reported that among the other uses of ICT is to allow students to prepare and give presentations in the English class (23 out of 30 respondents), and to prepare lessons' related materials and to type tests (17 out of 30 respondents).

### 4.2 Facilitating Factors for ICT Use in the EFL Classroom

The different research instruments we are using in this paper have provided us with a rich corpus of data. Through this data we have learned that ICT integration and use in Moroccan high schools is still

in its elementary stages. There are many factors that facilitate and encourage teachers to use ICT in their teaching. For the sake of organisation, we divided the facilitating factors as follows:

4.2.1 Teacher-level Facilities

By teacher-level facilities we are referring to those factors that facilitate ICT integration and use at the level of teachers and software used. The majority of EFL teachers among our subjects (n=26) have computers at home (laptops, desktops), (n=1) always use ICT in teaching, (n=11) sometimes use ICT, while (n=6) rarely do, as shown in Figure 4.

Figure 4. Teacher-level facilities, frequency of ICT use and software used
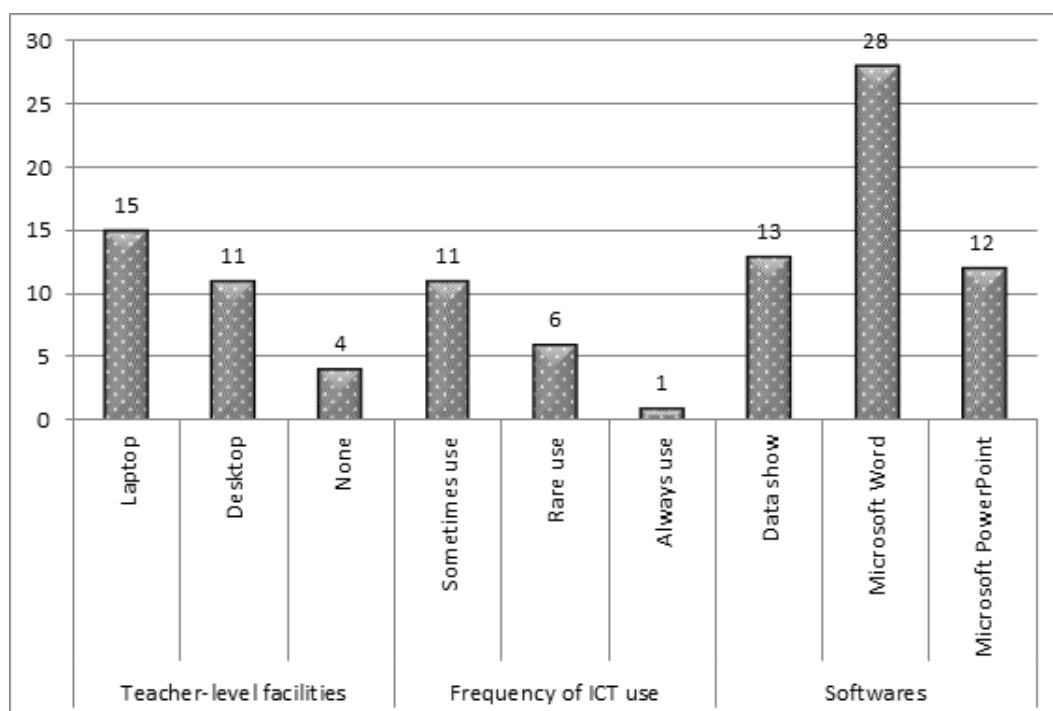
These numbers indicate that there is a growing interest and willingness among teachers to reconcile with ICT. The fact that the majority of teachers have got computers at home helps and encourages them to use ICT in their teaching. They can easily have access to the internet and get free and diverse teaching materials. Many teachers bring their own laptops to their classes. Some teachers have got diplomas in computer science; this eliminates obstacles of ICT literacy. All in all, it is undeniable that a good number of teachers show a curious interest in using ICT in their classrooms.

4.2.2 School-level Facilities

School-level facilities are those facilities provided by the school that support the project of ICT. Only 10% of teachers responded 'yes' when asked if their school has enough ICT equipment. Roughly speaking, this 10% manifests in one or a few data shows per a school in addition to a loud-speaker that teachers use for listening, one of the outstanding innovations that schools provide is the establishment of multimedia rooms.

4.2.3 System-level Facilities

By system-level facilities we refer to the policy and philosophy of the ministry of education regarding the issue of ICT integration and use in Moroccan high schools. The facilities in this respect are the different projects and programs issued by the ministry of education, namely GENIE and Nafida. All participants know about GENIE while (n=24) know about Nafida program. The majority of participants (n=23) have benefited from these either in in-service computer training sessions or getting equipment for reduced prices (see Figure 5). Another aspect of system-level facilities is the efforts of the ministry of education to provide schools with ICT tools, such as data shows, computers, and other electronic facilities.

4.3 Barriers of ICT Use in the EFL Classroom

In the above section, we have talked about a number of facilities that encourage and facilitate the use of ICT in teaching, but numerous are those factors that hinder or even prevent EFL teachers from doing so. For example, only 3% of our subjects always use ICT in their teaching, 37% do use ICT sometimes, and 20% rarely do, while 40% never use ICT in their classrooms. Many models of classifying these barriers are found in the literature, we found Bingimlas' model (2009) very clear and useful to adopt in this study.

Figure 5. System-level facilities
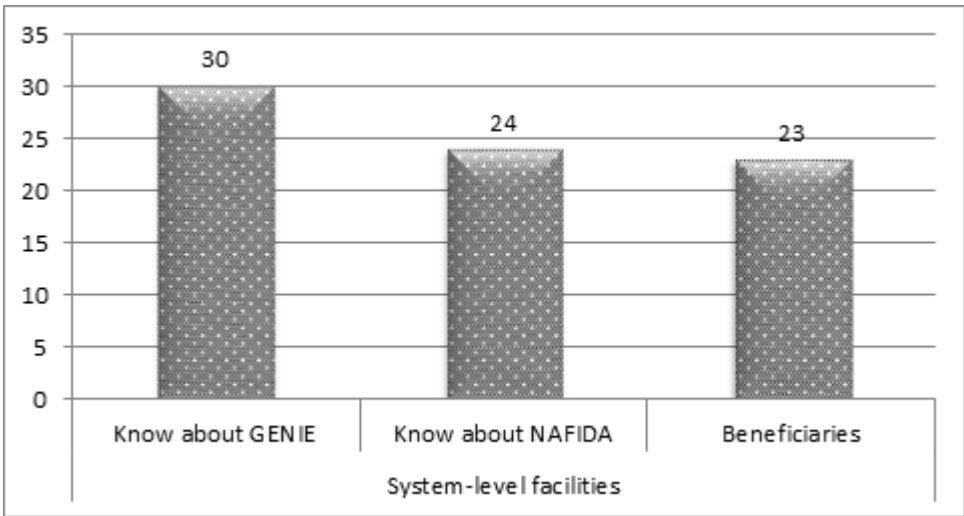
4.3.1 Teacher-level Barriers

We found it useful to divide teacher-level barriers into three sub-divisions. First, we will look at 'lack of teacher confidence', second 'lack of teacher competence', and finally 'resistance to change and negative attitudes'. These subdivisions reflect the responses of our subjects as shall be indicated by the accompanying figures.

4.3.1.1 Lack of Confidence

Lack of teacher confidence is one of the biggest barriers that negatively interferes with teacher's decisions to use ICT. Along with the questionnaires, the interviews we had with the subjects were

a clear-cut proof that the majority of teachers who never use ICT are those who suffer from lack of self-confidence. This problem of lack of confidence is found chiefly among the old generation of teachers. This category had their training in an era when ICT was in a far less advanced state than now. ICT at that time was not implemented yet in teaching. This category of teachers has a fossilized habit of teaching with "chalk and talk". With the abrupt growth of technology, these teachers find it very difficult to adapt to these new ways of teaching as a result of lack of self-confidence.

4.3.1.2 Lack of ICT Competence

Lack of teacher competence is another barrier that hinders or prevents teacher's use of ICT. Nowadays, Moroccan EFL teachers are very lucky; in training centers, student-teachers receive training on ICT, which strengthens their competence. However, the old generation of teachers (not exhaustively) has difficulties using ICT, their competence is at a very low level. For example, 57% of our subjects do not know how to use the data show. A much more striking fact is that 10% do not even know how to use computers, 7% are illiterate when it comes to using Microsoft word, and 60% do not know how to use Microsoft PowerPoint, as illustrated in Figure 6.

These devices and software applications (computer, data show, Microsoft word, and Microsoft PowerPoint) are the ABCs of ICT. How can a teacher give a presentation if he/she doesn't know how to use Microsoft PowerPoint? How do you expect a teacher to bring students extra homework if he/she doesn't know what Microsoft word is? Lack of teacher competence is a serious barrier, overcoming this barrier will be done through ensuring equal opportunities of continuous training for high school teachers.

Figure 6. Lack of ICT competence
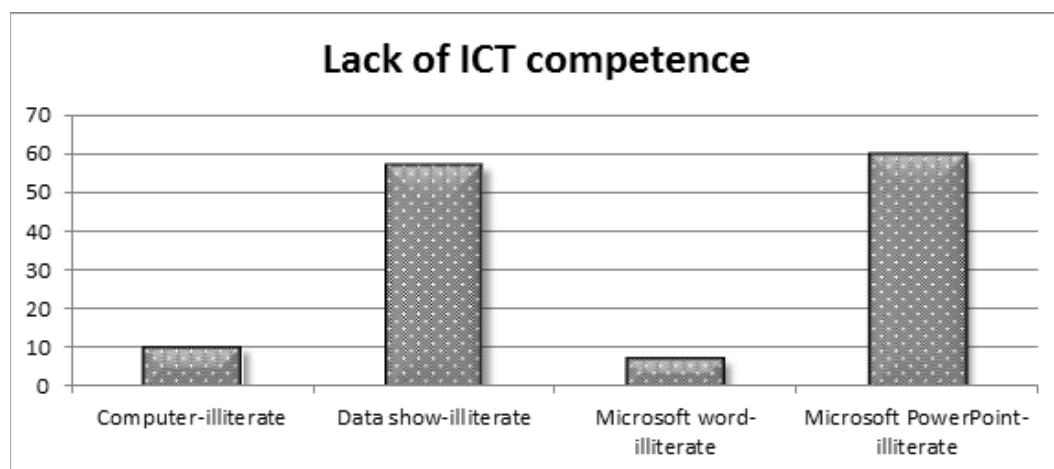
4.3.1.3 Resistance to Change and Negative Attitudes

Another barrier lies in the negative attitudes widely held by high school teachers. Resistance to change is the tendency to stick to the traditional ways of teaching and ignore the modern innovations like ICT. When asked about the factors that prevent or hinder their use of ICT, 3% of subjects strongly maintained that students learn better without ICT (see Figure 7).

However small this number is, it shows that there are still some teachers who strongly believe in the traditional ways of teaching and who resist change in all its aspects. Among the negative attitudes we came up with through the questionnaires and interviews are pretexts like; ICT is demanding,

Figure 7. Resistance to change and negative attitudes
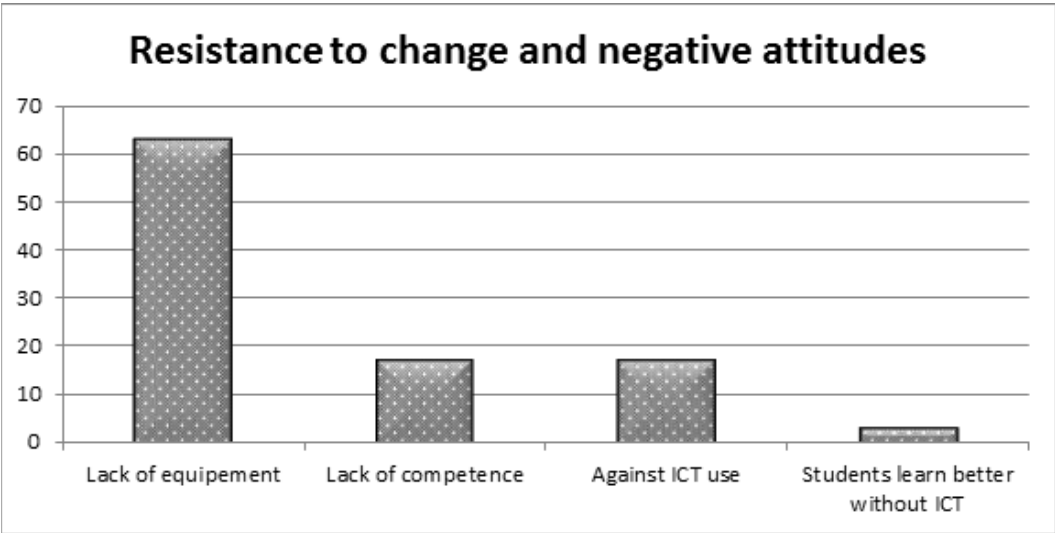
ICT is time consuming, it is unreliable, and there is not enough equipment. Such negative attitudes however, have been overcome by other teachers who use ICT on a regular basis.

4.3.2 School-level Barriers

We divided school-level barriers into two sub-divisions: lack of effective training and lack of technical support.

4.3.2.1 Lack of Effective Training

We talked about the unequal and insufficient training opportunities earlier. From the perspective of the institution, the school does not organise training sessions for teachers. The implication of this is that 63% of the teachers use mobile loud-speakers, which are easier to manipulate, while 37% use laptop and data show. In this respect, the school is meant to play the role of an effective mediator between the ministry of education and the teachers.

4.3.2.2 Lack of Technical Support

Lack of technical support is one of the serious barriers that prevent and hinder ICT use in Moroccan high schools. When we asked the subjects if their high schools have enough ICT equipment; 90% answered NO, while only 10% answered YES. Some interviewed teachers maintain that the majority of their classrooms lack the basic "technical support", like electricity plugs. This 90% reflects the scarcity of ICT devices such as data shows (only one or two per a school), and multimedia rooms are not well-equipped in all the high schools.

4.3.3 System-level Barriers

We referred earlier to system level facilities, concerning system-level barriers they refer to the negative sides of the educational system philosophy. These pitfalls interfere negatively with the integration and use of ICT in Moroccan high schools. The nature of the philosophy maintained by the ministry of education makes it difficult for teachers to use ICT on a regular basis. Teachers are forced to finish their textbooks in limited deadline. This makes them totally preoccupied by the obsession of finishing the textbooks. Furthermore, the way textbooks are designed in Morocco does not allow for a continuous and effective use of ICT in teaching.

5. CONCLUSION

The above factors and accompanying figures show that ICT use in Moroccan high schools is an ambitious project that is in its elementary phase of implementation. ICT use was found to be significantly related to teachers' personal and technology-related variables in ICT use in English classes. The findings indicate that ICT integration in the EFL classes in Morocco is hampered due to different variables. Interior variables refer to the teacher's attitude and dilemma towards using ICT; while exterior ones are strongly associated with the lack of ICT facilities and ICT related equipment in the Moroccan high schools. However, there are some teachers who have successful experiences in terms of ICT use, and thus support the project. Besides, ICT use in Morocco, and particularly in Meknes high schools, is supported by some facilitating factors at different levels.

By considering the factors that impede EFL teachers of using ICT in their classrooms, future research can support the development of ICT integration into the curriculum by EFL teachers. This study has provided evidence that ICT use in the EFL classroom in Morocco is conditioned by certain conditions, including: adequate and sufficient software, formal in-service computer training, and technical support, among others. GENIE program has tried to boast ICT integration in education; however, this program lacked a clear and professional vision of ICT integration in education in Morocco. ICT integration in the EFL classroom is positively affected by the teachers' attitudes about technology. The more positive attitudes of EFL teachers about technology, the more they may integrate ICT in their classrooms.

Overall, as a model and concept of research, the current study is still in its infancy in the Moroccan context. Only 30 respondents and interviewees were included in this study. A replication of this study should be conducted using a larger sample size. Also, the current study was limited to high school teachers of English. Replications of this study should include junior high school and university teachers. Thus, the current findings should be viewed as a starting point for future research. It is hoped that this study has provided insights into the importance of understanding the complexity associated with ICT integration in the EFL classroom in Morocco.

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