

THE IMPACT OF TEACHING EXPERIENCE ON PROFESSORS' USE OF ICTs IN THE TEACHING PROCESS

Hicham Laabidi

Department of English Studies, School of Arts & Humanities,
Moulay Ismail University, Meknes, Morocco
h.laabidi@umi.ac.ma

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Abstract: Technology advancements have made learning more exciting for pupils of all levels. Many studies have shown that using current technology in the classroom benefits both teachers and students. It has fueled their drive to learn more using these new instruments. Thus, schools and other educational institutions have recognized the value of using computers to teach. This paper intends to investigate the influence of teaching experience and teachers' age on the implementation of ICTs in the classroom. The data were analyzed using descriptive means and standard deviations. To assess the impact of teaching experience on computer use for pedagogical purposes, inferential statistics were used. Based on the independent variable of teaching experience, the results showed statistically significant variations in instructors' usage of new technologies in education., $F(4,158) = 20.279$, $p < 0.05$. The current study is highly significant in the sense that it is expected to come up with important findings with regard to the infusion and implementation of information technology in higher education. It provides significant knowledge that can be of great value to both researchers and professors in Morocco and in various parts of the world.

Keywords: *ICTs; teaching experience; pedagogy; educational institutions*

INTRODUCTION

Undoubtedly, computer technologies have been improving very rapidly in the last decades and opened new teaching methods in the sphere of education. This simply means that the rapid development in Information & Communication Technologies (ICTs) has come up with noticeable and significant changes recently and impacted the needs of current communities. Bransford et al. (2000) confirm that "what is now known about learning provides important guidelines for uses of technology that can help students and teachers develop the competencies needed for the twenty-first century" (p. 206).

With the help of internet libraries, teachers, students, and other experts can access endless research papers and teaching resources. (Suárez et al., 2018). Modern computer technologies have become an important part of several organizations and enterprises currently (Zhang & Aikman, 2007). Technological gadgets began to be

installed in universities and other educational institutions at the beginning of the 1980s. Many researchers have suggested that these new technological tools will be a vital component of education for the coming generations (Bransford et al., 2000).

Many professors with favorable attitudes are more likely to embrace computers and have more effective computer abilities than the ones who have unfavorable attitudes. According to Teo et al. (2008), teachers who have positive attitudes towards ICTs would feel more confident integrating them into their teaching practices. Furthermore, Braak (2001) studied the relationship between computer use in classroom practices and several variables which might have a big influence on the infusion of computers in the classroom. One of these numerous variables was teachers' attitudes. The findings of the study showed that professors with positive attitudes are more ready to employ computers to improve

the quality of students' achievements in the classroom. Moreover, prior related studies revealed that teachers' attitudes are impacted by innumerable other intrinsic & extrinsic constituents. These determinants include gender, age, teaching experience, computer experience, classroom and personal computer and internet ownership, computer abilities, and computer training (Berner, 2003; Teo et al., 2008).

Many research studies have suggested that technology can be used in teaching processes more effectively under the condition that teachers should develop more favorable attitudes regarding modern technological devices. Rogers (2000) stated that attitudes concerning ICTs play a significant role in this educational operation in the sense that teachers' attitudes could become a considerable barrier blocking the promising integration of computer technologies in the classrooms.

To put it differently, negative attitudes are more likely to have a great unfavorable effect on implementing modern technologies for instructional purposes. In this respect, Worthington and Zhao (1999) stated that "there have been growing concerns that computer anxiety or negative attitudes towards computers among teachers and students will prevent them from reaping the pedagogical, social, and economical benefits of computer technology" (p. 299). Furthermore, Chin and Hortin (1994) showed that teachers' attitudes regarding the use of technology in instruction are a crucial "condition for effective use of computers in the classroom" (p. 200).

The use of ICTs in teaching and learning processes is reported to boost teachers' performances and students' achievements since it provides professors and students with more enough knowledge and appropriate understanding and skills (Ouzts & Palombo, 2004). So that teachers could reap these fruitful consequences, highly sophisticated technological instruments should be used for instructional objectives within our classrooms. In this

respect, Miller et al. (2000) pointed out that "the use of technology in education can facilitate learning by providing more relevant learning opportunities, changing the orientation of the classroom from professor to student-centered, preparing students for employment, increasing flexibility of delivery, increasing access, and potentially satisfying demands for efficiency" (p. 231). It is self-evident that universities and other educational institutions are facing many problems because of the noticeable impact of computers on the sphere of education. Rice and Miller (2001) showed that,

"Institutions face major challenges in trying to keep pace with technological advances. These challenges include keeping up with the costs of rapidly changing technologies, fostering changes in the learning processes and teaching methods, providing students with the electronic resources they expect, competing with private enterprises investing in distance learning, and training faculty in the use and integration of various technologies." (p. 330).

Numerous constraints and impediments may affect teachers' usage of ICTs in classroom instruction. Ertmer (1999) found that first-order and second-order barriers may impede the integration of ICTs in schools. To teachers, first-order hurdles are external. Some of these obstacles are inadequate technology infrastructure, lack of time, unsuitable training, and inadequate technical support. Second-order obstacles, which are intrinsic to teachers, incorporate the attitudes and beliefs of educators. Numerous research investigations have shown that teachers' opinions may significantly impact their propensity to adopt or refuse to adopt these new technology devices in the classroom.

According to Bullock (2004), the successful usage of ICTs required the existence of positive attitudes toward these contemporary technologies. Moreover, Teo Lee and Chai (2008) found that teachers with positive views are more willing to integrate

ICTs into their classroom practices than those with negative attitudes.

Consequently, studying instructors' attitudes regarding the integration of technology in classrooms could provide numerous opportunities to develop effective means of enhancing the use of these highly advanced technologies in education.

Therefore, this present paper aims to provide satisfactory answers to the following research questions: Are there any statistically significant disparities between teachers' use of new technologies and their years of teaching experience? Are there any statistically significant disparities in academics' adoption of new technology based on their varying ages? In other words, do teaching experience and professors' age considerably impact their desire to adopt or refrain from adopting ICTs in their teaching practices? In this respect, it is necessary to state that teaching experience refers to the sum of skills, abilities, competencies, or training acquired over time that help a particular individual performs a specific task effectively. In the field of teaching and learning, it includes full responsibility for the planning and delivery of instruction and evaluation of student achievements.

LITERATURE REVIEW

The Use of ICTs in Education

Access to data via communications (ICT) is the focus of information communication technology (ICT) (Khan et al., 2015). Khan et al. (2015) stated that the term "ICT" is synonymous with "educational use of information and communications technology." Further, information and communication technology (ICT) is unquestionably associated with the use of information and communication technology for educational objectives (Khan et al., 2015). Internet, smartphones, television, movies, and other internet-based project work are examples of emerging multimedia technologies (e.g., e-mail, chat, blogs, wikis, podcasts, and other forms of podcasting) (Andrews, 2000). Moreover, Lever-Duffy et

al. (2005) pointed out that many "educators may take a narrower view" and dominantly "confine educational technology (ICTs) primarily to computers, computer peripherals, and related software used for teaching and learning" (p. 4-5).

Computer technologies, particularly computers and Internet technologies, promote a variety of teaching and learning methodologies instead of only allowing teachers and students to carry out what they have always done correctly. Students who use computers for educational purposes become more involved in learning (Jonassen & Reeves, 1996).

Technology's influence on how students acquire essential knowledge will continue to expand (Parkinson & Hollamby, 2003). Rowcliffe (2003) asserted that PowerPoint inspires students if appropriately utilized. Clearly, the utilization of films, television, and multimedia computer applications may supply learners with authentic content that will increase their engagement in the process of gaining pertinent information. Lin et al. (2014) suggested that technical breakthroughs would be used if they were appropriate for the current environment and their costs were decreased.

Recently, numerous research studies on the integration of contemporary technology in education have been done. During this time, the focus has shifted from what the new technology may offer learners to how to use computers to aid learning effectively and efficiently (Chapelle, 2001). Consequently, the use of computer technologies in English Language Teaching (ELT) has attracted the attention of numerous educational stakeholders and decision-makers, as these sophisticated technological tools offer invaluable opportunities that enhance both English language learning and instruction (Steel & Hudson, 2001). Universities have realized the need to incorporate these innovative new tools into teaching procedures. In reality, these institutions have acknowledged that ICTs might play a vital

role in transforming education at all levels. To achieve this objective, higher education institutions are committed to equipping instructors with the necessary tools and providing them with enough training to effectively integrate computers into the classroom (Sahin & Thompson, 2006). Nevertheless, the use of ICTs in the teaching process is complex and difficult (Almerich et al., 2016).

The use of modern technologies in the classroom might promote “deep” learning and allow professors to react better to the different demands of various learners (Lau & Sim, 2008). In other words, computer technologies are highly vital tools that, when used appropriately, could cultivate the move to a student-centered learning environment. Harris (2002) studied ICT-based creative teaching approaches in three elementary and secondary schools, respectively. Harris (2002) concluded that the benefits of computers would be achieved when confident teachers are willing to explore new opportunities for changing their classroom practices by using ICTs. The use of ICTs will strengthen learning conditions and permit the next generations to be prepared for their upcoming lives and careers (Wheeler, 2001). The integration potential of modern technologies is dependent on people's ability to perceive, understand, and use them (Mavrou & Loizou, 2017).

The availability of learning is one of the major blessings of computer technologies in education. ICTs promote the flexibility of delivery of education so that learners may approach learning anytime and from anywhere. It can impact the strategies in which students are instructed and how they pick up knowledge. In fact, this would get the students to be prepared for lifelong education as well as to improve the importance of learning. People are asked to search for effective ways to access learning through ICTs to keep updated with the latest innovations in this sphere (Plomp et al., 2007). Computers can break down geographical and temporal obstacles to

communication (Lim & Chai, 2004). Specifically, the educational needs of professors and students will no longer be limited to printed books. Numerous educational resources are now accessible from anywhere and at any time of day via the Internet. According to Attwell and Battle (1999), students who have access to a computer at home for learning purposes do better in reading and math. Further, computers increase student involvement, resulting in more time spent working outside of class (Becker, 2000). Therefore, access to adequate technological infrastructure and materials in schools and universities is a prerequisite condition for implementing computers in the process of learning and teaching (Al-Shwabkah et al., 2016).

The effective use of ICTs relies on many variables. Teachers' attitudes regarding educational technologies influence their current and future classroom use of computers. Moreover, the use of ICTs in education is hindered by negative attitudes produced by factors such as anxiety and dread (Yildirim, 2000). Many studies have shown that teachers who have a good attitude towards computers are more likely to employ technology in the classroom than their counterparts. (Willis, 1995; Selwyn, 1997).

Consequently, teachers need to develop favorable attitudes toward educational technologies to attain effective integration of ICTs in education. Positive attitudes might be improved by granting teachers the required training to teach them how to completely make use of computers, smart phones, tablets, and other gadgets within their schools. Additionally, favorable attitudes might be boosted through offering enough technological infrastructure and other related infrastructure (Yildirim, 2000). Although there is an obvious increase in the availability of computer tools in institutions, the use of ICTs across the curriculum has been unsuccessful. In other words, despite the large amounts of money that have been spent on upgrading educational technologies, a lot of teachers have not succeeded in using ICTs

effectively in their classrooms. In fact, a large number of contemporary research studies have shown that the implementation of ICTs across the curriculum is not progressing because of the availability of many barriers ranging from educational obstacles to intrinsic ones (Sureshramana, 2007; Wu et al., 2008). It is worth noting that professors' positive or negative attitude toward the integration of computers affects their effective utilization; if the instructor shows an unfavorable attitude toward them although they are offered wonderful and enough facilities; they will not use them in their classroom practices (Eger et al., 2018).

ICTs Integration in the Classrooms

Due to the important role that computer technologies play in today's job markets, universities are asked to offer the most suitable learning and teaching conditions for both teachers and learners to make effective use of these modern technologies within classroom practices (Hollamby & Buckner, 2003; Del Favero & Hinson, 2007). Developing enough understanding of how to use a computer will certainly motivate professors to utilize technological instruments across the curriculum. It is necessary to help instructors grasp how to run uncomplicated tools such as CD drivers, printers, keyboards, and mouse.

Additionally, teachers should be encouraged to use some fundamental computer program directions (e.g., file, edit, view, insert, and format). When teachers develop the ability to make use of a few basic computer programs, especially Word, Excel, PowerPoint, Publisher, and HyperStudio, they will become conscious of the fact that computer technologies can help them carry out their work more efficiently and more successfully (Bitner & Bitner, 2002). Thus, instructors at various levels of schooling must successfully integrate ICT within the classroom because computer utilization is persistently growing in different parts of the globe (McCannon & Crews, 2000). Staples et al. (2005) carried out a research study in three

primary classrooms. They collected the data using participant observations, interviews, field notes, and artifacts. They confirmed that there is a strong relationship between insufficient usage of ICT and four principal factors: teachers' professional development, financial support, supervision, and materials maintenance. If professors grasp that the integration of computer technologies provides a relative advantage over other technologies, for instance, it improves the quality of teaching and learning; it is more likely that they will be implemented and used in teaching (Alemu, 2015).

The Impact of Teaching Experience on ICTs Integration

Regarding the effect of teaching experience on the incorporation of ICTs in the classroom, previous research has likewise produced contradictory findings. Numerous researchers have asserted that the significance of teaching experience is little. For instance, Becker (1999) found that teaching experience should not be considered a crucial element in determining the application of ICTs in the classroom.

According to Dusick and Yildirim (2000), there is no significant association between the use of ICTs and teachers' teaching experience. In the same context, Shegog (1997) examined academics' attitudes on computer use based on their age, gender, teaching experience, ethnicity, and computer experience. The study discovered that teaching experience should not be used as a predictor of professors' attitudes toward the incorporation of computer technology into the educational process.

Other research investigations, on the other hand, have shown that teaching experience influences the adoption of computer technology by teachers. In fact, it is considered that teaching experience has a significant impact on instructors' attitudes toward the incorporation of computers in the classroom (Chiero, 1997; Asan, 2003). According to Adams (2002), instructors with three years of experience are required to

employ computer technology in their classrooms. In addition, he concluded that professors with 10 to 19 years of teaching experience are more likely to use computers less frequently in their classrooms (Adam, 2002).

In a similar vein, Dorman (2001) found that instructors with fewer years of teaching experience are likely to be more interested in the use of educational technology than those with more years of teaching experience. According to Aslan and Zhu (2016), the perceived qualities of ICT are technological elements. In addition, Dexter et al. (1999) found that professors with less than ten years of teaching experience were more receptive to adopting new ideas than those with greater experience. Migliorino and Maiden (2004) investigated the views of 770 educators toward the employment of electronic scoring tools in this context. Gender, age, and teaching experience were found to be significant determinants of instructors' opinions toward the usage of electronic assessing software. Therefore, educators should be allowed five to six years to enhance their computer technology expertise. If they reach this level, they may have the ability to adapt their teaching approaches and embrace ICTs in the classroom (Hadley & Sheingold, 1993).

The Effect of Age on ICT Integration

There are conflicting results in previous studies regarding the impact of age on ICTs use in education. For example, Kendel (1995) found that the age variable was statistically significant because younger professors showed more positive attitudes towards the integration of computer technologies for pedagogical purposes. Yet, Chio (1992) concluded that old professors are more likely to have more favorable attitudes concerning the use of modern technologies in teaching practices. Similarly, Seliger and Shohamy (1989) study the correlation between age and the implementation of the new technologies in teaching. The study results showed that there was no significant

relationship between teachers' age and their attitudes towards ICTs.

Furthermore, Lamboy and Bucker (2003) pointed out that young teachers were more familiar with the new technological skills than their counterparts. Additionally, Ahadiat (2008) concluded that young teachers showed a higher standard of confidence with ICT devices than older teachers. The latter found difficulties in using the new technologies to facilitate their teaching practices. Similarly, Al-Ghonaim (2005) did a research study at Buraidah College of Technology in Saudi Arabia to address professors' use of computer technologies in teaching. The findings of his study showed that younger professors possessed more favorable attitudes concerning computers than older professors who had less positive attitudes concerning the implementation of modern technologies for instructional objectives. Yu et al. (2017) revealed that several research studies have pointed out that the integration of computer technologies in teaching is also influenced by organizational variables and attitudes regarding technology.

Dyck and Smither (1994) concluded that older teachers had more favorable attitudes and more confidence and comfort while using computer technologies than their counterparts. Todman and Lawrenson (1992) found that,

"The younger [teachers] became familiar with computers at an early age as an everyday part of their home environment. The older [teachers] lacking this gradual and causal introduction to computers at an early age seem more likely to have been confronted abruptly with pressure to achieve prescribed goals in an unfamiliar and seemingly capricious environment, and this is unlikely to be an anxiety-reducing experience. (p. 69)

METHODOLOGY

Almost 300 professors were recruited to participate in this study. However, only 195 (65%) full-time and part-time English professors agreed to complete the survey.

The researcher deleted 32 incomplete questionnaires since they were missing numerous elements of the survey instrument. Consequently, 163 (54, 33 percent) responses to the survey were complete and accurate. The final sample size for this inquiry comprised 163 academics teaching at various Moroccan universities.

The researcher used a survey entitled "Use of Computer Technology." It was taken from the instrument developed by O'Dwyer et al. (2004). The questionnaire was originally designed to gauge the use of ICTs by middle and high school teachers in the United States. It included four main aspects concerning teachers' integration of the new technologies in their classrooms. These aspects included: Teachers' Use of ICTs tools for Delivering Instruction (TUTDI), Teachers' Use of ICT for Class Preparation (TUTCP), Teachers and Students' Use of ICTs to Create Products (TSUTCP), and Teachers' Use of ICTs during Class Time (TUTCT).

The questionnaire items were ranked on a five-point scale (1 = never, 2 = once or twice per year, 3 = several times per year, 4 = several times per month, and 5 = several times per week). Higher ratings on each dimension indicate that teachers use ICTs tools in their classrooms more frequently. It is important to note that the instrument was modified slightly by eliminating and adding elements relating to the incorporation of ICTs into educational practices. There were initially twenty statements. In this study, twelve statements were scored on a five-point Likert scale ranging from never, once or twice a year, a few times a year, a few times a month, and several times a month.

O'Dwyer et al. (2004) evaluated the reliability of the questionnaire used to collect the necessary data. It reported that the coefficient alpha reliability for TUTCP was 0.74 and that for TUTCT it was 0.85. As for validity, it was established by having experienced educators carefully examine the content that this instrument was intended to assess.

The target population for this current study consisted of professors of English working in public and private Moroccan higher institutions during the academic year 2015-2016. This included those teaching in the faculties of letters and human sciences as well as the professors who teach in other higher institutions such as the multidisciplinary faculties. The population is composed of both males and females. There were two reasons for opting to include professors teaching in all Moroccan higher institutions (a) no studies had been carried out to incorporate all universities, and (b) this choice would help to increase the participants' response rates. The resulting sample size used in this investigation was a total of 163 professors teaching in many Moroccan universities. Thirty-five professors work in Moulay Ismail University, twenty-three in Sidi Mohammed Ben Abdellah University, sixteen in Ibnou Tofail, nineteen in Mohammed V, fifteen in Hassan II, eight in Hassan I, eleven in Chouaib Doukali, ten in Caddy Ayyad, seven in Ibnou Zohr, three in Abdelmaled Essaadi, Seven in Mohammed I, seven in Sultane Solimane, and two in Al-Akhawayne university.

There were descriptive and inferential statistical analyses conducted to answer the research question, "Are there statistically significant differences in the integration of ICTs by teachers based on their years of teaching experience?" This research topic was answered using inferential statistics and the ANOVA test to determine whether there were statistically significant differences between the means of the groups. Teachers' use of ICTs was the dependent variable, whereas professors' teaching experience was the independent variable.

The data was gathered using both the printed version and the online version of the questionnaire. The electronic version was located at the Google Drive Website <https://drive.google.com>, a software program designed for the purpose of writing and using online survey questionnaires. The use of the online version of a survey instrument grants

many pluses. First, it is less expensive than any of the other survey kinds. Second, it is an effective way to increase the number of participants. Finally, web response buttons hamper erroneous data entry.

RESULTS AND DISCUSSION

Age of the Respondents

The survey's first demographic component was age. The age range of the study's participants was below 30 to above 51. Figure 1 depicts the findings for this variable. Almost half of the participants (46.6 percent, $n = 76$) were above 51 years old. Moreover, nearly a third of the participants (28.2%; $n = 46$) were between the ages of 41 and 50, 16.6% ($n = 27$) were between 30 and 40, and only 8.6% ($n = 14$) were under 30.

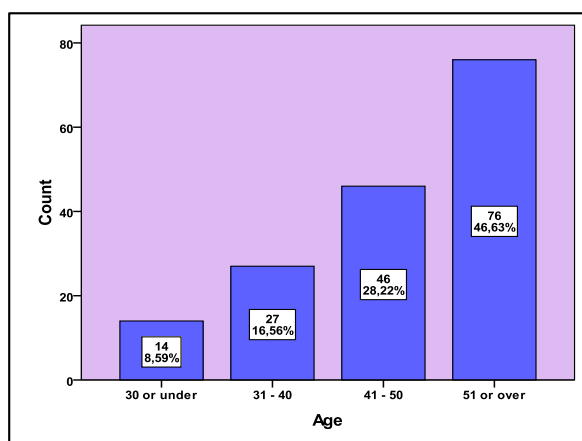


Figure 1. Distribution of Participants by Age

Participants' Teaching Experience

The study gathered data on how long teachers have been teaching (see Figure 2). The majority of participants, 41.1 percent ($n = 67$), had more than 20 years of teaching experience. There were 20.9 percent ($n = 34$) with 11-15 years of experience, 14.1 percent ($n = 23$) with 1 to 5 years, 13.5 percent ($n = 22$) with 16-20 years of experience, and only 10.4% ($n = 17$) with 6 to 10 years of experience.

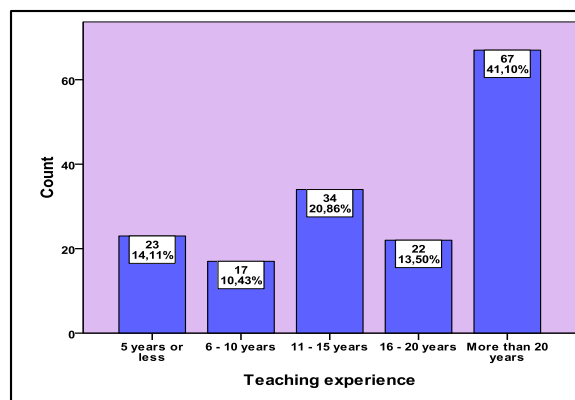


Figure 2. Distribution of Participants by Teaching Experience

Findings related to the Effect of Teaching Experience on Professors' Use of ICTs

A one-way ANOVA was conducted to assess the effect of professors' teaching experience on their use of ICTs for instructional purposes. This test was chosen as it contains two variables: (1) continuous and dependent variable (professors' adoption of computer technology in teaching) and (2) categorical independent variable (professors' age). In fact, the categorical variable consists of four distinct groupings (Group 1: 5 years or less; Group 2: 6 to 10 years; Group3: 11 to 15 years; Group 4: 16 to 20 years and Group 5: more than 20 years). The descriptive statistics and mean plot findings are provided in Table 1 and Figure 3.

From the findings demonstrated in table 1, it is clear that the participants who possessed 6 to 10 years of teaching experience got the highest mean ($M=2.63$, $SD=0.67$), followed by those having 5 years or less of teaching experience ($M=2.52$, $SD=0.62$). Moreover, respondents having 11 to 15 years of experience got a mean of 2.06 ($SD=0.85$). Yet, the lowest means were scored by the participants who possessed more than 20 years of teaching experience ($M=1.10$, $SD=0.91$) and the ones who possessed 16 to 20 years of experience ($M=1.70$, $SD=0.93$).

Table 1. Descriptive Statistics of Professors' Teaching Experience

Teaching Experience	N	Mean	Std. Deviation	Std. Error
5 years or less	23	2.52	.62	.12
6 - 10 years	17	2.63	.67	.16
11 - 15 years	34	2.06	.85	.14
16 - 20 years	22	1.70	.93	.19
More than 20 years	67	1.10	.91	.11
Total	163	1.74	1.02	.08

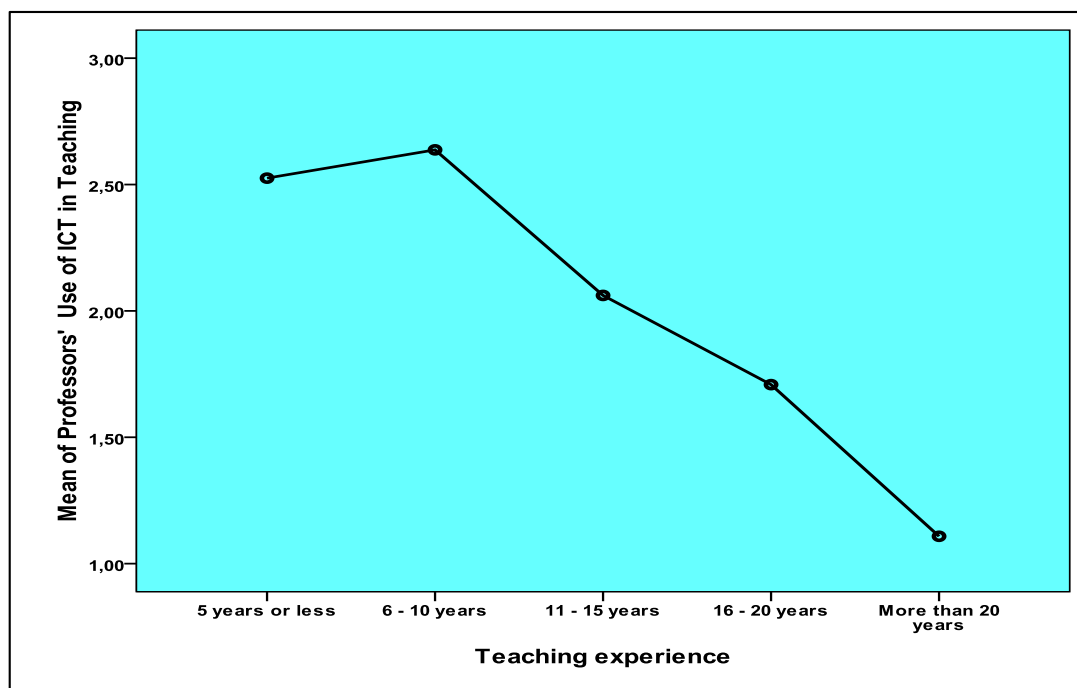


Figure 3. Means Plot for Teaching Experience and ICTs Use in Teaching

Based on these findings, teachers with 15 or fewer years of experience will use ICTs more frequently.

The ANOVA test in Table 2 below confirms this.

Table 2. One-way between Groups ANOVA for Teaching Experience and Icts Use in Teaching

ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	58.139	4	14.535	20.279	.000
Within Groups	113.242	158	.717		
Total	171,381	162			

Table 2 shows that professors' usage of current technologies in classroom practices differs based on teaching experience, $F(4.158) = 20.279$, $p = 0.05$. Because the p-value ($p = 0.000$) was less than the 0.05 (2-tailed) significant level, the null hypothesis

was rejected while the alternative hypothesis was confirmed. The eta squared effect size was 0.33. On the basis of Eta squared values, 0.01 = small, 0.06 = moderate, 0.14 = large (Cohen, 1988). The mean differences were large (eta squared = 0.33). Teaching

experience explains 33% of the variance in teachers' use of computers in the classroom.

Table 3 shows that the means of the four age groups on teachers' use of ICT varied. Those aged 30 or under had the greatest mean ($M=2.64$, $SD=0.58$), followed

by those aged 31 to 40 ($M=2.41$, $SD=0.64$). The age group of 41-50 received a mean of 1.20 ($SD=0.80$). In fact, those 51 and older had the lowest mean ($M=1.20$, $SD=1.02$). Figure 4 depicts the findings.

Table 3. *Descriptive Statistics of Professors' Age*

Age	N	Mean	Std. Deviation	Std. Error
30 or under	14	2.64	.58	.15
31 - 40	27	2.41	.64	.12
41 - 50	46	1.97	.80	.11
51 or over	76	1.20	1.02	.11
Total	163	1.74	1.02	.08

Based on the means plot for age versus ICT use in teaching, older professors are less likely to employ technology. As shown in Table 5, there are age-related disparities in professors' use of new technology.

The obtained results of $F(3,159) = 20.455$, $p\text{-value} = 0.05$, indicate that there are statistically significant differences in the mean ages of teachers who use computers for educational reasons. The null hypothesis that there were no significant differences between the two variables was rejected since the $p\text{-value}$ ($p = 0.000$) was less than the significance level of 0.05 (2-tailed). Calculated using eta squared, the effect size was 0.27. To explain the strength of Eta squared values, the following interpretations were used: 0.01 = minor influence, 0.06 = moderate effect, and 0.14 = significant effect (Cohen, 1988). The magnitude of the mean differences was huge (eta squared = 0.27). This simply indicates that age accounts for 27% of the variance in teachers' use of technology in the classroom. Thus, age is not the only element that influences teachers' usage of ICTs in the classroom.

The participants' teaching experience ranged from less than five to more than twenty years. The null hypothesis stating that there are no differences between professors'

usage of computer technologies based on teaching experience was rejected because significant differences occurred between the two variables, $F(4,158) = 20.279$, $p\text{-value} = 0.05$. In fact, the data revealed that professors with 6 to 10 years of teaching experience had the highest mean ($M = 2.63$, $SD = 0.67$) scores. However, professors with more than 20 years of teaching experience had the lowest mean ($M = 1.10$, $SD = 0.90$).

In other words, younger professors with less teaching experience demonstrated higher standards of computer use than their older peers with greater teaching experience. According to these data, teaching experience appears to have a significant impact on instructors' usage of ICTs in the classroom.

The findings of this study are consistent with those of Lamboy and Bucker (2003), who found a negative connection between teaching experience and computer technology use in the classroom. This research suggested that professors' use of computers in the classroom declines as their teaching experience increases. This means that teachers with greater expertise are expected to employ current technologies less frequently than those with less experience. Similar results were disclosed by Ahadiat (2008).

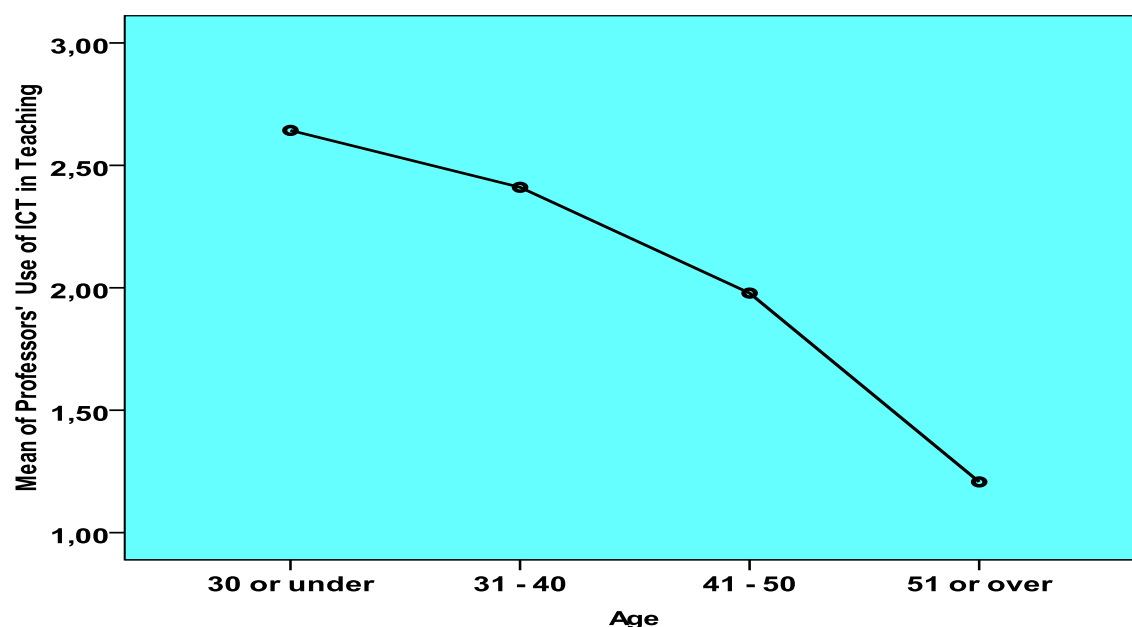


Figure 4. Means Plot for age and ICT use in teaching

Table 4. One-way between Groups ANOVA for Age and ICT Use in Teaching

ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	47.724	3	15.908	20.455	.000
Within Groups	123.657	159	.778		
Total	171.381	162			

Discussion

Based on research questions guiding this study, the following discussion of the results has been developed on the basis of the results highlighted in the previous section. The results showed that the professors in this study were using ICTs in their teaching practices at low levels. These findings support other research studies which reported that professors showed low levels of ICT use for educational reasons (Almusalam, 2001; Peluchette & Rust, 2005). These studies found that the most frequently used technological instruments were these common software programs: PowerPoint, Internet, and word processing. Besides, the results are consistent with Al-Alwani (2010), who found that teachers' implementation of ICT in the classroom was low. The researcher pointed out that communicating with students outside of the institution was the least frequent use of computer technology for

instructional purposes.

The current study revealed that age is a significant factor in relation to professors' integration of computer technology in the classroom. Indeed, the null hypothesis stating that there was no difference between teachers' use of ICT based on age was rejected because a significant difference was found, $F(3,159)=20.455$, $p < 0.05$. The findings revealed that younger professors ($M=2.64$, $SD = 0.58$) use the new innovative technologies in their teaching more frequently than older teachers ($M=1.20$, $SD=1.02$). Younger professors demonstrated higher levels of technology use for instructional objectives than their older counterparts. According to these findings, the factor of age can serve as a strong predictor of professors' use of ICT for educational objectives. In other words, age was found to have some impact on computer technology integration by professors of English teaching

in Moroccan universities.

The findings confirm the results of Na (1993), who reported that there was a significant negative correlation between teachers' age and the integration of computers in the classroom. This result indicated that as the age of teachers increased, their use of ICT to deliver instruction decreased. Also, Xu and Meyer (2007) found that younger faculty members were more willing to use ICT instruments to boost their teaching strategies because of their familiarity and comfort with technology. Similar findings were reported by Lamboy and Bucker (2003).

The participants possessed different levels of teaching experience ranging from less than 5 years to more than 20 years. It was concluded that the null hypothesis suggesting that there are no differences between professors' use of modern technologies based on the variable of teaching experience was refused since significant differences existed between the two variables, $F(4,158)=20.279, p<0.05$. Indeed, the findings demonstrated that teachers possessing 6 to 10 years of teaching experience obtained the highest mean ($M=2.63, SD=0.67$). Yet, the participants with more teaching experience exceeding 20 years obtained the lowest mean ($M=1.10, SD=0.91$). In other words, younger professors with less teaching experience showed high levels of computer technology use than their older counterparts, who possess more teaching experience. According to these results, it may be stated that teaching experience seems to have a high effect on teachers' use of ICTs in the classroom.

The current research results are in agreement with Lamboy and Bucker (2003), who revealed that there was a negative correlation between teaching experience and ICTs implementation in the classroom. This finding indicated that as the years of teaching go up, teachers' use of these sophisticated technologies diminishes. This simply means that teachers who possess more teaching

experience are more likely to use technological devices less than those with fewer years of experience in teaching. Similar results have been found by Ahadiat (2008).

CONCLUSION

This study shows considerable statistical disparities in teachers' use of current technology based on teaching experience. Professors with 6–10 years of teaching experience had the highest mean ($M=2.63, SD=0.67$), followed by those with less teaching experience ($M=2.52, SD=0.62$).

Consequently, the importance of the new technological tools in universities depends on how successfully teachers use them in the classroom. In order to understand the use of computer technologies in Moroccan higher education institutions, the current study addressed the attitudes of professors of English, the levels of their integration of educational technologies in the classrooms, the levels of institutional help, as well as the obstacles that prevent effective technology infusion.

Computer technologies have become essential pedagogical devices in schools and universities in various countries across the globe, including Morocco. However, it is obvious that the successful implementation of these modern tools depends on the availability of suitable technological infrastructure. This means that the effective use of modern technologies for teaching purposes cannot be obtained without eradicating the various obstacles hindering its successful implementation in classrooms.

In spite of the fact that there is still much to discover about the effective use of modern technologies in teaching and learning practices, the findings of the present study have pointed out that one of the most considerable variables that impact ICTs integration is the factor of teaching experience. To guarantee successful implementation of ICTs for instructional objectives, the variables highlighted in the present study should be carefully addressed

by decision-makers. Also

, by considering the different factors hindering professors' willingness to adopt the new technologies in the classrooms, decision-makers would help the use of technological devices for instruction and consequently enable learners to succeed in facing the different challenges of the twenty-first century.

Indeed, universities must go beyond simply providing advanced technical devices in classrooms. Instead, policymakers should help teachers gain the necessary technical skills and knowledge to better support students' academic success both inside and outside the classroom. If used appropriately by qualified teachers, these technology instruments can enhance learning possibilities for all students and help them achieve more.

Lastly, ICTs have played an important role in nearly every area of our daily lives. Consequently, the necessity to employ these new technologies in the classroom has grown substantially. However, the integration of ICTs in universities has experienced numerous obstacles involving both professors and educational institutions. Numerous studies found that the teaching expertise of teachers affected their usage of these modern technologies in the classroom. This research did an excellent job of describing the impact of instructors' teaching experience on their implementation of ICTs for educational purposes. Based on the findings of this study, a number of conclusions can be drawn. These various implications can be summarized as follows:

1. Providing professors with the required technological instruments (hardware and software) and good network connectivity.
2. Designing suitable classrooms to use ICTs equipment effectively.
3. Reducing professors' concerns and misconceptions about the use of the new technologies in language teaching.

4. Encouraging higher education institutions to upgrade their ICTs integration policies.
5. Making the government and its education department encourage and support programs that help teachers integrate modern technologies into their lessons.
6. Making the schools and universities offer the appropriate and constructive evaluation of the conditions of integrating ICTs in all educational levels, primary, secondary and tertiary education.

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