English Professors’ Attitudes towards the Use of ICT in Moroccan Universities

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Abstract
Computers offer several opportunities that encourage the promotion of teaching and learning experiences. The implementation of computer technologies in education has become the main goal of many educational reforms throughout the globe. The Moroccan kingdom, like many other nations, has understood the importance of using computers in schools and universities. For this reason, the Moroccan government has launched numerous projects aiming at the diffusion of Information and Communication Technologies (ICT) in education system. This paper examined the attitudes of professors of English toward the use of computers in teaching practices. The Theory of Diffusion of Innovation (Rogers, 1995) served as the theoretical framework. A survey questionnaire, “Computer Attitude Scale” (CAS), was distributed to the EFL professors during the university year 2015-2016. The CAS that was developed by Loyd and Gressard (1984) was utilized to collect data regarding professors’ attitudes. These attitudes were assessed based on four components: anxiety, confidence, liking and usefulness. Descriptive analysis of percentages, means, and standard deviations were used to analyse the collected data. The study revealed that Moroccan professors of English language posses positive attitudes toward the implementation of computer technologies in instructional practices.

Keywords: Computers, computer technologies, Diffusion of ICT
1. Introduction

Several stockholders strongly believe that the integration of computers in schools and universities is significant if countries aim at development and prosperity (Sooknanan, 2002). Actually, the majority of today’s jobs require sufficient understanding of the new technologies and appropriate computer skills. Therefore, professors need to be qualified to integrate computers in their classroom practices. If nations intend “to meet the challenges of the information age, then educators will have to realize their responsibility to utilize the existing and emerging technologies” (Finaley, 2003, p.10). This means that teachers are recommended to develop adequate and effective training so as to be able to make successful use of computer technologies in their classrooms.

Actually, with the advent of the new technologies, learning has become more exciting for learners regardless of their level of education. A lot of studies have revealed that the implementation of ICT in classrooms have come up with many fruitful consequences for both teachers and learners as well. It has increased their willingness to develop their knowledge through these modern tools. Therefore, universities and other educational institutions have realized the value of including computer technologies in instructional processes.

In fact, professors’ implementation of computers in instruction could be affected by many different factors and obstacles. According to Ertmer (1999), computer technology use in teaching could be affected by two basic kinds of barriers: First-order and Second-order barriers. First-order obstacles which are extrinsic to professors may incorporate lack of infrastructure, insufficient time, inadequate training, and lack of technical assistance. On the other hand, Second-order barriers which are intrinsic to professors include professors’ attitudes and beliefs. Many researchers found that teachers’ attitudes could have a great impact on their adoption of computers while instructing. Bullock (2004) revealed that effective integration of computers presupposed the existence of positive attitudes regarding these new technologies. Furthermore, Teo Lee & Chai (2008) found professors with favourable attitudes are more prepared to integrate computers in their teaching practices than those professors who possessed negative attitudes. Therefore, grasping teachers’ attitudes towards the use of computers in classrooms might offer several opportunities to find effective methods to promote the infusion of these new technologies in education. Thus, this current paper intends to answer the following research question: what are the attitudes of Moroccan professors of English language toward the use of computers in universities?

2. Previous Studies

2.1. Professors’ Attitudes and ICT Integration in Teaching

An attitude might be defined as a positive or negative emotion toward a particular object or behaviour (Ajzen & Fishbein, 1980). According to Ajzen & Fishbein reported that an individual’s attitude toward an object is composed of two basic elements: a view that that object could lead to a particular consequence and an assessment of the outcome of that using that object.
Many researchers have proposed that technology could not be integrated in teaching unless professors possess positive attitudes towards the new technological instruments. Rogers (2000) pointed out that attitudes regarding computers play a considerable part in the process of ICT implementation since these attitudes might become a big obstacle hindering the successful and effective use of computer technologies in the classrooms. In other words, negative attitudes are expected to have a considerable negative influence on the use of computers in teaching. In this context, Worthington & 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). Additionally, Chin and Hortin (1994) revealed that professors’ attitudes toward ICT use in instruction is an important “condition for effective use of computers in the classroom” (p.200).

2.2. Factors Influencing Teachers’ Attitudes towards ICT Integration

Several teachers possessing positive attitudes are expected to adopt computers and develop more computer skills than the ones who have negative attitudes. For instance, Teo et al. (2008) concluded that teachers who possess favourable attitudes with regards to computer technologies would feel comfortable employing them in their classrooms. Moreover, Braak (2001) examined the correlation between computer implementation in teaching and numerous factors which could have a great impact on the use of computers in the classroom. One of these various factors was professors’ attitudes. The results of his study revealed that teachers with favourable attitudes are more prepared to integrate computers to boost the quality of learning and teaching. Besides, previous literature found that professors’ attitudes are affected by many other factors including gender, age, teaching experience, computer experience, computer and internet ownership both in class and at home, computer skills and computer training (Berner, 2003. Dusick, & Yildirim, 2000; Teo et al., 2008).

2.2.1. The Gender Factor

Many studies found that computers are more appealing to males than to females and thus males possess more positive computer attitudes than their counterparts, females (Orr, Allen, & Poindexter, 2001). Loyd & Gressard (1984) concluded that there was a significant correlation between gender and computer attitudes, with males having more favourable attitudes than females. In addition, Jackson & Kutnick confirmed that males outdid females in several computer-based tasks. However, Webster (1992) reported that gender was not a steady predictor factor of computer attitudes.

2.2.2. The Age Factor

According to Kay (1990), age is regarded as one the most influential predictors of attitudes towards computers. Similar to the gender factor, studies showed mixed results. Jay and Willis (1986) found that younger people tend to possess more positive attitudes than older ones. Also, Nickell and Pinto (1987) concluded that there is a negative correlation between age and computer attitudes. On the
contrary, Anderson (1987) reported that age correlates positively with computer attitudes. Furthermore, Czaja and Sharit (1988) stated that older individuals feel less comfortable and less competent with the new technologies than those individuals who are younger. However, Rosen and Maguire (1990) revealed that there is not enough evidence to conclude that older people possess less positive attitudes towards ICT than younger ones.

2.2.3. The Teaching Experience Factor

As far as the third variable that has big impact upon ICT use in education which is teaching experience, Alaugab (2007) reported that there is a negative correlation between professors’ attitudes and their teaching experience. In other words, as the number of years spent in teaching increases, teachers’ positive attitudes towards computers in education decreases. Similarly, Alshehri (2005) noted that teaching experience has a great influence on teachers’ attitudes regarding the use of ICT for instructional objectives. On the opposite side, Alzamil (2003) concluded that there are not any significant differences between teachers with respect the variable of teaching experience.

2.2.4. The Computer Experience Factor

Another significant variable that is thought to affect computer integration in teaching is computer experience. Indeed, several researchers found that computer attitudes are positively correlated to computer experience. For instance, Loyd & Greesard (1984) reported that there was a negative significant correlation between computer anxiety and computer experience. In other words, they found that more years of using computers were correlated with lower levels of computer anxiety. Howard and Smith (1986) defined computer anxiety as “the fear of impending interaction with a computer that is disproportionate to the actual threat presented by the computer” (p.1) Furthermore, Sahin and Thompson conducted their study to examine the effect of computer experience on the use of computers. The authors concluded that lack of computer experience resulted in lower level of computer competency. The findings showed that teachers who were familiar with computers tended to be more competent, experienced and confident when using computers. In this respect, Kraut et al. (1996) reported that teachers with sufficient computer competency and appropriate computer experience are likely to possess more positive attitudes with regards to technology adoption in education. Therefore, the best way to promote professors’ integration of computer technologies is through increasing their computer skills (Dusick & Yildmir, 2000).

2.2.5. The Computer Ownership Factor

Noe (1986) stated that teachers who possess technological instruments have more positive attitudes than those who do not own them. Also, Geissler and Horridge (1993) found that people owning computer technological devices perceive themselves highly competent in all levels of computer use than those individuals who do not have computers. Therefore, encouraging teachers to integrate ICT for pedagogical objectives can be done through proving enough computers in the institutions where they teach.
3. Research Methodology

Methods of data collection involving questionnaires were employed to gather data from various participants. The data was collected employing both a paper-based instrument and an online questionnaire that was located at Google Drive Website https://drive.google.com, a software-programmer developed for the aim of constructing and implementing online survey questionnaires. The use of the online version of a survey instrument offers several advantages. First, it is less expensive than any of the other survey types. Second, it is an effective technique to enlarge the number of participants. Finally, web response buttons hamper erroneous data entry. (Wimmer & Dominick, 2000).

Computer Attitude Scale (CAS) that was developed by Loyd and Gressard (1984) was used to collect the necessary data. There were two main reasons behind choosing to employ this instrument in the present study. First, it was intended to measure teachers’ attitudes towards the adoption of the new technologies in the field of teaching. Second, its validity and reliability have been measured. According to Kitchenham & Pfleeger (2002), the use of existing instruments is conventional in survey research since these instruments have already been assessed in terms of validity and reliability. Actually, descriptive statistical analysis of means, frequencies, percentages and standard deviations was used to answer the first research question: what are professor’s attitudes toward the use of computer technology in teaching? Prior to carrying out the analysis, the scoring all of the negatively articulated statements included in the Computer Attitude Scale were reversed.

As for the participants in this study, approximately 387 teachers were summoned to take part. However, only 195 (50, 38 %) full-time and part-time English teachers agreed to respond to the survey. The researcher discarded 32 questionnaires which were incomplete since they had significant parts of the survey instrument missing. Thus, 163 (42, 11%) answered the questionnaire appropriately. Finally, the resulting sample size employed in this study was a total of 163 teachers working in various Moroccan higher institutions. Characteristic data about the participants are presented in figure 1 and Figure 2 below.
As shown in Figure 1, the total number of participants was 163. The majority of respondents who completed the survey indicated that their gender was male (n = 114), 69.9%. Of the remaining respondents, 49 (30.1%) stated their gender was male.

As displayed in Figure 2, more than three quarters of the respondents (n = 141; 86.5%) had greater than 6 years of experience with computer technology. The findings also showed that 6.7% (n = 11) had 4 to 6 years of experience using computers, 4.29% (7) had 1 to 3 years of experience with computer technology, and only 2.45% (n = 4) had less than one year of experience with the use of computers.
4. Findings and Discussion

The main purpose of the research question was to examine attitudes of Moroccan professors of English towards the use of ICT in teaching. The data regarding the attitudes was collected from the survey questions included in the survey questionnaire, “Attitudes toward the Use of Computer Technology”. This instrument addressing the attitudes was divided into four subscales: computer anxiety (items 1 to 5), computer confidence (items 6 to 10), computer liking (items 11 to 15), and computer usefulness (items 16 to 20). The participants were asked to specify their level of agreement or disagreement on a five-point Likert scale: Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, and Strongly Disagree = 1. High scores suggested positive attitudes regarding the integration of ICT in teaching while lower scores implied less favourable attitudes. In other words, number 5 indicated highly positive attitudes, 4 displayed positive attitudes, 3 referred to neutral attitudes, 2 showed negative attitudes, and lastly 1 suggested highly negative attitudes. Descriptive statistical analysis of percentages, means, and standard deviations was used to address this question. The results are presented in Table 1.

The findings regarding the first subscale revealed that the majority of respondents (93.8%) agreed with the first statement that computers did not scare them at all, whereas a minority (4.3%) indicated their disagreement with the statement. In response to the statement: “working with computers will make me feel nervous”, more than three quarters of the professors (90.8%) expressed their disagreement with the statement and only (5.5%) agreed with it. A large proportion of the participants (93.9%) noted that they did not feel aggressive and hostile toward computers while only (3%) stated that they did. Most respondents (81.6%) found that it wouldn’t bother them at all to take computer courses, whereas a minority (7.9%) pointed that it would. In response to the last statement included in the first subscale, more than two thirds (87.7%) of the respondents showed their disagreement with the statement that computers made them feel uncomfortable and only (7.7%) expressed their agreement with it.

As for the second subscale, the results displayed that almost all of the professors (96.3%) agreed with the statement that they were sure they could work with computers while a small proportion of them (3.1%) disagreed with the statement. The findings also revealed that more than three quarters strongly disagreed (46%) or disagreed (41.1%) with statement seven, “I am not the type to do well with computers”. A minority (9.8%) exhibited their agreement with this statement. In response to statement eight, “I am sure I could learn a computer language”, more than half (58.9%) of the respondents agreed. Only (9.8%) manifested their disagreement. Moreover, the majority of professors (86.5%) thought that using a computer wouldn’t be hard for them. A small proportion (9.8%) reported that it would. Three quarters (76.1%) of the participants indicated that they had a lot of confidence in regards to working on computers, while eleven percent noted that they did not trust themselves when working on these new technologies.
Responses to the third subscale showed that most of the respondents (89.6%) pointed that they would like working with computers. Only (7.4%) reported that they would not. Furthermore, about two thirds (64.4%) of the professors thought that working with computers would be enjoyable and stimulating, whereas 22.7% expressed their disagreement with this statement. In response to statement thirteen, the majority of participants (43%) agreed that when they had a problem with a computer, they would stick with it until they could solve it. On the other hand, 24.5% of the professors revealed that they would not fix it. Also, nearly half of the respondents (42.4%) reported that they would not find it hard to stop once they start working on computers, whereas (39.2%) stated that they would. Additionally, the majority of participants (82.2%) expressed their disagreement with statement fifteen, “I do not enjoy talking with others about computers”. Only (3.6%) showed their agreement.

Concerning the last subscale, the results revealed that nearly all respondents strongly disagreed (85.9%) or disagreed (12.9%) with the statement that learning about computers was a waste of time. Also, all participants (100%) reported that learning about computers was worthwhile. In response to statement eighteen, “I expect to have little use for computers in my daily life”, most respondents (70.5%) disagreed with the statement. Nearly (20%) announced that they anticipated integrating computers in their every day life. Besides, more than two thirds of the sample (71.2%) that knowing how to make use of computers would enlarge their job possibilities. Only (16%) affirmed that this knowledge would not increase their performance. Similarly, the majority of professors (78.5%) pointed out that working with computers would be important to them in their work. On the other hand, less than (10%) of the respondents stated that the use of computer technology would not be valuable in their job.

Table 1. Percent of Professors’ Attitudes toward Computer Technologies

<table>
<thead>
<tr>
<th>Attitudes toward Computer Technologies</th>
<th>SD %</th>
<th>D %</th>
<th>N %</th>
<th>A %</th>
<th>SA %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Computers do not scare me at all.</td>
<td>0.6</td>
<td>3.7</td>
<td>1.8</td>
<td>37.4</td>
<td>56.4</td>
</tr>
<tr>
<td>2. *Working with computers will make me very nervous.</td>
<td>55.8</td>
<td>35.0</td>
<td>3.7</td>
<td>3.7</td>
<td>1.8</td>
</tr>
<tr>
<td>3. *I feel aggressive and hostile toward computers.</td>
<td>62.0</td>
<td>31.9</td>
<td>3.1</td>
<td>1.8</td>
<td>1.2</td>
</tr>
<tr>
<td>4. It wouldn’t bother me at all to take computer courses.</td>
<td>1.2</td>
<td>6.7</td>
<td>10.4</td>
<td>50.3</td>
<td>31.3</td>
</tr>
<tr>
<td>5. *Computers make me feel uncomfortable.</td>
<td>63.8</td>
<td>23.9</td>
<td>4.3</td>
<td>5.5</td>
<td>2.5</td>
</tr>
<tr>
<td>6. I am sure I could work with computers</td>
<td>0.6</td>
<td>2.5</td>
<td>0.6</td>
<td>60.1</td>
<td>36.2</td>
</tr>
<tr>
<td>7. *I’m not the type to do well with computers.</td>
<td>46.0</td>
<td>41.1</td>
<td>3.1</td>
<td>8.6</td>
<td>1.2</td>
</tr>
<tr>
<td>8. I am sure I could learn a computer language.</td>
<td>0.0</td>
<td>9.8</td>
<td>31.3</td>
<td>54.4</td>
<td>13.5</td>
</tr>
<tr>
<td>9. *I think using a computer would be very hard to me.</td>
<td>46.6</td>
<td>39.9</td>
<td>3.7</td>
<td>8.0</td>
<td>1.8</td>
</tr>
<tr>
<td>10. I have a lot of self-confidence when it comes to working with computers.</td>
<td>1.2</td>
<td>9.8</td>
<td>12.9</td>
<td>62.0</td>
<td>14.1</td>
</tr>
<tr>
<td>11. I would like working with computers.</td>
<td>0.0</td>
<td>7.4</td>
<td>3.1</td>
<td>55.2</td>
<td>34.4</td>
</tr>
<tr>
<td>12. I think working with computers would be enjoyable and stimulating.</td>
<td>1.8</td>
<td>20.9</td>
<td>12.9</td>
<td>44.2</td>
<td>20.2</td>
</tr>
<tr>
<td>13. When I have a problem with a computer that I can’t solve, I</td>
<td>5.5</td>
<td>19.0</td>
<td>32.5</td>
<td>34.4</td>
<td>8.6</td>
</tr>
</tbody>
</table>
As mentioned earlier, the first research question intended to measure professors’ attitudes toward the integration of ICT in teaching practices. To provide a satisfactory answer to this question, means and standard deviations were computed as well. Therefore, so as to interpret the findings, mean scores above 2.50 suggested positive attitudes toward the use of ICT in teaching. The following scales were used: mean scores ranging from 2.50 to 2.99 indicated low positive attitudes. Mean scores ranging from 3.00 to 3.25 implied moderate positive attitudes. However, mean scores exceeding 3.25 described high positive attitudes regarding the implementation of ICT in teaching. Before conducting the analysis, the scoring all of the negatively articulated statements included in the Computer Attitude Scale were reversed. Table 2 provides means and standard deviations of participants’ attitudes toward computer technologies.

The findings revealed that the attitudes of professors toward the integration of ICT in teaching practices were positive, with an overall mean score of 4.09 and a standard deviation of 0.52. The results also manifested that the mean score of computer anxiety subscale (M = 4.36; SD = 0.59 ) was the highest among the four subscales, showing that the professors of English language had low degree of anxiety toward computer technologies. Also, the mean score for the respondents on the computer confidence subscale was M = 4.02 (SD = 0.62). This high mean score implied that professors possessed high confidence while integrating computers in their teaching. On the computer liking subscale, the mean score (M = 3.66; SD = 0.67) was also high indicating high level of professors’ computer liking. As for the subscale of computer usefulness, the mean score (M = 4.31; SD = 0.58) was high denoting that the respondents considered computer technologies highly useful.
Table 2. Means and Standard Deviation of Professors’ Attitudes toward Computer Technologies

<table>
<thead>
<tr>
<th>Attitude</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Anxiety</td>
<td>163</td>
<td>4.36</td>
<td>.59</td>
</tr>
<tr>
<td>Computer Confidence</td>
<td>163</td>
<td>4.02</td>
<td>.62</td>
</tr>
<tr>
<td>Computer Liking</td>
<td>163</td>
<td>3.66</td>
<td>.67</td>
</tr>
<tr>
<td>Computer Usefulness</td>
<td>163</td>
<td>4.31</td>
<td>.58</td>
</tr>
<tr>
<td>Total Attitude</td>
<td>163</td>
<td>4.09</td>
<td>.52</td>
</tr>
</tbody>
</table>

Note. 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly agree.
* = Negative statements that were reversed before scoring.

5. Conclusion

Based on the results from the overall mean scores of the total of attitudes, it can be concluded that professors of English have positive attitudes towards the use of computers in teaching environments. The positive attitudes that EFL teachers possessed with regards to computer technologies suggested that professors grasped the significance of implementing computers in education. The findings concerning professors’ attitudes were consistent with previous research studies, mainly Chin & Hortin (1994), Teo et al. (2008), and Braak (2001) who found that teachers who participated in their studies had favourable attitudes towards the adoption of technological instruments in instructional processes. Finally, computer technologies have been playing a considerable role in nearly every aspect of our daily life. Consequently, the need to integrate these new technologies in teaching has expanded dramatically. Yet, the use of Information and Communication Technology in higher institutions has faced several challenges related to the attitudes of teachers. Several studies reported that professors’ attitudes affected their adoption of these new tools in classrooms. This paper was successful in providing a description of the attitudes of Moroccan professors of English towards the use of ICT in universities.

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