DOI: 10.21276/sjhss

Saudi Journal of Humanities and Social Sciences **ISSN 2415-6256 (Print)**
Scholars Middle East Publishers **ISSN 2415-6248 (Online)**
Dubai, United Arab Emirates
Website: http://scholarsmepub.com/

Factors Influencing the Frequency of ICT Use in the EFL Classroom

Noureddine AZMI
Cadi Ayyad University Marrakesh, Morocco

***Corresponding Author:**
Noureddine AZMI
Email: azminoureddine@yahoo.fr

Abstract: Recent developments in computer and web technology have prompted new revolutionary ways of using Information Technology in English language teaching. While there is evidence of the usefulness of ICT in the Moroccan language classroom, a wide range of factors and challenges still inhibit the widespread introduction and use of the new technologies as basic tools of teaching, and deter EFL teachers from adopting them to maximize targeted learning outcomes. The findings from the research suggest that there is no clear link between independent variables (teachers' socio-demographic and substantive variables) and the frequency of ICT use in the Moroccan English language classroom. However, and though they are not statistically significant, gender and computer literacy show some effect.
Keywords: English language teaching, ICT, Factors and challenges

INTRODUCTION

A large number of EFL instructors nationwide have committed themselves to some form of computer technology initiative, and the number may be increasing. Moroccan educational authorities have recently considered several plans of instructional technology that range from simple computer software to much more advanced and sophisticated web applications. However, and against the background of the perceived appropriateness of ICT to the Moroccan English language classroom, the crucial question is: why are these technologies, given their usefulness, not yet commonplace in all English language classrooms? There seems to be then a wide range of factors and challenges that inhibit the widespread introduction and use of the new technologies as basic tools of teaching and deter EFL teachers from adopting and using them to optimize English language teaching and maximize targeted learning outcomes.

The purpose of this research study is to identify and examine frequently occurring factors affecting the implementation of information technology in the language classroom. Many studies about how ICT is used in the language classroom have shown that although there have been many cases of successful and effective integration of information technology, there is still a wide range of factors that inhibit the widespread introduction and implementation of the new technologies as basic tools of teaching and learning in the language classroom.

Research studies from different settings indicate that ICT is not fulfilling its potential to ensure significant changes in language teaching and learning. It is either not used, or is being implemented without the required appropriate methodology and pedagogy. The common belief is that information technology is most often used alongside traditional classroom practices and is not fully incorporated into classroom learning activities. This reveals a set of attitudes and factors that prevent teachers from fully implementing ICT and making the most of its potential. Reviews of different studies and research devoted to the investigation of ICT use in the language classroom show that attitudes, training, availability of ICT material and classroom challenges are among the factors that determine the implementation of ICT in schools throughout the world [1-10].

RESEARCH PROBLEM

The last reforms of the Moroccan educational system have introduced a new set of strategies and measures that challenge the old paradigms of teaching and call for the implementation of more innovative methodologies. However, investments in information technology have been reduced to investments in hardware as if investing more in computer technology would ensure a more optimal integration of technology in the language classroom. Most teachers were left alone to face technical, methodological and pedagogical challenges and difficulties. Regardless of how computer literate they are, they have been urged to teach English using ICT with a particular focus on interactive web applications, supporting a whole project founded on biased perceptions that either claim benefits or warn against barriers and pitfalls. The target populations are classes of "digital native" [11] students with a relatively advanced computer literacy.

The ultimate research objective is to identify the factors that determine the frequency of ICT use in ELT classes and determine the extent to which it is implemented and incorporated in the Moroccan English language classroom. The two following research questions are used to help articulate the investigation.

Q1-To what extent do teachers' socio-demographic variables (age, gender, teaching experience, computer ownership and Internet access) determine the frequency of ICT use in the Moroccan English language classroom?

Q2-To what extent do substantive variables (computer literacy, availability of ICT material, personal use of ICT and perceptions of potential barriers) determine the frequency of ICT use in the Moroccan English language classroom?

REVIEW OF LITERATURE

Rogers' Diffusion of Innovations theory

The way teachers perceive information technology shapes their attitudes and determines the implementation of digital tools in the language classroom. Rogers [12] identified 5 attributes of innovations that explain why certain innovations were successfully and widely adopted while others were not. The five attributes of innovations and their implications and relevance for ICT integration in the classroom include "relative advantage", "compatibility", "complexity", "triability" and "observability".

An overall assessment of Rogers' Diffusion of Innovations theory and its relevance to ICT adoption in the EFL classroom shows that potential users should be aware of the advantages of the targeted innovations in the classroom and their utility and usefulness to the teaching of the language (relative advantage). Most important is the compatibility of technologies with existing practices in the classroom (compatibility; complexity) and ease of use and implementation (triability). If teachers fail to observe the advantages of the use of information and communication technologies and the difference they can make in the EFL classroom, and face challenges and barriers while attempting to implement them, there is a higher probability that they would show less enthusiasm and commitment (observability). Rogers' Diffusion of Innovations theory provides a framework for the presentation and evaluation of all possible factors that may determine ICT use and implementation in the foreign language classroom. Possible factors include attitudes, ICT training, availability of ICT material in the work place as well as classroom challenges and limitations.

Attitudes and perceptions

Teachers' attitudes towards information technology may be a significant factor that determines its implementation in the English language classroom. Murray *et al* [3] claims that teachers have shown different attitudes towards the use of information technology in language education. He states that "Teachers have reacted to the introduction of ICT in a number of ways: fear of becoming redundant, resistance of having to learn new ways of teaching, concern about learning the technology, uncertainty about whether the technology will dominate pedagogy" (p.40). Such ambivalent and mostly negative attitude towards the implementation of ICT in the language classroom is likely to deter teachers and discourage them from taking any initiative to digitalise their courses.

The first key factor that determines teachers' use of ICT in the classroom is what Chen [7] refers to as 'Perceived capability'. He argues that "Not all teachers perceive that they are capable of using Internet tools. Perceived capability refers to one's perception of one's capability to use the Internet" (p.60). He insists that teachers' previous computer and Internet experiences determine their use of the Internet in the classroom. When teachers become aware of the relative benefits of instructional information technology, they are more likely to try innovative practices in the language classroom. This is a good illustration of "Relative advantage" which is an essential component of Rogers' Diffusion of Innovations theory. Teachers' perception of the uncertainty and the difficulties that they may encounter while attempting to integrate ICT in their teaching is accentuated by their feeling that their students may perform better when it comes to technology use and implementation in the classroom. Evans, C. (2009) explains this attitude when she argues that "One of the biggest ICT related anxieties for many teachers, new and established, is that pupils' knowledge of technology will exceed their own. This can result in some teachers avoiding ICT use almost completely." (p.184)

Satya [9] holds the same view and explains that any attempt from students to question or challenge teachers' knowledge and presence in the classroom is not tolerated. Teachers are more likely to reject any tools that may empower students and make them look more adept. The relationship between the teacher and their students is subject to change. Some students may actually handle technology better than their teachers do. This is an extension of the third component of Rogers' Diffusion of Innovations theory "Complexity" which is the degree to which an innovation is perceived as difficult to understand and use. Simplicity and ease of use would encourage more teachers to integrate ICI in their teaching.

The dynamic nature of information technology and the Internet in particular may also be a good reason

for many teachers to maintain this negative attitude towards the use of ICT in the classroom. Blake [6] argues that the fact that information technology is constantly changing constitutes a frightening barrier for many foreign language professionals who fear they cannot possibly keep pace with new advances and innovations to be used in the language classroom.

Calls for the use and integration of ICT in the English language classroom presuppose then an exchange of roles and more power sharing between teachers and students. This requires the implementation of new paradigms and approaches to teaching. Teachers have to accept and acknowledge that students can also be providers and producers of knowledge and are able to take care of their own learning. Lee, C. [13] backs up this shift in roles when she argues that "One critical factor, above all, is the change of culture among students, teachers and parents. The teacher does not have to be the only knower and knowledge provider in the classroom." (p. 40)

Relative advantage and environmental concerns can also affect ICT use in the language classroom. Chen [7] explains that class sizes are usually large in Taiwanese educational settings, so the use of hardcopy documents has long been a burden for institutions, teachers, and the environment. The advantages of using electronic documents show that teachers can save paper for notes and handouts and share good materials without having to make lots of copies. Resistance to change has been a factor that deterred teachers from using ICT in the classroom. Teachers who did not realise the advantages and benefits of ICT use were less likely to use ICT material in their teaching [4]. This is an extension of Rogers' Diffusion of Innovations theory and how "Relevant advantage" determines the rate of adoption of innovations and technologies. Teachers should be aware of the positive changes that these technologies can bring into the EFL classroom to maintain a minimum level of enthusiasm and commitment and ensure more engagement.

Training and digital literacy

A growing concern that has actually generated considerable controversy is whether training and computer literacy determine ICT use in the language classroom [4, 7, 8, 10]. A common belief is that teachers who have received training are more likely to incorporate ICT in their class delivery than teachers who have not received any training. A review of a set of research-based studies would help show the extent to which this belief is true. Findings from different studies indicate that the most significant issues that impede teachers' use of instructional technology are teachers' proficiency, lack of time among instructors to learn and be trained, and lack of good quality materials.

Whether it is initial training or in-service training, meeting teachers' needs and expectations present a big challenge taking into account the rapidly changing nature of information and communication technologies. Training must be repeated and updated as technology and web applications change. Moreover, some trainees may just need to learn how to use a word processor and email; while others would like to know how ICT use can be applicable to course content as well as the appropriate teaching pedagogies and methodologies they should use. Learning technological skills is not enough. Participants need to be introduced to pedagogical knowledge and practices for ICT integration in the language classroom. The multidimensional nature of training has then made of it a substantial burden that requires a full involvement of teachers and a broader dependence on personal initiatives and potentials.

In an investigation of teachers' use of computers in teaching English, Darus [10] has found that English language teachers rarely used computers to teach because they were not adequately trained and felt incompetent and uncomfortable. This has made them develop negative attitudes towards the implementation of ICT in the language classroom. However, the research study has also shown that there is no clear link between the amount of training and the actual use of computers in the classroom.

Kumar *et al* [8] has equally highlighted the importance of training and recommended that school principals should provide names of teachers who actually need training to be able to meet their needs and help them teach effectively using ICT. Chen [7] has similarly demonstrated the importance of training and found that training is crucial for technology integration in foreign language teaching. Teachers who obtained a technology degree found it much more comfortable and easier to use ICT materials compared to other EFL teachers. Jones [4] has, in turn, identified a set of barriers to the implementation of ICT in teaching. He included training styles as a major factor that determines ICT use by school teachers.

The third component of Rogers' Diffusion of Innovations theory, complexity of an innovation, is one more time relevant here. When teachers are not trained enough to use ICT materials and able to cope with technical difficulties and challenges that they may encounter in an ICT-enabled teaching environment, they are less likely to adopt the technology and may even develop negative attitudes towards its use and implementation in the language classroom.

Training may be crucial to ICT implementation in the EFL classroom. However, most training programmes focus only on ICT skills and tools; whereas a successful implementation of ICT in the language classroom requires the combination of both technological knowledge and appropriate methodological approaches to ICT-aided English language teaching. The problem should immediately be addressed; otherwise, the unavailability of appropriate training will always impede an optimal implementation of ICT in the EFL classroom.

Availability of ICT material in the work place

Research has also considered the availability of ICT material as a variable that may substantially affect the use of information technology in the language classroom. Many researchers have identified inappropriate access to hardware and software as a potential barrier that may prevent teachers from integrating ICT in their instruction. Blankenship [14] has, through an investigation of major barriers to computer use, concluded that the unavailability of computers and the quality of available software were among the recurring barriers listed by the survey respondents.

Kurina [1] has similarly found that the limited access to resources and lack of adequate technical support were among the obstacles that hindered teachers' use and implementation of ICT for teaching purposes. Such an argument is also advanced and maintained by other researchers. Pelgrum [2] has found that the failure to equip schools with a sufficient number of computers and to update school teachers with the required knowledge and skills were the major reasons for the unsuccessful implementation and use of computers in schools. Moreover, and in a report submitted by Jones [4] on the barriers that deter teachers from making full use of ICT, it was noted that levels of access to ICT determined teachers' use of ICT to support classroom learning. One more relevant study is the one conducted by Yunes [15]. It has revealed and maintained the same results. The key factors that determine an optimal implementation and integration of ICT in Malaysian technical schools were adequate access to technologies and adequate computer resources.

More research studies have revealed the importance of the availability of material to ICT use and implementation in the EFL classroom. Kumar *et al* [8] has found that teachers are not capable to use information technology material probably because of the unavailability of adequate infrastructure and material. Hence, it is recommended that teachers have access to technology. The recommendations insisted that more computer laboratories should be built in schools. This could be achieved through private partnerships with other community and business organisations. The same argument has also been advanced by Darus [10] who has, in turn, investigated teachers' use of computers in teaching English and found that English language teachers faced many challenges that deterred them from fully utilizing the computer. These problems are availability of limited software in the school and lack of knowledgeable personnel or technicians on-site for computer maintenance as well as the provision of technical support to teachers.

However, and ironically enough, research has also shown that in spite of the availability of instructional technology as well as the support from the administration and teacher's awareness of the positive impact of technology on second language teaching, teachers do not make a full use of technology in the language classrooms [5]. Moreover, Cabero, Duarte and Barroso [16] acknowledge that nowadays, there is a paradox in the fact that these technologies are abundantly available and accessible. On the other hand, common educational and classroom practices still depend on two basic tools: the textbook and the teacher as sole transmitters and providers of knowledge and class content.

Samuel and Abu Bakar [17] from the University of Malaysia conducted a study on ICT integration in English language teaching and learning and concluded that lack of infrastructure facilities is only one of the barriers to ICT integration and even if the infrastructure facilities were to be provided and increased, there would be little chance that the situation will change. This implies that there are far more other issues and concerns that should be addressed to ensure a better implementation and use of ICT in the language classroom.

While it true that the unavailability of ICT equipment and appropriate training may hinder the process of incorporating information technology in English language teaching; there is no hard research evidence that the availability of ICT material in the work place and the provision of training programmes would bring about a positive change and ensure an optimal implementation of ICT in the language classroom. Research shows that even when teachers receive training and have access to ICT material, they are not always ready to use it in the classroom. This implies that there are other more serious and unknown issues that should be addressed.

RESEARCH METHODOLOGY

A quantitative case study, which is an intensive analysis of an individual unit stressing developmental factors in relation to a context, has been chosen to see if there is a causation relationship

between the targeted variables. Thus, a questionnaire is used as a research tool to investigate the factors and attitudes that determine the frequency of ICT use in English language teaching. To look for possible relationships between variables and determine whether the dependent variable is influenced by any of the possible independent variables, a common technique to use is the cross-tabulation of a dependent variable with an independent variable to determine whether causal associations exist (Fisher, 1996). The purpose of using the Chi-square test is to statistically determine if a relationship exists between two nominal variables.

RESULTS AND DISCUSSION

The investigation of teachers' use of ICT in the English language classroom shows that there are five possible independent socio-demographic variables (gender composition, age group, teaching experience, computer ownership and Internet access) and four more independent substantive variables that characterise the general behaviour patterns of the respondents (Personal use of ICT, availability of ICT material in the workplace, computer literacy and perceptions of potential barriers to ICT use in the language classroom). The dependent variable is the frequency of ICT use in the English language classroom.

Relationship between socio-demographic variables and the frequency of ICT use in the EFL classroom

Frequency distribution of socio-demographic variables shows that there are relationships between cross-tabulated variables: the dependent variable (The frequency of ICT use in the language classroom) and independent socio-demographic variables (age group, gender composition, teaching experience, computer ownership and Internet access). In few cases, the observed patterns from cross-tabulations reveal unexpected but inconsistent outcomes. Against the popular presumption that younger professionals are much more motivated and trained to use ICT in the language classroom, it is noticed that a big majority of the respondents whose age is > 40 years use ICT more frequently to prepare class courses; while only about half of the respondents whose age is ≤ 40 years do so more frequently. Half of the respondents whose age is ≤ 40 years use ICT more frequently in the language classroom to support learning; while only less than a third of the respondents whose age is > 40 years do so more frequently.

When teaching experience is cross tabulated with ICT use in the English language classroom the observed patterns suggest similar outcomes. The respondents, whose teaching experience is > 20 years, use ICT more frequently to prepare class courses but use ICT less frequently in the classroom to support learning when compared to respondents whose teaching experience is ≤ 20 years. The observed patterns from cross-tabulations of the gender composition with ICT use in the English language classroom reveal that male respondents' use of ICT is more frequent than that of their female counterparts both in class course preparation and in classroom use to support learning. But are these differences big enough to conclude that age, gender and teaching experience play a role in determining the frequency of ICT use in the English language classroom? Only the implementation of the Chi-Square test will show if there are any significant relationships between the cross-tabulated variables within an only 5% margin of error.

When sample sizes are small, as indicated by more than 20% of the contingency cells having expected values ≤ 5, a Fisher exact test outcome included in the Chi-square results is more appropriate to consider. The results of the Fisher exact test from all cross tabulations of socio-demographic variables with the frequency of ICT use in the English language classroom indicate that there is no statistically significant relationship between variables (See table 1).

Table 1: Group results: Relationship between socio-demographic variables and ICT use

Independent socio-demographic variables	Dependent variable
1-Age group	Frequency of ICT use in the EFL classroom Purpose of ICT use 1* (p- value = 0.643 > 0.05) Purpose of ICT use 2* (p- value = 0.417 > 0.05)
2- Gender composition	Frequency of ICT use in the EFL classroom Purpose of ICT use 1*(p- value = 0.195 > 0.05) Purpose of ICT use 2* (p- value = 0.419 > 0.05)
3-Teaching experience	Frequency of ICT use in the EFL classroom Purpose of ICT use 1* (p- value = 0.643 > 0.05) Purpose of ICT use 2* (p- value = 0.417 > 0.05)
4-Computer ownership	Frequency of ICT use in the EFL classroom Disregarded and excluded from cross-tabulations since Computer ownership is a constant variable
5-Internet access	Frequency of ICT use in the EFL classroom Disregarded and excluded from cross-tabulations since Computer ownership is a constant variable

*Purpose of ICT use 1: Using ICT to prepare class content
*Purpose of ICT use 2: Using ICT to support learning in the classroom.

Relationship between substantive variables and the frequency of ICT use in the EFL classroom

Frequency distribution of substantive variables shows that there are associations between cross-tabulated variables: the dependent variable (Frequency of ICT use in the language classroom) and independent substantive variables (Personal use of ICT, availability of ICT material in the workplace, computer literacy and perceptions of potential barriers). In many cases, the observed patterns from cross tabulations reveal inconsistent outcomes. For example, the respondents with inadequate personal use of ICT use ICT more frequently to prepare class content than their counterparts with a relatively adequate personal use of ICT, but less frequently use ICT in the language classroom to support learning. Likewise the respondents from schools with Internet connection use ICT more frequently to prepare class courses than their counterparts from schools without Internet connection but less frequently use ICT to support learning in the classroom.

When training and computer literacy variables are cross tabulated with ICT use in the English language classroom, the observed patterns suggest significant relationships between variables. The respondents with an adequate computer literacy more frequently use ICT to both prepare class courses and support learning in the classroom than their counterparts with less adequate computer literacy. Likewise the respondents who received an ICT training more frequently use ICT to prepare class courses and support learning in the classroom than their counterparts who did not receive ICT training.

The observed patterns from cross tabulations of perception of potential barriers with the frequency of ICT use in the English language classroom suggest that there are slight differences between the respondents who admit that there are barriers to ICT use in the language classroom and those who do not when it comes to ICT use to prepare class content and support learning in the classroom. But are these differences significant enough to conclude that Personal use of ICT, availability of ICT material in the workplace, computer literacy and perception of potential barriers play a role in determining the frequency of ICT use in the English language classroom? The results of the Fisher exact test from all cross tabulations of substantive variables with the frequency of ICT use in the English language classroom indicate that there is no statistically significant relationship between variables. The *p* value has always scored higher than 0.05 (See table 2).

Table 2: Group results: Relationship between substantive variables and ICT use

Independent substantive variables	Dependent variable
1- Personal use of ICT	Frequency of ICT use in the EFL classroom Purpose of ICT use 1 (p- value = 0.682 > 0.05) Purpose of ICT use 1 (p- value 0.248 = > 0.05)
2- Aavailability of ICT material in the workplace - Computer room - Internet availability	Frequency of ICT use in the EFL classroom Purpose of ICT use 1 (p- value = 0.688 > 0.05) Purpose of ICT use 2 (p- value = 0.687 > 0.05) Purpose of ICT use 1 (p- value = 0.226> 0.05) Purpose of ICT use 2 (p- value = 0.919 > 0.05)
3- Computer literacy - Training - Computer literacy	Frequency of ICT use in the EFL classroom Purpose of ICT use 1 (p- value = 0.384> 0.05) Purpose of ICT use 2 (p- value = 0.702 > 0.05) Purpose of ICT use 1 (p- value = 0.102 > 0.05) Purpose of ICT use 2 (p- value = 0.626 > 0.05)
4- Perception of potential barriers	Frequency of ICT use in the EFL classroom Purpose of ICT use 1 (p- value = 0.1000> 0.05) Purpose of ICT use 2 (p- value = 0.1000 > 0.05)

*Purpose of ICT use 1: Using ICT to prepare class content
*Purpose of ICT use 2: Using ICT to support learning in the classroom.

CONCLUSIONS

Research findings have revealed that there is no correlation between independent socio-demographic variables (teachers' age, gender, teaching experience, computer ownership, Internet access) and the frequency of ICT use in the Moroccan English language classroom. Research has also shown that there is no clear link between independent substantive variables (personal use of ICT, availability of ICT material in the workplace, computer literacy and perceptions of potential barriers) and the frequency of ICT use in the Moroccan English language classroom. However, and though they are not statistically significant, gender and computer literacy show some effect.

A growing number of EFL teachers use ICT material to prepare class content, but when it comes to the use of ICT in the classroom to support learning,

fewer teachers volunteer to do so. This implies that EFL teachers are more likely to face challenging barriers in the classroom. The observed patterns from cross tabulations of socio-demographic and substantive variables with the frequency of ICT use in the English language classroom alongside the Chi-square test outcomes show that there are no factors that determine ICT integration in the language classroom. This reveals that personal initiatives can always make a difference and increase the number of potential adopters. However, initiatives need to be institutionalised for a more possible widespread consideration of ICT in the Moroccan school.

Essential too, is providing opportunities for use and implementation of information technology in the language classroom in order to boost teachers' confidence and enhance their experience. This applies to institutions as well as to individuals. The findings indicate that gender and training show some effect though they are not statistically significant. Therefore, ICT literacy should become an academic requirement for candidates planning to enter teacher training schools; and training should focus more on how ICT can be applicable to course content.

REFERENCES

1. Kurina, L. (2000). *A study into the professional views and needs of science teachers in primary and secondary schools in England*. London: King's College.
2. Pelgrum W. J. (2001). Obstacles to the integration of ICT in education: results from a worldwide educational assessment. *Computers & Education, 37* (2001), 163–178.
3. Murray, D. E. (2005). *Information technology and innovation in language education.* In Davison, C. *(E.d.)* Hong Kong: Hong Kong University press.
4. Jones, A. (2004). A review of the research literature on barriers to the uptake of ICT by teachers. *BECTA ICT Research*. OAI identifier: oai: dera.ioe.ac.uk:1603
5. Naimova, V. (2008). *Factors affecting the implementation of instructional technology in the Second Language classroom.* Brigham: Brigham Young University.
6. Blake, R. J. (2008). *Brave New Digital Classroom: Technology and Foreign Language Learning.* Washington, D.C: Georgetown University Press.
7. Chen, U. L. (2008). Factors Influencing Internet Use in Teaching English: A study of EFL teachers in northern Taiwanese higher education institutions. Available online at http://www.asian-efl-journal.com/pta_May_08.pdf
8. Kumar, N. (2008). Factors Influencing the Effective Use of Technology among Malaysian Teachers', *European Journal of Social Sciences* 6(4), 108-124.
9. Satya, R. K. (2008). *Modern Methods of Teaching English*. New Delhi: A P H Publishing corporation.
10. Darus, S. (2010). Investigating Teachers' use of Computers in Teaching English: A Case Study. *Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia.* Available online at http://www.academia.edu/1637656
11. Prensky, M. (2001). *Digital Natives, Digital Immigrants.* In *On the Horizon*. Lincoln: NCB University Press.
12. Rogers, E. M. (1995). *Diffusion of innovations.* (4th ed.). New York: The Free Press.
13. Lee, C. (2005). *Web-based Teaching and English Language Teaching: A Hong Kong Experience*. Hong Kong: The Chinese University Press of Hong Kong.
14. Blankenship, S. E. (1998). Factors Related to Computer Use by Teachers in Classroom Instruction. A dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University in partial fulfilment of the requirements for the degree of Doctor of education. Available online at http://scholar.lib.vt.edu/theses.
15. Yunus, M. (2007). Malaysian ESL teachers' use of ICT in their classrooms: expectations and realities. *ReCALL, 19*(1), 79-95.
16. Cabero, J., Duarte, A., & Barosi, J. (1997). *La piedra angular para la incorporation de los medios audiovisuales, informaticos y neuvas tecnologias en los contextos educativos : la formation y el perfeccionamiento delprofesorado. Edutec.* Revista Electronica de tecnologia educativa, 8. In Maria del Mar Camacho Marti (2006) PhD Thesis. Universitat Rovira I Vorgili, Spain
17. Samuel, R. J., & Abu Bakar, Z. (2006). The utilization and integration of ICT tools in promoting English language teaching and learning: Reflections from English option teachers in Kuala Langat District, Malaysia. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), 2*(2), 414.