ICT in Algerian Education: Current Trends and Future Challenges

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Abstract
The use of information and communication technology in education lends itself to more student-centred learning settings often this creates some tensions for some teachers and students. But with the rapid movement of the world into the information society, the role of ICT in education is becoming more and more important and its development will be continued through distance learning. It is one of the most rapidly growing fields of education which is becoming accepted and indispensable in the educational system in both developed and developing countries. The aim of this article is to shed some light on the introduction of ICT in the Algerian education. To do so, a case study was undertaken at the University of Tlemcen. The main results obtained from both a questionnaire addressed to EFL students and a semi-structured interview with teachers in the English department were analysed quantitatively and qualitatively. The main conclusions drawn insisted the idea of the importance of integrating ICT in higher education. This -of course- under the condition of well preparing the ground for the integration.

Key words: Algeria, education, EFL, ICT
Introduction
Information and communication technologies (ICT) have become commonplace entities in all aspects of life. Education is one of these aspects. Within education, ICT has begun to have a presence but the impact has not been as extensive as in other fields. Additionally, the quality of education has traditionally been associated with strong teachers having higher degrees of personal contact with learners; whereas, in today’s information age, learning is no longer confined within the four walls of a classroom. The instructor armed with a textbook, is no longer the sole source of educational experience. Information resources are everywhere, often separated from the learner by time and space.

The above mentioned criteria motivated the present case study. The main objective behind this is answering the following research questions:
1. How do EFL students perceive the use of technology in their classes?
2. What are difficulties both teachers and students encountered during the use of ICT?

When it comes to the whole paper it will be divided in to the following section. Section one is a review of literature about the integration of ICT in education in general and EFL context in particular. Section two will highlight the used methodologies for both data collection and analysis as to the main results and conclusions.

1. Literature Review
Algeria is encouraging and promoting the use of Information and Communication Technology (ICT) to improve the development process in general and the educational system in particular. This is being done through paving the way for an ICT framework besides an implementation strategy. The government has emphasized on developing an ICT-related human resources. Algeria has also created a committee responsible of defining the elements of an Algerian national information society strategy. This was done as a response to the worldwide emerging knowledge and information society. It is anticipated that the committee will work on creating synergies among the different sectors in the area of:

- Infrastructure including, for instance, roads, water supply, sewers, and telecommunications.
- Training, research, as well as, information systems and ICTs.

The committee will identify a national ICT working group, which will be charged with formulating short-, medium-, and long-term action plans for ICT- usage.

1.1. The Algerian Educational System
The Arabian Campus Web site (1) describes the Algerian educational system as follows:

Primary education is mandatory and lasts for nine (9) years (École fondamentale which ceased in 2003 with the new educational reforms). Whereas in today’s Algerian’ primary school, education lasts for five (5) years. Middle school lasted four (4) years with the new reforms. Secondary education which is obligatory and consists of three-year cycle of study provided in secondary schools and technicums.

There are three branches of secondary education: general, specialized, and technical/vocational. Students in both general and specialized secondary education study for three years and sit for the “Baccalauréat” examination. This gives access to higher education but some institutions require it to be of a certain stream (science, arts, etc.).
The main objective of technical and professional secondary education is to prepare students for dynamic life and workplace needs (technicians and skilled workers). Higher education is provided by universities, specialized and national institutions of higher education which fall under the responsibility of the ministry of higher education and scientific research. The specific degrees awarded are defined by the field of study, not the institution. The Ministry of Higher Education approves the curriculum, which is consistent for each field of study. The Algerian institutions also award post-graduate degrees (magister& doctorat) in most fields in which a License or DES is awarded.

1.2. ICT Policies in Algeria

The Algerian government gives the ministry of post and information technology the responsibility of implementing and managing the national ICT policy (2). At the same time the government has also initiated collaboration with a number of worldwide agencies to develop the ICT standing in the country. For instance, in 2002 the World Bank co-operated with the ministry of post and information technology to develop and implement projects for the creation of the enabling environment and humanizing admission to ICT while making it reasonable for all.

Table 1 provides an idea about the state of national ICT infrastructure in Algeria (3).

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone – main lines in Use</td>
<td>2.572 million (2005)</td>
</tr>
<tr>
<td>Internet users</td>
<td>1.92 million (2005)</td>
</tr>
<tr>
<td>Radio broadcast stations</td>
<td>AM 25; FM 1; shortwave 8 (1999)</td>
</tr>
<tr>
<td>Television broadcast stations</td>
<td>46 (plus 216 repeaters) (1995)</td>
</tr>
</tbody>
</table>

The level of ICT integration is still constant and at an early stage. In 2000 a regulatory law was passed where the old public institution in charge of domestic telecom was split into two commercial organizations. The law also created an independent regulatory authority of posts and telecommunication. Presently there are three operators: Algerian Telecom represented by mobile and fixed lines, Orascom including Djezzy and Lacom for fixed lines, and Alwatanya with its tow agencies: Nedjma and internet access with mobile phones.
ICT in Algerian Education: Current Trends and Future Challenges

Abdelkader

In 2003, the country launched a program to ensure access to ICT through making computers available for every home initiative. Some forms of media, such as radio and television, have achieved high diffusion rates. Mobile phones are ordinary and the number of Internet users increase rapidly. This is due to the number of Internet cafés, shops, and access centres that are available, particularly, in urban areas.

To facilitate the entry of Algeria into the information society, the following national ICT initiatives have been designed:

- The project of the Ministry of Education to equip all schools with computers by 2005.
- The distance Education Project.
- The Virtual University Project
- The research network to be put in place by the Ministry of Higher Education and Scientific Research.
- The health network developed and maintained by the National Health Development Agency (ANDS).
- The Djaweb Internet platform.

1.3. ICT Environment in Algerian Education

The government is dedicated to set forth a plan for the integration of ICT within the educational system. The restructuring of the educational process and addition of ICT with a set structure was formally included in the country’s formal ICT policy in June 2002 with a portion of three billion dinar.

The Ministry of Education is working on constructing the infrastructure to facilitate an ICT environment. All secondary schools were equipped with computer labs (15 computers: 10 for students, five for teachers) connected to the Internet through ADSL, and 30% of this establishment had Internet access. On the other hand, half of the middle schools adopted ICT as a fundamental part of the educational programme.

In the case of the primary schools, the ICT strategy remains partial to the administration and teacher training. The existence of computer labs at primary schools remains subject to local contributions and by parents and community members’ contributions. When it comes to higher education, all universities have computer labs and Internet access for faculty, students, and administration in addition to the availability of digital libraries.

Each university has developed its own ICT policy to enhance and accelerate the educational progression. The purpose is offering enhanced learning opportunities in either virtual, distance or open universities. When it comes to the stage of preparing a framework enhance the level of ICT access and practice in education, the Algerian government has signed some agreements with international organizations. For example, UNESCO which is responsible of a number of initiatives for the proper integration of ICT in the Algerian education system and the Japanese government has provided funding for teacher-training programs totalling to $750,000.

There are a number of initiatives that have been adopted as an attempt to improve the quality of teaching and learning (Hamdy, 2007). The related strategies, under the heading of e-learning, were set forth to:

- Promote the development of e-learning resources.
ICT in Algerian Education: Current Trends and Future Challenges
Abdelkader

- Facilitate public-private partnerships to mobilise resources in order to support e-learning initiatives.
- Promote the development of integrated e-learning curriculum to support ICT in education.
- Promote distance education and virtual institutions, particularly in higher education and training.
- Promote the establishment of a national ICT centre of excellence.
- Provide affordable infrastructure to facilitate dissemination of knowledge and skill through e-learning platforms.
- Promote the development of content to address the educational needs of primary, secondary, and tertiary institutions.
- Create awareness of the opportunities offered by ICT as an educational tool to the education sector.
- Facilitate sharing of e-learning resources between institutions.

1.4. Training Professionals on Teaching and Usage of ICT in Algeria
In Algeria, the programme of ICT training devoted to teachers has been limited to the necessary information, with nearly everyone receiving 30-60 hours of training. Although 100% of secondary school teachers and 60% of middle school teachers have received the basic ICT training, this has to date been recognized very slight impact on the quality or technique of delivery of education in the classroom. Major training components to develop an ICT skill for the Algerian teachers are:

- Basic ICT training: basic operations, Windows-based software, e-mail, and Internet
- Intermediate training: classroom applications, Internet for teaching, and e-mail as a means for communication and collaboration
- Advanced training: development and design of educational software, on-line classes, telecommunication, e-mailing, development of interactive Web sites, construction of multimedia presentations, producing creative work

2. Methodology
This part describes the research design, approaches, and procedures. It will do so by giving the rationale behind using the case study. Then an overview of the quantitative and qualitative approaches is provided. This is followed by a full description of the combination method i.e. both qualitative and quantitative approaches used in this study to analyze the obtained data. To do so, semi-structured interview and questionnaire will be use as instruments.

2.1 Research Design
This research was conducted under the umbrella of the case study research design. The reason for choosing this type of research is that it focuses on understanding the phenomenon - in this case the use of video conference in higher education- within its natural settings. In addition, it is the most common qualitative method used dealing with information systems (Myers, 2003).

Case study, as defined by Yin (1994), Eisenhardt (1989), and others, has well-defined steps. However it is significant, at this level, to note down that it does not involve the use of a particular sort of evidence. Yin (1994) lists six most important sources of evidence: documents,
archival records, interviews, direct observation, participant observation, and physical artifacts. Additionally, it can be accomplished using quantitative and/or qualitative methodologies. A frequent confusion is that case studies are solely the result of ethnographies or of participant observation (Yin, 1981).

2.2 Research approach
The present study opts for a combination of quantitative and qualitative methods regarded as a worthy method in improving understanding. In practice, both methods are frequently considered to be appropriate within a single investigation. It is up to the researcher to choose specific methodologies which will allow him to obtain a somehow clear understanding of the topic.

2.2.1 Qualitative approach
Qualitative research uses a naturalistic approach that seeks to understand phenomena in context-specific settings, such as real world setting where the researcher does not attempt to manipulate the phenomenon of interest (Patton, 2001: 39). This approach is roughly defined as "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (Strauss and Corbin, 1990: 17). Instead, it is the kind of research that produces findings arrived from real-world settings where the "phenomenon of interest unfold naturally" (Patton, 2001:39).

2.2.2 Quantitative Approach:
 Unlike the qualitative approach, quantitative research is grounded in the positivist social sciences paradigm, which primarily reflects the scientific method of the nature sciences (Creswell, 1994; Jennings, 2001). According to Noonan (1994), researchers who adopt a more deductive approach use theory to guide the design of the study and the interpretation of the results. They are likely to abstract data from the participants into statistical representations rather than textual pictures of the phenomenon. This means that the entire research process is objectively constructed and the findings are usually representative of the population under investigation. Its main strengths are precision and control. Control is achieved through sampling and design, whereas precision is seen in the reliable quantitative measurement.

2.3 Data Collection
Data collection is an essential component to conducting research. It is, generally, conceived as complicated and hard task. This is why O’Leary (2004:150) remarks: “Collecting reliable data is a hard task, and it is worth remembering that one method is not inherently better than another. This is why whatever data collection method to be used would depend upon the research goals, advantages, as to the disadvantages of each method”.

2.3.1 Setting
The present study has been conducted in the department of English at the University of Tlemcen. The purpose behind this investigation is to describe the use of ICT to enhance, enrich, and develop knowledge and language proficiency for students and teachers at the same time

2.3.2 Instruments
In this study a semi-structured interview will be used and addressed to the students and the questionnaire too teachers.
2.3.2.1 Semi-structured Interview:

The Semi-structured interview is frequently used as data collection instrument or technique. The researcher has a list of key themes, issues, and questions to be covered. In this type, the classification of questions can be changed depending on the direction of the interview. A guide (rubrics) is also used, but additional questions can be asked. Corbetta (2003:270) presents the semi-structured interview as follows:

The order in which the various topics are dealt with and the wording of the questions are left to the interviewer’s direction. Within each topic, the interviewer is free to conduct the conversation as he thinks, to ask the questions he deems appropriate in the words he considers best, to give explanations and ask for clarification if the answer is not clear...

The strengths of this type of interview are the additional questions that can be asked and the ones that have not been anticipated in the beginning of the interview establish his own style of conversation.

2.3.2.2 Questionnaire

A questionnaire is a group or sequence of questions designed to obtain information from an informant or respondent when asked by an interviewer. In addition to this, When an interviewer is involved, the questionnaire is sometimes referred to as an interview. We can add also that the A questionnaire is simply a ‘tool’ for collecting and recording information about a particular issue of interest. It is mainly made up of a list of questions, but should also include clear instructions and space for answers or administrative details.

3. Discussion of the Main results

The results obtained from both the interview and the questionnaire revealed that there is no one best way to teach foreign language, nor a single optimal set of teaching materials. This is because teachers will vary both in how they teach and what they need and want to teach. It follows therefore, that there is no single 'magic bullet' that can be offered by ICT to support language teaching across all ages. However, looking at the current provision of language teaching, and at the future languages strategy, there are a number of key roles that ICT have the potential to promote Language teaching: first, it can increase motivation to learn languages. This can be done through enabling language learning across institutions and outside formal educational contexts. Second, it offers opportunities for meaningful practice of language in authentic contexts. This may result in offering opportunities for maximal progress in language acquisition through responsive diagnostic and feedback systems. The third role is that ICT helps providing innovative language engineering devices which provide just-in-time support in language use. Finally, it enables information and resource sharing between language teachers.

In addition to this, ICT have the potential to bring the products of the most excellent teachers to the classroom wherever in the world. It can speed the path toward a degree and expand their learning options through self-study for self-motivated and disciplined students. Those students can find courses on the Internet and choose their own programme of study and schedules. In virtual schools, Students can also take extra online courses to graduate in advance or accomplish specific interests and curiosity. On the other hand, for those who need to have equilibrium between their studies, work and family obligations, full or part-time workers and parents of small children, this flexibility may be most cost-effective for them.
1.6. Conclusion
This article is a short country report resulted from the larger info-Dev-supported Survey of ICT in Education in Africa. It provides a general overview of current activities and issues related to ICT use in Algeria. The data presented should be regarded as illustrative rather than exhaustive. ICT use in education is at a particularly dynamic stage in Africa; new developments and announcements experience on an everyday source somewhere on the continent. Therefore, these reports should be seen as an illustration which was contemporary at the time they were taken; it is apparent that certain facts and statistics presented in this study may become dated very quickly. It is likely anticipated that individual Country Reports from the Survey of ICT and Education in Africa will be modernized in an interactive process over time based on additional research and feedback received through the info-Dev web site.

Notes:
1. An academic service provider established in the United Arab Emirates for the purpose of promoting accredited higher education programs and institutions within the Arabian region. With its extensive range of services offers unique advantages for students searching for programs as well as the Institutions trying to promote its programs within the region and abroad.
2- Study in Algerian Education System. Arabian Campus. Available at http://www.arabiancampus.com/studyinalgeria/edusys.htm
4- Algeria: The United Nations Economic Commission for Africa (UNECA) http://www.uneca.org/aisi/nici/Algeria/algeria.htm
5-Djaweb, Algeria-Telecom's Internet subsidiary will launch before the end of December, a platform of access to broadband internet totalling more than 100,000 lines. In a separate note it was announced that Djaweb will become an "autonomous subsidiary" late 2006. Djaweb will remain a subsidiary of AT, but with its own status and budget.
7-Naturalism commonly refers to the philosophical belief that only natural laws and forces (as opposed to supernatural ones) operate in the world and that nothing exists beyond the natural world. Followers of naturalism (naturalists) assert that natural laws are the rules that govern the structure and behavior of the natural world, that the universe is a mere product of these laws and that the goal of science is to discover and publish them systematically.
8. This paradigm is primarily based on a number of values, including: a belief in an objective reality; knowledge of which is just gained from sense data that can be directly practiced and established between independent observers. Phenomena are areas under discussion to natural laws that humans realize in a logical manner through empirical testing. This can be done through making use of inductive and deductive hypotheses derived from a body of scientific assumption.

About the Author:
Mr. BENSAFA ABDELKADER is currently a university teacher of English at the English department, Tlemcen University, Algeria. He holds master degree in English for specific purposes. He is currently is a doctorate candidate, preparing his doctorate thesis in English for specific purposes course design at the same university.
References


