Algeria

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Chapter 1

Algeria

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1 COUNTRY PROFILE

Algeria (the People's Democratic Republic of Algeria) is located in north Africa. It is bordered by Tunisia and Libya in the east, Niger in the southeast, Mali and Mauritania in the southwest, Morocco and Western Sahara in the west and by the Mediterranean Sea to the north with a coastline stretching close to 998 kilometers between Morocco and Tunisia. Algeria has an area of 2.4 square kilometers; it is therefore the tenth largest country in the world and the biggest on the African continent and the Arab world. The country is consisting of 48 Wilaya (provinces) and its capital and most populous city is Algiers. See figure 1. (Djoudi, 2010), (CIA, 2016).

Figure 1: Algeria Map from CIA (2016)

In July 2015, Algeria's population was estimated 39.5 million. About 70% of the country's population is urban. Algeria is the most populous countries of the Maghreb, but it has an unbalanced geographical occupation, 90% of the population lives in the northern region, along the Mediterranean coast, which constitutes only 12% of the land area.

In Algeria, population distribution by age in 2015 was as follows: 0–14 years, 28.75%; 15–24 years, 16.64%; 25-54 years, 42.84%; 55-64 years, 6.42% and 65 years and older, 5.35%. The total fertility rate is around 2.3 children per woman. As this data indicate, country has a young population, which poses a challenge for the education system and the labor market (CIA, 2016).

Table 1. Socio-economic Indicators

Indicator	Algeria
Religions	Sunni Muslim (state religion) 99%; Other 1%
Languages	Arabic & Berber (official since 2016), French
Population	40.26 million (2016 est.) (IWS 2016)
Population growth rate	1.84% (2015 est.)
Life expectancy	Male: 75.29 years Female: 77.96 years Total population: 76.59 years (2015 est.)
Literacy	Male: 87.2% Female: 73.1% Total population: 80.2% (2015 est.)
GDP (Gross Domestic Product)	$570.6 billion (2015 est.)
GDP per capita	$14.400 (2015 est.)
Unemployment	rate 11% (2015 est.)

1.1 Internet and ICT

The connection of Algeria to the Internet began with email in 1993. There were two fronts working on this task. The first front called DZNET was based abroad. It started in 1989. Committed netters, too numerous to name, worked hard by contacting the various network organization such as EARN, NFS-NET in the hope of some help from these organizations. DZNET members also approached Algerian officials to make them aware and convince theme of the need to and the advantages of having Algerian scientist institutions connected to the outside world via email. The second front which worked inside the country was composed of two independent entities namely the Algerian Unix Users Group (ALUUG) and Centre for Information Science and Research

(CERIST), a governmental academic organization. CERIST was established in 1985 to promote the exchange of scientific and technical information, communication technologies, and networking at the national level and to form a link with outside researchers. Several projects were initiated in order to connect this organization to some European sites. Many of those failed. The ALUUG, an association finally bore fruit when it was connected to the main European EUnet backbone located in Amsterdam through dial up lines and registered and administered the Algerian internet top-level domain, .dz in 1991.

As for the CERIST, they succeeded in getting connection using a 9600 baud leased line to CNUCE, a research institute in Pisa (Italy), under a project subsidized by the UNESCO, called RINAF (Regional InterNetworking AFrican). In 1995, CERIST becomes the manager of the domain name .dz and remained the only Internet Service Provider (ISP) before market liberalization in 1998 (Kavanaugh 1998).

Two years later, in 2000, was created Ministry of Post and Information and Communication Technologies (MPTIC), mandated for the implementation and management of the national ICT policy. The first two decisions were split of the public company Post and Telecommunications into two companies, Algeria Post and Algeria Telecom, and the creation of the regulatory authority for post and telecommunications (ARPT).

During the same year, the first six licenses were issued to providers GECOS, EEPAD SERVNET, TDA, SOLINET and ICOSNET. In 2001, Algeria Telecom launched the provider Djaweb to extend service beyond universities and research centers.

In 2003, two ISPs launch ADSL (Asymmetrical Digital Subscriber Line) deals with 128 Kbps, 256 Kbps and 512 Kbps. and CERIST was placed under the Ministry of Higher Education and Scientific Research (ClusMED 2015).

The year 2005 (Koubaa 2009) saw: the launch of ADSL offers of Algeria Telecom named "Fawri"; the official launch of the Ousratic operation that aims to provide each family with a personal computer through the provision of individual microcomputers and broadband lines, providing training on; and the VoIP license allocation for the emergence of Internet and voice over IP alternative operators.

The licensing 3G allowed to the three mobile network operators (Mobilis, Ooredoo and Djezzy) in late 2013 and the provision of LTE (Long Term Evolution) since 2014 has done much to ensure the availability of mobile internet access across the large country (BuddeCom 2016), (Chaabna S., & Wang H. 2015).

To facilitate the entry of Algeria into the knowledge economy, the following national ICT initiatives have been designed: (Guemide & Benachaiba, 2012). (Hamdy, 2007)

- The project of the Ministry of Education to equip all schools with computers.
- The technology enhanced learning projects
- The Academic and Research Network (ARN)

In December 2011, CERIST becomes the manager of the .الجزائر country-code top-level domain. الجزائر means Algeria in Arabic.

The number of internet subscribers increased from 10.1 million in 2014 to 21, 4 million at the end of March 2016, including 19 million registered subscribers for mobile Internet, 1.89 million ADSL and 554,903 for 4G LTE (APS 2016).

Table 2. Telecommunications infrastructure in Algeria

Indicator	Algeria
Telephone – main lines in use	3.1 million (2014)
subscriptions per 100 inhabitants	11 (est. 2015) (IWS 2016)
Telephone – mobile cellular	37.3 million (2014)
subscriptions per 100 inhabitants	93 (est. 2015)
Internet users	21.4 million (2016) (APS 2016)

2 EDUCATION SYSTEM IN ALGERIA

During the period of French colonization of Algeria, the education system was designed primarily to meet the needs of the European population and to perpetuate the European cultural pattern. A large majority of the students were children of the colonists. French was the language of instruction, and Arabic was offered as an optional foreign language. Currently, the Algerian education system and training is mostly three ministries, those of National Education, Education and Vocational Training and Higher Education and Scientific Research.

2.1 Primary and secondary education

At independence of Algeria in 1962, the education system was in complete disarray, and enrollments in schools at all levels totaled only 850,000 (StateUniversity.com, 2016). Just after, the new government of independent Algeria underwent a major reform, several schools were built and many reforms are occurred. The first education reform was passed in 1971 introduced the nine-year basic education program. Further reforms in 1976 extended the period of compulsory education from 6 years to 10 years. In addition, education at every level is provided free to all and considered being the exclusive domain of the state. In 2004 the government explicitly allowed for the establishment of private institutions of education under well-defined regulations.

The education system is structured so that the primary school cycle lasts 5 years, lower secondary lasts 4 years, and upper secondary lasts 3 years. Algeria has a total of 8,024,000 pupils enrolled in primary and secondary education. Of these pupils, about 3,452,000 (43%) are enrolled in primary

education. Primary and secondary education is compulsory and free from 6 to 15 years old and the literacy rate is around 78.7%. The academic year begins in September and ends in June.

French is the only foreign language taught at the primary school. Students start learning French a first foreign language from the third year of primary education where English is not taught at all till the first year of Secondary Education. New syllabus has been designed and new textbooks have been published. The competency-based approach was introduced in 2002 as a result of the educational reform in the primary, middle and secondary school (OBG 2016), (Soreda 2013).

2.2 Vocational Training

Students leave school after years of compulsory secondary education. Some of them choose to enroll in a vocational training (initial or continuous) which is overseen by the Ministry of Training and Professional Education (MFEP).

The training sector and vocational education receives about 500,000 trainees and students in exceeding 1400 vocational training centers, offering more than 400 courses... Over 90% of students are trained within the network of the MFEP which also provides control of all including continuing education. Its objectives are:

- To foster particular categories of the population in regard to its socio-professional inclusion.
- To provide economic operators with qualified, adequate human resources with the demanded competence.
- To offer to workers a complementary education which allows to extend or to deepen professional skills to adapt to the evolving labor market?
- To assure professional qualification which allows to find the right profession or to create an own enterprise.

In addition with the classic face-to-face and apprenticeship training, the system offers four specific modes: evening classes, distance learning, training for housewives, and rural women training. One of the ultimate goals is to reduce illiteracy by fifty percent by the year 2016. Certificates of achievement are to be awarded to women at the end of each course in order to honor their accomplishment and encourage them to continue on with their studies.

At these public institutions add private schools approved by the government and which are specialized primarily in information technology, accounting, marketing, hairdressing, embroidery, sewing, and beauty (OBG 2016).

2.3 Higher education

At the independence of Algeria in 1962, there was only the University of Algiers and two annexes in Oran and Constantine and some schools concentrated in the capital: All this hardly reaching 3000 students.

Access to higher education is guaranteed to all baccalaureate (or equivalent foreign title recognized). The Algerian state has established a wide and diverse university network, where the number of higher education institutions

has reached in 2016 over 110 institutions (50 universities, 10 university centers, 20 national schools, 11 higher colleges, 12 preparatory schools, 4 preparatory class and 4 university annexes). To this, must be added 6 institutes and schools under other ministries (MESRS 2016).

This enables nearly 1 500 000 students to be registered in Algeria, representing a ratio of 4000 students for 100 000 inhabitants on a total population estimated at 39, 5 million inhabitants. The number of university teachers is about 60,000 teachers. So, the student-teacher ratio is roughly 25. Today the budget for education and scientific research represents approximately 8% of the operating budget of the state and 2.4% of GDP.

The LMD system (License-Master-Doctorate) was introduced to provide better readability of qualifications in the labor market into accordance with international standard. With LMD system, studies are organized around three basic levels of qualification, each of which corresponds to a certain number of credits. License: a total of three years of study (180 credits, 6 semesters), Master's: a total of five years of study (an additional 2 years or 120 credits (4 semesters) after completing License, and Doctorate (PhD): a total of 3 years (6 semesters) of study and research after the Master's degree. Officially, the LMD system had to achieve a number of objectives including:

- Improve the quality of education programs;
- Respond as well to the country's new socio-economic needs,
- Train for life-long learning;
- Protect the autonomy of higher education institutions ;
- Open the university to the outside world;
- Harmonize the higher education system to an international standard

The gradual introduction of the LMD system began in 2004 and its co-existence with the former "classical system" – a situation specific to Algeria – has known serious obstacles and difficulties.

The higher education in Algeria is closely linked to the scientific research which mobilizes more than 1300 research laboratories, 12 research units and 6 thematic research agencies in different sectors. Each agency is a public administrative institution, responsible for contributing to the implementation and achievement of national research program. Other establishments of research depend on other official institutions. Today, Algeria research must now provide a scientific production quality that meets international standards. The purpose of scientific research development plan project is to place Algeria at a high level of international competitiveness.

Algeria's Ministry of Higher Education and Scientific Research has focused its efforts on enhancing the quality of learning and scientific research. This is done by working on the establishment of an integrated quality assurance system in accordance with the international standards, and by establishing good governance for academic institutions so as to improve the ranking of Algerian universities at regional and international level (MESRS 2016), (OBG 2016), (Tempus, July 2012). (Esau. & Khelfaoui 2009),

2.4 Quality in Higher Education and World Rankings

Quality is at the heart of the concerns of both governments and universities that award degrees and allow students to be successful and competitive in the labor market and meet the needs of human, social, economic and cultural development. This awareness is spreading and resulting in the publication of regulations for universities that aims to provide a common framework to manage quality. Competitiveness between institutions becomes strong face the challenges of international rankings.

The first thing to do is to take an interest in the positions of the Algerian universities in various world rankings, like Academic Ranking of World Universities (ARWU) often known as Shanghai Ranking, Times Higher Education (THE) World University Rankings, QS (Quacquarelli Symonds) World University Rankings or Webometrics Ranking of World Universities.

The Webometrics Ranking was initiated the Scientific Research Superior Council (CSIC), the largest public research body in Spain. This ranking is based on the quantitative analysis of internet and web contents specifically related to the process of generating and communicating scientific knowledge. The purpose of Webometrics Ranking is to promote global access to academic knowledge produced by universities and institutions worldwide. (Webometrics, 2016).

Since 2007, ALQIES, the Algerian quality system in higher education is interested in Algerian universities ranking in the world mainly through the Webometrics ranking. The conclusion we can make is that the number of Algerian universities ranked in the Arab world or in Africa is increasing and their rank improves from one year to another, although there is low in world rankings. Thus, the latest ranking of July 2016 Webometrics places 20 Algerian universities in the top 100 Arab universities and 27 universities in the top 100 African universities. University of Sidi Belabbes comes out national best, no. 4116 in the world, with University of Tlemcen, national second, being no. 4143 in the world (ALQIES 2016).

3 E-LEARNING IN ALGERIA

3.1 Organizations responsible and historical evolution

The National Centre for Public Learning (CNEG) was the first centre in Algeria in charge of all distance education. This permanent educational structure focuses on universal learning and adopts teaching by correspondence, radio and television in the delivery of instruction to many persons deprived of education opportunities during french colonial period. A significant portion of Algeria's adult education is conducted by way of remote education programs. Since 1969, CNEG has been teaching adults at a distance, included teacher training and secondary-level correspondence courses for adults, published in newspapers and with radio support. Grammar, vocabulary and arithmetic lessons were distributed in factories to interested workers. Lessons were simply written, some to fit the specific requirements of each workplace. Tutorial help was available in the factories. Courses of varying difficulty in the same subject were also available to suit the needs of different individuals. The centre has contributed significantly to the revitalization of learning and helped

learners reach the secondary level by providing lessons by correspondence for those unable follow lessons in a school or academic institution. In 1997, 3.1 million televisions and 7000 fax machines were utilized in connexion with some type of distance course or program (Young, 2010).

In 2001, the CNEG becomes National Office of Education and Distance Learning (ONEFD), a public company under the Ministry of Education. The (ONEFD) offers students the opportunities to prepare their homework for the final examination and to ensure additional or special training as part of social and professional promotion.

The National Centre of Distance Vocational Education (CNEPD) is in charge of the various distance training courses which prepare for the examinations organized by public institutions of vocational training in Algeria. The CNEPD is also responsible for the complementary training and reorientation of public servants and enterprise employees.

The first class graduates in e-learning solution or International Computer Driving License (ICDL) was released on 2007. A graduation ceremony was organized by the CNEPD, which monitored and evaluated the training, and with international certification. Over a period of a year, this training was launched in the academic year 2006-2007, via the Internet network CNEPD. The program was, meanwhile, developed by qualified teachers in this area. ICDL is a standard training that enables everyone to take training courses in its field. The advantage and privilege in this training system is that it is framed by the renowned international expertise. The CNEPD, covering 45,000 trainees also offers forty training in several areas, including finance, administration, tourism, construction, management, foreign languages and transport (CNEPD, 2016).

The University of Continuing Education (UFC), which was created in 1990, enables those who did not obtain the baccalaureate at school to enter higher education through 50 continuing-education centers distributed throughout the national territory (Tempus, July 2012).

Courses destined to the classes with year-end examinations are broadcast (three hours of lessons every week) by the public Algerian TV since January 2015, in accordance with an agreement signed by the Algerian TV, the University of Continuing Education, and the CNEPD. The integration of elearning at the level of the university is relatively recent (StateUniversity.com, 2016).

3.2 Avicenna Virtual Campus

Avicenna Virtual Campus was a four-year project coordinated by UNESCO and launched in November 2002 with funding from the European Commission through its Euro-Mediterranean Information Society (EUMEDIS) program to alleviate the digital divide in higher education along the Mediterranean basin (EUMEDIS 2006).

The project aims to equip the Centers and Networking it by Internet, to train the staff of centers, to train also the teacher’s producer in process production of e-Learning multimedia courses which be used in Internet network, to develop e-learning courses, select norms and quality evaluation procedures,

to set up of open Virtual Library of e-Learning courses in several languages including Arabic., and to provide e-Learning sessions for students.

The project engages a consortium of fifteen “AVICENNA Knowledge Centers, (one by country) also known as the nodes of the project. University of Continuing Education (UFC) is the Knowledge Centre for Avicenna Virtual Campus in Algeria (Mitchell October – December 2006).

3.3 Algerian Virtual University

Algerian Virtual University (AVUNET) is web-based multilingual elearning environment developed in PHP/MySQL for distance education that can be used both for distance or blended learning where the data is stored in a centralized database at the platform server. AVUNET environment includes three modules:

- An authoring system containing the necessary tools for ongoing courses production. It contains content design system and learner self-assessment tool to improve his knowledge and skills.
- A management and collaboration server consists of several tools. An information tool, which contains the various files and the data necessary for teaching or user training activities (teacher, student, administrator). A collaboration tool to allow users to interact with each other to accomplish the work of the team or take part in discussions. To promote collaborative learning, the tools are designed to make the presence of other known providing an indication of their availability and their remarks on educational materials.
- A learner interface that makes it possible for the learner to obtain assistance A various artifacts to favor personalized expression and to restore other participants' presence by providing indexes of their availability and of their comments on the information are introduced. (Douidi, Djoudi & Khentout, 2007)

3.4 Agent based Learning Platform

Approach aims to develop an agent-based platform able to take into account the problems encountered by the different forms of elearning, namely: the learner sociological isolation, the loss of motivation and the autonomy of the learner. This platform has to: (1) Provide the necessary tools to make a learner, working from a distance, feels the same way as if he/she working face to face, while allowing more flexibility with the respect to time and space constraints. (2) Propose tools to follow up, help the learner and evaluate his/her work. So, assistant can plays the role of learner companion. An agent-based approach allows dividing the problem into intelligent communicating entities and distributed in space. These entities can substitute the teacher and thus reduce his/her tasks. The artificial agents can, also, assist learners in an asynchronous way during an exercise solving session or a lecture session. The application is designed using MaSe methodology. MaSe is an easy and complete methodology "covers the various steps of the analysis and design of the software engineering process” which helps in the identification of the agents. The agent-based platform experimented. 112 students and 20

teachers from the University of Setif (Algeria) participated in the sample survey. (Harbouche & Djoudi 2007)

3.5 Listening Comprehension of English with Mobile Devices

A proposed approach examines mobile devices such as MP3 players, tablets, or Smartphone in a mobile learning environment for learning English as a foreign language. One focus is on pedagogy: therefore, a major part of research is on developing, evaluating, and analyzing listening comprehension activities, and then composing activities into a curriculum.

The approach proposes to the learners a new learning situation of a language as one of its main objectives. Also, it helps learners to become speakers who are able to make their idea comprehensible and to progress quickly in learning a foreign language. It also claims to give coherence to language learning through a multiple exposure to the target language. Thus, the portable MP3 player for example is presented as a tool adapted to the achievement of these objectives.

Diffusion of the sound text files on the learning environment allows users a fast remote loading of the sound documents. The environment also provides instructions on the work to be done and exercises for learners. The listening to the sound files is then done starting from the computer itself, and especially by remote loading of these files on mobile devices for listening independently of the computer.

Platform is a web-based application with server-side processing of intensive requests. It can support a wide range of mobile devices. A key element of research will be testing the new mobile tools in several different device contexts to demonstrate support for heterogeneous mobile device environments. In addition, there is the potential to integrate mobile phone technologies such as SMS with platform tools as an alternative mobile platform for learner responses (e.g. Question/Answer, Polling, etc.). (Djoudi, 2008).

3.6 Adaptation of learning resources based on MBTI Model

The goal of the project is to provide system capabilities to conduct reasoning on descriptions obtained in order to automatically adapt the resources to the learner according to his preferences. Approach presented, uses MBTI Model (Myers-Briggs Type Indicator) and provides some intelligence in research and adaptation of learning resources, but also more relevant through the use of ontology developed (learner, domain) and semantic links between concepts and learning resources.

A learning object is an educational, atomic unity representing a physical entity (text, picture, sound or video) belonging to a given category (definition, example, illustration exercise, etc.) corresponding to a particular notion represented in XML and carefully arranged together. In addition, to increase the expressiveness of relevant research, a set of SWRL rules are incorporated by exploiting the semantic relationships (between concepts and resources) to develop mechanisms that allow inference reasoning. A first prototype was developed embodying approach. The course "Database" in "Master Degree" was used as the application domain (Behaz & Djoudi, 2012).

4 E-LEARNING EDUCATION PROGRAMS, DEGREES, ASSOCIATIONS, CERTIFICATIONS, AND ACCREDITATION

At present, e-Learning is becoming an important global business not only in the commercial sector, but also in the support that national government is giving to educational institutions to increase their export income. Most Algerian universities have a platform elearning, but these platforms have very few courses and are underutilized. Most often the choice fell on the open source Moodle platform. Several institutions and companies are utilizing technology to institutions and companies use technology to develop solutions to solve the problem of teaching and learning and help learners. Some are offering online courses that are accessible for all; others are providing schools with educational kits. Many services aim to improve education in Algeria (Mayard, July 27, 2015).

4.1 Dirassatti

Dirassatti (means 'my studies' in Arabic) is a web-based learning system launched in 2014 by two young students for private lessons as part of the start competition organized by the mobile operator Ooredoo. This new platform allows students to the online review. Website includes video courses, exercises, quizzes and evaluation sheets, developed by teachers in accordance with the official educational programs set by the Ministry of National Education. In the beginning, the material for the course is provided for mathematics, physics and life science, for only the last school year, but in both written and video form. So, Dirassati, wants to be the first distance tutoring website by way of video-chat. It will be enriched and will affect all subjects from primary to all levels up to university cycle. By 2017, Dirassati hope to offer content for all Algerian academic degrees (OBG, 2016).

4.2 iMadrassa.com

iMadrassa.com (Madrass means school in Arabic) is a tutoring Primary and Secondary education school management system. This environment complies with the official curriculum of the Algerian national education. The educational content is produced by teachers over 20 years of experience and validated by inspectors of Education rigorously selected by teaching team. To accompany the student success interactive exercises, videos and fun quizzes are imagined to test his knowledge. Thus, iMadrassa is the educational library with over 23,000 courses, 107 000 exercises, 600 controls and 290 000 quizzes (imadrassa, 2016), (OBG, 2016).

4.3 Dirassatic

Dirassatic (Arabic for “your education”) is an online management tool. Students and parents are granted access to education related information, from class schedule to absences, notices, and grades. Dirassatic was created and funded by Dynamic Web Solutions, an Algerian web agency. The service was launched September 2014, after two years of preparation, and has a five-member team. For the time being, the service will be operating in around fifteen private establishments (at primary, middle, and high school levels). And whenever schools don’t have the necessary budget to acquire this solution, Dirassatic will offer parents, the option of paying for the service themselves.

However, the school will still have to play its part and enter the information (Dirassatic, 2016).

4.4 DZCampus.com Platform

Actech (Technological Actions) specializing in multimedia communication, particularly in the design, implementation and animation of websites and develop interactive web applications, and "Conform Communications", an Algerian company specialized in studies, research, training, expertise and communication consulting all fields, in partnership with the National Library have launched the first eLearning platform open in Algeria. It is aimed at companies, institutions and training organizations Algeria. DZCampus.com offers more than forty online tutoring with training modules and assessment quiz in the following areas: management, project management, languages, computer office automation, graphics, Management Secretariat, General education. It offers various spaces dedicated to the company, the trainer, the trainee and a common space and an "Agora"; it allows capitalizing the knowledge and expertise of users and thus helps to develop individual skills and improve business performance. DZCampus.com has a video conferencing system and uses the Dokeos platform (DZCampus.com, 2016).

4.5 TARBIATIC Project

Another project exists and is initiated by the EEPAD, which specializes in Telecom and Internet Service Provider, which introduced this new "pedagogical concept" in ten schools across the country that have joined this innovative approach. According to officials of the EEPAD, that digital school project is a complete and scalable solution that allows the school to better integrate and develop the use of ICT with partnership of Wanadoo, which networks the various players in the school are the school administration, teachers, students and their parents. It's structured into five "virtual offices", namely an office of the academy, an administration office of the school, one for the teacher, an office of the student and finally, another office reserved for Parents of students who will follow the education of their children by using his computer to any location. A hundred schools have been selected as part of this experimental project called "TARBIATIC". It now contains nearly 600 courses and 4,000 exercises with answers covering classes average 4th year exams and 3rd year secondary (Tarbiatic, 2016).

4.6 eduDZ

eduDz is basically an e-learning platform for Algerian students. It's organized, clear and minimalist with courses and exercises section, no dead links because everything is hosted on the platform. eduDZ includes video course, a forum, a blog and access to social network as facebook and twitter. The challenge for eduDZ designers is to widespread use, have a professional interface and continue innovating (eduDZ, 2016).

4.7 Djaweb solution

Djaweb (Algeria Telecom) launched in the "eLearning" service prepaid card, developed in partnership with Microsoft and Thomson. This service offers via the Internet content of 4,000 training courses in the field of Information

Technology and communication and professional skills development. This is, among others, the computer literacy of the most known certifications major IT vendors (Microsoft, Oracle, Cisco, IBM, Novell, SAP ...). A training program is offered by Djaweb, customers and, for obtaining the Microsoft certification. The program includes 16 modules for a period of one year with an hourly volume of 200 hours (Guemide & Benachaiba, 2012).

4.8 CNEPD Computer Skills Certification

The National Distance Vocational Education Centre (CNEPD) has launched vocational training year 2006-2007 a new offer entitled "Computer Skills Certification" or "International Computer Driving License", known worldwide under Acronym ICDL. The ICDL is an international standard that allows everyone to train while validating and gradually his computer skills. This course is taught by CNEPD via Internet through eLearning, supported by animated educational institutions provided by qualified teachers. Note that as part of the management training needs, the CNEPD retained in its program in the short and medium term, the launch of other training activities that will be offered under different formulas or solutions including in elearning and blended Learning. To do so, the CNEPD provides its trainees a training surround online, with course materials, exercises, forums, synchronous chat tools, calendar, wiki etc. (CNEPD, 2016).

4.9 Algerian Learning Centers

Created in 1995, Algerian Learning Centers (ALC) is an Algerian education organization that offers online English-language courses to learners and uses e-learning technology to teach students. ALC has many international partners. Among them, ETS Global (Educational Testing Services) is the world leader in academic and professional tests. With over 20 years of experience, the ALC is the most important language school in Algeria. ALC presents a complete learning solution with a Blended Learning Mode (ALC, 2016).

5 FUTURE DEVELOPMENT

A great number of research projects in technology enhanced learning are introduced in several Algerian universities. At present, the most important and most innovative projects are: CVL@b, a collaborative virtual laboratory, learner recommendation system and web-based groupware for teaching information literacy.

5.1 Virtual Laboratory for Elearning

A Virtual Laboratory is a digital environment aims to teach (using simulated experiments) practical approach of an experimental discipline such as physics, chemistry, mechanical, etc. The aim of the project is to propose a multidisciplinary architecture called CVL@b (Collaborative Virtual Laboratory) for the virtual experimentation on the Web. This architecture allows learners to perform distant practical work (Tele-PW) and experiments using virtual devices in experimental sciences in a collaborative way. The trainers could lead interactive sessions of instructions of Tele-PW using appropriate scenarios, thus using the metaphor of the distant practical worksheet (Tele-PW sheet). CVL@b is a collaborative virtual laboratory for the realization of

the Experimental Work. Its design was based on the analysis of the classical laboratories (Mechta, 2013).

5.2 Learner Recommendation System on Collaborative Learning

Computer Supported Collaborative Learning (CSCL) fosters collaboration among users to exchange and share knowledge or skills for succeeding a common learning project. Therefore, when users interact among themselves and with an environment, they provide a lot of information. This information is recorded and classified in a model of traces and thus made usable for various purposes such as updating a learner model. Taking account the learner activities within a CSCL to guide him in his learning is complex. The learner model allows to consider knowledge of all kinds (preferences, motivations, goals, plans, actions, acquired knowledge or not, mistakes, etc.).

The proposed approach is: (1) to refine the collaborative model of traces by a number of measures to build indicators on the state of the learner knowledge and the progression of his knowledge within a group in a learning session. Among These parameters: (2) retain the mastery degree of knowledge represented by a concept. To achieve these goals, the following method is adopted: (i) propose a semantic model to measure indicators of the contribution of each student in the group, (ii) estimate the contribution of indicators using Bayesian formulas, this contribution should take into account the knowledge of the learner and his activities, (iii) propose a set of recommendations to assist the learner in his learning (Mediani, Abel & Djoudi, 2015).

5.3 Web-Based Groupware for Teaching Information Literacy

An application was designed to meet the needs of information literacy education and facilitate the management of research projects in both face-to-face and remote teaching situations. It promotes off-campus study and collaboration as well as communication among students, their instructors, and specialists in the concerned scientific field.

The system is an aid for both teachers and students in managing and conducting research projects. It was designed for use in face-to-face classroom situations, in addition to cases of remote teaching. It can be regarded as a computer-supported collaborative learning platform. It is thus both a learning system and a groupware. It is based on a model of users and their interactions with others, in a given environment and situation, or with a given goal in mind. In the model, All groups of users have a common objective, which is the management and accomplishment of a research project.

The system is a web-based groupware, in that it assists groups of users in jointly carrying out a project. Group members may collaborate remotely or in each other's presence, at the same or different times. In accordance with pre-established rules, It permits communication between users, the production and sharing of documents, and simplified coordination and planning of user activities. Different services are offered to different users. Shared services, which are mainly aimed at outside readers since they can be accessed freely via the internet, and reserved services, which are specific to each user

category defined in the application. Again, the functionalities of platform were developed in accordance with the teaching methods useful in information literacy education (Formatic, 2016).

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FURTHER READING

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