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An Analytical Study on "The integration of ICT in schools: The PLUMIER project"

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Abstract: *The emergence of new technologies has meant a profound change in a society that has in vain been called the information society. ICT are part of the changes to economic, social and technological levels that are occurring in today's society, and educational institutions cannot stay away. It would be unthinkable to expect that a change of this magnitude would have no impact on education. In this light, this article aims to present the analytical views on the Information and Communication Technology of Education as part of the project viz., 'Plumier'. This is a Descriptive Analytic Study. The matter of the study is qualitative and it adopted the analytic method of a project 'PLUMIER'. It comprises the views of observations descriptively expressed in the form of various objectives of the study. The analysis part of this study covers the aspects like, introduction on Plumiere Project, the obectives of the Project, the technological field plans, connectivity, technical assistance, equipment, educational field plans, ICT projects of educational centers, the Professor responsible for computer media, teacher training aspects, attention towards diversity in Plumier, acquisition and elaboration of own educational software, evaluation plan of the project and Conclusion.*

Key Words: *ICT, PLUMIER, Professor Responsible for Computer Media, Teacher Training Aspects.*

1. INTRODUCTION:

At present, the role of the New Information and Communication Technologies in society is unquestionable. Although many people have been talking for a long time about the benefits of these in educational environments and the processes for their incorporation, they do not develop with the success and success that they would like, even if the official reports and projects propose ambitious goals (Assan, T., & Thomas, R. 2012). All they know is the repeated instructions on the need to promote specific policies that increase the use of ICT in education, through concrete actions and multi-year endowment programs to develop an effective integration of these media in education and training systems European.

In most of the time it would be a tough challenge to teach a subject and to do exercises with the computer. Sometimes, the absence of elements of practical-educational reasoning, prior to any start of the design of policies for staffing, equipment and access to information, is causing a lack of clarity in the priority of plans that help to initiate, train and consolidate these educational experiences with technologies. These initiatives have made, without doubt, materialize these proposals to reach concrete achievements, to integrate the citizens schooled to the Information Society, based on the ratio computer, students and order, student and Internet connection. Equipment and access to information, is causing a lack of clarity in the priority of plans that help to initiate, train and consolidate these educational experiences with technologies (Delrio, C., & Dondi, C. 2008).

Let's say it clearly; the most modest aspiration is that ICTs serve so that your students know how to operate a computer. Use of the most common programs, acquire a certain techno-ethics, search information through the Internet, use email, etc. And exactly the same should be said of the teachers of the above mentioned school children, except that, in addition, they have to go ahead to possess the minimum knowledge to explain to someone how something is used. In addition, teachers suddenly have as many possibilities as possible. Obtain educational resources could have dreamed. And they can share them with other professionals and express something of the creativity they demand from their students in a medium that will hardly put limits on their imagination. But there are still some problems to solve. (Zhao, Y., & Cziko, G.A. 2001).

In this sense, the different researches carried out, to know the degree and the needs that teachers have to incorporate ICT to their professional activity of teaching have shown, independently of the teaching level, the recognition of this one (Zhao, Y., & Cziko, G.A. 2001). Their lack of capacity to use the ones they have at their disposal in educational institutions. This situation, apparently, has changed little in recent years, and this has been independent of the volume of training activities generated by the Administration, as has been recognized in different reports of the Commission of the European Communities where it was indicated with clarity that observed a formative deficit in the teachers with regard to the ICT in a double dimension (European Commission. 2013).

Most specialists point out that in order to achieve a minimum implantation and permanence of ICT in the school world, it would be necessary to respond to several elements: trained teachers, habits to interact with information virtual, capacity for integration in the curriculum, critical vision of the information and knowledge society, creation of collaborative communities in the use and sharing of teaching strategies and experiences. Along with these interrelated objectives and strategies, basic conditions are also necessary to ensure infrastructure and organization, as priority areas that should include aspects such as, access to the network affordable to the school budget, the technical and organizational conditions in the centers and the continuous support to the public school (Department of Education 2002).

This coupling to the technological culture, with a strong socio-educational implication, influences both teachers and students. At the same time, all strategies that involve teachers in developing special attention to the digital and technical phenomenon of the processes of production and dissemination of information must be strengthened in order to assess how work is done around the production and development of information and, at the same time, the elaboration of knowledge. Hence, the objective of addressing technologies in education is more by the involvement in levels of personal development, interactive, integrated with the group culture, development of interactive skills and assumption of positions on the contents that we elaborate, much more than the simple use of ICT (NCES, U.S. Department of Education 2000)

This reflection on the role of technological media raises a set of topical issues, on the relationship between these two social systems: educational or school and the technological means teachers and students use in classrooms that have a powerful influence on the constructions of the world of individuals. Influence that increases as its diffusion capacity increases and access possibilities for users from the individual, family, formal and non-formal educational sphere (Wang, Y. 2000).

2. LITERATURE REVIEW:

The Plumier project: The integration of ICT in schools

Plumier is part of the Strategic Plan for the Modernization of Regional Administration (PEMAR) of the Community that aims to integrate Information and Communication Technologies into the education system. The recipients are the citizens who use, in their different levels and modalities, the regional public service of education, especially the students, teachers and family. This program has made possible the interconnection of all public educational centers in the region of Murcia by an intranet, while they have been equipped with computer equipment for teaching and management, ensuring its maintenance through an external technical service to the center. Its purpose since its inception, in the 2001-02 academic year, is to possess the necessary knowledge to live and work in the new Information Society, under the proposition that different forms of access must avoid exclusion in relation to information, reinforcing the fight against technological illiteracy. In the same way, in its approach is to pay special attention to disabled people and to fight so that geographical isolation should disappear as a limitation to the educational system, through access to information (Plumier 2001).

Undoubtedly, as the Biennial Report on the situation of education points out, it is one of the major goals of the education system, as noted by the amount invested in its development. For the 2001-02 and 2002-03 biennium, 1,600 million were paid to incorporate 500 educational centers (one classroom per center) into the Plumier Project, which have 7, 500 computers. In the same way, in order for teachers to update themselves in new technologies, CPRs promoted the development of training activities. In courses, of 27 carried out, during the 2001/02 academic year they went to 116 in 2002/03 and in training centers the actions multiplied, from 22 in 2001/02 to 93 during 2002/03. It has been in that course, when computer communications were increased and improved in the centers, 8,000 computers and 1,200 Internet direct accesses were reached, as well as the management of the centers has been computerized and a technical team based in the CPRs has been created. The assessment made by this consultative body on new technologies applied to the regional education system is that it considers that the effort of the Plumier has led to the start of a new teaching model based on technology, with considerable effort in order to provide the corresponding technological infrastructures to educational centers. The assessment made by this consultative body on new technologies applied to the regional education system is that it considers that the effort of the Plumier has led to the start of a new teaching model based on technology, with considerable effort in order to provide the corresponding technological infrastructures to educational centers (Elizabeth Burmaster 2003).

This process of implementation of Plumier has associated a series of specific educational plans that allow: The effective introduction of Information and Communication Technologies in the regional education system, specified in the creation of pedagogical projects on Information Technologies and the Communication (ICT) that all the centers have elaborated for their ascription to the project, the creation of the figure of the Responsible Professor of Computer Media, the training of the teaching staff, the acquisition of licenses of office automation and educational software for the centers and the teaching staff , the elaboration of educational multimedia material encouraged through contests and prizes and the creation of the regional educational portal (Koehler, M.J., & Mishra, P. 2005).

3. MATERIALS:

Technological field plans: Among the plans belonging to the first area, the following stand out:

Connectivity: Through the Regional Network of Interconnection. The connection of the educational centers is made to the Regional Network of Interconnection (network of exclusive use for the Autonomous Community), which makes possible the union of all the centers through an Intranet that provides a whole series of internal services without needing the exit to Internet. This Intranet allows, for example, an adequate security in the flow of data with the centers or the centralized use of software that allows a control over contents in the Internet access. At present, 100% of centers have broadband Internet access, 81% by ADSL and the rest, for rural centers, by satellite connection (Ramorola Mmankoko Ziphorah 2013).

Technical assistance: Another plan put in place has been decentralized technical assistance by districts that aims to free the teacher, more specifically the teachers responsible for computer media, from the more complicated maintenance tasks. In this way, possible breakdowns or reconfigurations in equipment and networks are handled by personnel from the Plumier Support Center (CAP) outside the center (UNESCO & COL 2004). This service, which is a novelty in this type of project, has been outsourced to a company that acts under the supervision and direction of the Ministry of Education. Specifically, there is a technician for each of the Teacher and Resource Centers of the Region (9 CPR) and two more to support the areas of greatest need at each moment (Department of Education 2002).

Equipment: The last of the plans belonging to the technological field is infrastructure and equipment, without a doubt the most visible in the centers. This plan has allowed cabling and providing in a coordinated manner more than 600 Plumier classrooms and their corresponding local area networks throughout the regional geography. The installation of communications, networks and equipment began in December 2001 and ended in June 2004. At the moment, all the centers have computer equipment, with an average of 8 students per computer and the bet for the future in this field goes through the progressive incorporation of wireless technology that allows access to the Network from all the classrooms (UNESCO 2004).

Educational field plans: All this technology and the infrastructure that sustains it must achieve its full inclusion in the educational field through the incorporation of educational plans that will be exposed below:

ICT projects of educational centers: All centers have developed a project on the educational application of ICT, which specifies how to apply ICT to the classroom and is collected from the methodological and organizational changes involved in the integration of these technologies to the multimedia content to be used in each of the curricular areas (Roblyer, M.D. 2006). These projects have been informed by a technical committee and their suggestions for improvement have been sent to the centers so they can be analyzed and, where appropriate, incorporated. For their part, the CPRs are supporting the training plans and educational programs that enable continuous improvement in this area.

The professor responsible for computer media: For a real implantation of the ICT, in each center, the figure of the Responsible Professor of Computer Media (RMI) has been strengthened. It has been a figure created from an Order of the Ministry of Education for the

Ascription to Plumier and is the key human factor in the centers (ISTE 2009). This professor is appointed by the Director from among the stable teachers of the center with experience in the educational use of ICT and is in charge of planning, managing, coordinating and dynamiting all aspects related to the development of the ICT project and the use of the computer means of your center. To develop its work, it has hours of dedication both electives and complementary and, depending on the size of the center, you can count on two collaborating teachers (Mwalongo, A. 2011).

Teacher training: There are three specific training programs according to the target group, one on initial knowledge of teachers for the use of ICT, aimed at all teachers about 15,000 and has been divided into modules of increasing complexity to ensure the training itinerary and the incorporation into the program according to the teacher's initial knowledge level (Wilson-Strydom, M. & Thomson, J. 2005). The modules can be taught independently or integrated into an activity that collects content from several of the following:

- Module I: Introduction to educational informatics.
- Module II: Internet, as a teaching resource.
- Module III: Edition and elaboration of web pages.
- Module IV: Software and educational programs for the curriculum.

- Module V: Multimedia educational applications.

There is a second program for specialized training of the Responsible for Computer Media, where they try to provide tools for the didactic use of the Internet and software for the different areas, as well as training in social skills for the planning and coordination of teaching teams.

Finally, a management software training program covers the needs arising from the generalization of computer programs undertaken by the Ministry that is allowing to unify, streamline and simplify the economic and administrative management of teaching centers, tending to all the information generated in the educational centers and the central services flow in computer support (Afzaal, H. 2012). This training is directed, therefore, to management teams and administration and services personnel. It focuses on the knowledge of the following applications: School Program for administrative management of Primary, IES 2000 Program for administrative management of Secondary, GECE 2000 Program for economic management and ABIES Program for library management (Department of Education 2002)

4. METHOD:

This present study is an Analytical Study. The descriptive analytic method is used to analyze the project 'Plumier'

Research Design: The current research design is the 'Observational Design' of secondary sources of data

Need and Significance of the study: The need and significance of the study is that it helps the school and any other educational authorities, educational stake holders, students of different streams and standards, scholars, all the types of academicians etc.,

Description of the tool: Direct and personal analytical reference and observation of the Project file on 'Plumier, Spain' and few of its other associated material through different forms such as, magazines, newspapers, internet blogs and sites, few other online educational repositories are the sources followed as part of this study as a qualitative observation tool.

5. DISCUSSION:

Attention to Diversity in Plumier: In this regard and as regards equipment, the Special Education Centers, due to the characteristics of the students enrolled, have been equipped, in addition to the computer classroom, with equipment for all hearing and language units and cycles and educational stages (Department of Education 2003). On the other hand, to facilitate access to technology to those students who, due to their disability, need it, an annual economic appropriation has been set up to select and prioritize projects for the provision of adapted equipment and technical aids. In the case of students who for reasons of illness cannot attend the school, agreements have been established with different entities for the provision of educational software and portable computer equipment to the Support Units in Institutions (Aubrey, H. 2012).

Currently there are more than 125 evaluated programs that can be consulted in the regional educational portal. In parallel, several specific educational materials have been developed for the attention to diversity in multimedia support. With regard to support services on the Internet, a section on attention to diversity has been included, a directory with more than 300 resources on the Internet about special needs and disability, a specific section of ICT and Special Educational Needs, in addition to various forums and discussion spaces. Similarly, with the aim of ensuring that the Information Society does not translate into social exclusion, it has been committed to making the design and content of all its web pages accessible to people with disabilities; as well as that all multimedia resources adopt the recommendations of the global initiative "Designed for Everyone" (Mehlinger, H.D., & Powers, S.M. 2002).

Acquisition and elaboration of own educational software: The importance of educational content in ICT implementation projects means that the development of various educational materials such as the web pages of schools and teaching staff, teaching units, multimedia educational resources, educational software, databases of regional images on historical, artistic and natural heritage, etc. To support these initiatives, priority is given to the creation of Working Groups, Innovation Projects and Research Projects on the educational application of ICT, as well as calls for punctual awards for the development of all types of multimedia materials (Ginserb, R., & McCormick, V. 1998).

Regarding the centralized acquisition of software, licenses have been purchased from different educational programs for Secondary and the investment effort will be maintained in subsequent years. Likewise, and this is a novelty that deserves special mention, a package of programs has been acquired for the use of teachers with personal use licenses This is intended to provide teachers with the same tools as in the center for the preparation of their classes. (Soneye, S. 2012.

6. ANALYSIS:

Evaluation plan: Five areas of evaluation have been defined:

- **Connectivity and equipment**: It allows us to know the evolution of various variables such as number of students per computer, number of centers connected by broadband, etc. and its comparison with the objectives set.
- **Educational**: Values the capacity of the project to promote the real incorporation of ICT in the curriculum and the classrooms.
- **Organizational**: The computerization process of the economic, administrative and library management of the centers is analyzed.
- **Portal education**: Assess the use, usefulness and functioning of the educational portal.
- **Global**: It aims to assess the perception of the quality of the project that users have of the different plans of the same.

7. FINDINGS:

- analyse the integration of ICT in schools as part of the Lumiere Project.
- analyse the Objectives of the Lumiere Project.
- analyse the series of action plans that have been designed that concern both the purely technological sphere of infrastructures, communications and endowments as well as the educational one.
- analyse the Teacher training course of orientation which involves three specific training programs according to the target group, one on initial knowledge of teachers for the use of ICT, that aimed at all teachers about 15,000.
- analyse the Evaluation plan that comprise of five areas, like: Connectivity and equipment, Educational, Organizational, Portal education, Global.

8. RESULT:

The Plumier are specified in: Interconnect, through an intranet, the educational centers and central services which are as follows:

- Provide free connection and communications to all public schools.
- Provide teaching and management computer equipment.
- Maintain equipment and facilities through a technical service external to the centers.
- Provide free email and web accounts to all centers and teachers.
- Unify the programs of economic management and administrative teaching.
- Train teachers to generalize the use of ICT in the classroom and those responsible for the management of the centers.
- Facilitate the development and development of ICT projects in all educational centers.
- Promote the dissemination and development of multimedia educational materials.
- Regulate and enhance the figure and functions of the Responsible for Computer Media (RMI).
- Create a regional educational portal with public and private services for the entire educational community.
- Evaluate the whole process in a way that enhances continuous improvement.

9. RECOMMENDATIONS:

To achieve the above objectives, a series of action plans have been designed that concern both the purely technological sphere of infrastructures, communications and endowments as well as the educational one.

10. CONCLUSION:

The ICT are part of the changes to economic, social and technological levels that are occurring in today's society, and educational institutions cannot stay away. They should be adapted to the individual characteristics and the students' own needs, in order to provide more flexibility in the academic trajectories and to facilitate the development of their potentialities to the maximum. The incorporation of ICTs in society and especially in the field of education has become increasingly important and has evolved over recent years, so much that the use of these technologies in the classroom will be a possibility to be established as a necessity and as a basic work tool for teachers and students. The emergence of new technologies has meant a profound change in a society that has in vain been called the information society. In our current environment and thanks to tools such as the Internet, information is available in huge amounts available to everyone. It would be unthinkable to expect that a change of this magnitude would have no impact on education.

The student builds his knowledge by uniting the previous knowledge he already possesses with the acquisition of the new knowledge he learns by means of inquiry and information search with new technologies. During the teaching-learning process, the student requires a series of specific conditions that facilitate the acquisition of knowledge in the performance and development of different tasks. Each student has a great talent and therefore has different learning rhythms in terms of assimilation and acquisition of new knowledge.

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