# The Role of ICT in Teacher Education.
# The Development of Web Pages by Project Method.

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**Abstract**

This paper is a description of an in-service teacher training experience that used ICT to develop a project that involved teachers (nursery and primary) and also children, parents and other members of the educational community. Its aim was to build an Internet site that would give information about school life. It's an open web space where teachers, parents and students can express and share their ideals and activities. This project is still in progress and is being developed in three interconnected phases: conception, development and evaluation. The most important issue to relate is that the technical or instrumental learning is dependent on the ideas and purposes of teachers, students and parents.

We believe that when we talk about ICT in schools and also in teacher education we shouldn't only be concerned with the 'means', that is to say, how to introduce computers or how to use a word processor and Internet resources, but also with the 'ends'. Only when we question the ends do we begin to pay attention to what we do, that is, to construct a story that is worth telling " … to tell that we are merely tools makers (and tools users) is to miss the entire narrative aim? We are world's makers and world's weavers" (Postman, 2002: 108).

## Introduction

Not very long ago, about fifteen years or so ago, just talking about the use of computers and information and communication technology (ICT) in education would make many teachers feel uncomfortable. Many feared these machines would replace them, and others believed they would mechanise human thought and relationships. Today, the situation is somewhat different and, some teachers are more enthusiastic than others. The current problem isn't the introduction of ICT in schools but how and for what purpose. We all know that a great number of teacher training schools, and also some primary and

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secondary schools, still don't use information and communication technology. There is no need to mention some causes because we all can think of some.

The main problem is not to find answers to the 'hows' but to find reasons to justify the use of ICT. Reasons that provide a good purpose for our efforts to learn as well as to use them in our daily personal and professional lives. As we all have surely noticed, new technology, as any other technology, bring new problems while little contributing to solving the old problems. Why? As they have appeared in answer to new economical and social needs, they demand new infrastructures, along with new ways of thinking and organising school as well as learning and training. Research has shown that ICT as an adds-on to existing practices is not an effective strategy (De Corte, 1991, 1993; Jonassen, 1996; Mendelsohn, 1991, 1991a; Papert, 1980, 1993; amongst others). New technology must be placed in stimulating learning environments. There is also the need for experts, and this lead to new possibilities of representing, dealing and communicating different kinds of information. "As Salomon (1993) points out, tools are not just implements, but also serve culturally defined purposes and require a skilled operator in order to function usefully" (Jonassen, 1996: 9).

However, a truly technological education also requires the analysis of the social contexts they spring from, what the problems were that they were answering, what problems they produced and the effects on social and economical life, and in what way they influenced psychology and human relationships. This is why ICT represents a new challenge to schools and the teachers. We intend to analyse some of these aspects, but first we are going to mention ICT's role in schools and in teacher training, namely Internet as a structure to complement classroom teaching and projects development. We will then describe a teacher in-training experience. Finally we will mention the problem of technology in schools, with relation to the impact of some ideas in youth education.

To be precise, we have the same understanding of technological education as Joseph Weizenbaum, Marshall McLuhan, Neil Postman, Sherry Turkle and even Seymour Papert, and avoid confusing the use of technology with the concept of technological education. "Technological education it is not a

technical branch of education. It is a branch of humanities" (Postman, 2002:218).

## ICT and schools: a troubled relationship

Schools have been resistant to innovation, whether technical, conceptual or methodological (Papert, 1993, 2001, amongst others). Teachers are a conservative professional group (Lanier & Little, 1986). The growing use of technical tools, namely computers, is felt to be a threat to their knowledge, discipline and procedure control. To demonstrate the inertness of schools, Papert (1993) tells a story we would like to share with you. He invites us to imagine two characters, a teacher and a surgeon from the nineteenth century who come back to Earth to see what has changed in their professions. The surgeon observes an operation of some sort in a modern operating theatre but he would be unable to understand the various strange instruments and wouldn't be able to take the surgeon's place. On the other hand, the teacher introduced into a modern classroom would see the point of almost everything that was being done and could quite easily take over the class. He might disagree with some of the innovations, like group work or students behaviour and he would wonder about benefits in children's education.

However, since the 1970's, schools as well as some teachers have made several attempts to introduce ICT into the teaching-learning process.

One of the best known is *Computer Assisted Instruction (CAI).* Tutorials and drill & practice programs, now available on CD-Rom and even on the Internet, are the most representative of their kind. Most of these programs are designed to teach language and mathematical skills; there are currently programs on many other subjects.

They were based on behavioural theories of learning, mainly Skinner's operant conditioning, during the 1950's, when he developed programmed instruction (Skinner, 1953, 1968). In our point of view this is a relevant way of using computers in schools, because it's easier to adapt to traditional teaching and to social representation of what teaching and learning is about (the main objective of school is to provide and acquire knowledge and skills). The bulk

of research that was developed using an experimental approach, has shown that students that were using these programs, specially those who had lower academic achievement, benefited more than others who profit the traditional curriculum (Edwards et al., 1974; Kulik et al., 1980; Kulik et al., 1983; quoted by Hall, 1982), but these were also dependant on their teacher's commitment (Clemens, 1985). In fact, an effective use of these programs depends on the school organization and the teachers: their knowledge, their training, their methods and strategies of teaching, how they organize the classroom and activities and how they interact with students.

Another way is *to learn about computers and information technology – computer literacy*. In this perspective ICT is organised into one or more disciplines. This occurs mainly in secondary education and especially in technology courses. In this case, students must learn information technology and its practical applications and also programming, in one or more programming languages.

In the 80's and the first half of the 90's, Logo was the most popular programming language as much in Portugal as in other countries, mainly in primary and the first grades of secondary schools. Logo was selected for the task of promoting cognitive and problem solving skills, mainly in mathematics and geometry. However, research results were contradictory. Some researchers reported positive results (Clements, 1987; Howe & O'Shea, 1978; Fay and Mayer, 1994), others not at all (Pea & Kurland, 1984), and others mixed results (De Corte et al., 1992; Littlefield et al., 1988; Miranda, 1990, 1998; Noss & Hoyles, 1991). Logo should also be included in another category – computer as a tool or mindtool (Jonassen, 1996), due to the educational ideas of its creator (Seymour Papert); it's above all a programming language.

ICT is also used as new tool to engage in school activities and to reflect on the contents under study – *the computer as a tool or mindtool.* This category includes word processors, databases, spreadsheets, expert systems, multimedia and hypermedia construction, microworld learning environments and also some specific software like Cabri Géométrique and Geometer's Sketchpad, for learning Geometry. For us, this use of ICT is more interesting than others we have mentioned, mainly in primary and secondary schools.

This software can be applied to a variety of subject-matter domains and makes it possible to develop constructive learning environments (Jonassen, 1996; Perkins, 1993) where students and teachers play a more active role. "Learners are creators of knowledge rather than receivers of presentations" (Jonassen, 1996: 11). However this perspective is limited as well. Most of this software wasn't designed to be used for teaching purposes but for entrepreneurial needs (French people call it them 'professional software'). So, they generally don't take into account the different age groups and school grades. Some research results shows that this software can also be used in a root learning logic (Becker, 1989; De Corte, 1991; Fergurson, 1992). We should however say that although each programme is designed in answer to specific needs, its use in schools and classrooms depends on a wide range of factors in which the teacher's role is undoubtedly decisive. In fact, as research shows, there is no a 'teacher-proof' technology. Its use depends on teacher training, teachers' concepts about teaching and learning, ways to organise and to manage school activities, relations with students and colleagues and with knowledge and also with their capacity for innovation (Schofield, 1995).

The full integration of ICT in schools isn't confined to a technical process. People must feel the need and desire to use them; and we must know how to integrate them to their needs. It's a cultural problem not only an instrumental one.

A great number of teacher training schools, as well as some primary and secondary schools still don't include ICT into the curriculum in an active manner. Many things have been done, since the first national project of introduction of ICT into Portuguese schools – the Minerva Project[3], especially with the subsequent projects: Nónio Twenty-One Century Project[4] and Uarte

[3] The Minerva Project ran from 1985 to 1994.Its aim was to promote the introduction of ICT into Portuguese primary and secondary education. It was the first major national project in this domain, under the aegis of the Ministry of Education. It went through three phases, which correspond basically, to its launch, development and conclusion. Its goals were to equip the primary and secondary schools with computers (hardware and software), promote teacher training and develop research (and still design software adapted to the national curricula). For further information: Ponte, J. P. (1994*). Minerva Project. Introducing NIT in Education – Portugal*. Lisbon: depgef – ME.

[4]The Nónio Twenty-One Century began in 1996 and its main goal is to continue the activities of the Minerva Project. It is also under the aegis of the Ministry of Education. For further information: http//www.dapp.min-edu.pt/nonio/nonio.htm

Project[5]. But a good deal must still be pondered and done, especially in the design and practices of teacher training in this domain.

As we mentioned before, teacher training is essential for computers to be an effective teaching tool. A study report in USA (Gatewood & Conrad, 1997) revealed that only a few teachers in a relative small number of schools had been trained to maximize technology use in classrooms. After Haugland (1999), training opportunities enable teachers to build up skills and confidence and learning strategies to integrate computers into their curriculum. Epstein (1993) identified four critical components of training: practical experience, workshops, models and mentors, and supervisory follow-up.

In fact, teachers can and will integrate this kind of technology into their curriculum:

- if they look on learning as a lifelong process;
- if they are willing to learn together with their students;
- if they posses a strong motivation to integrate ICT into the curriculum;
- if they feel a supportive environment among stakeholders.

Students can learn more and better:

- when they are involved into new situations that allow them to overcome challenges;
- when they are given the opportunity to build something new in an active way;
- whenever they can use their knowledge in a relevant way, which allow them to build self-esteem.

Let us introduce you to an experiment that was developed in Portugal and which we have been involved in. Its main purpose was to include teachers in the design, development and assessment of a project they were interested and involved in.

[5] The Uarte Project began in 1997, under the aegis of the Ministry of Science and Technology. Its goals are to equip all primary and secondary schools with, at least, one multimedia computer connected to Internet and provides guidance and other forms of support to teachers and schools who want to develop projects related with ICT. For further information: http://www.si.mct.pt; http://atelier.uarte.mct.pt/

# The development of Web pages by project method
# Prom@tic project

This experience lasted three months and was developed on a project method basis. It involved nursery and primary teachers, students, parents and other community members. The main purpose was to use existing resources (both human and technical) and to rally the education community around a common meaningful project that could be the nucleus of multiple activities and tasks to be developed. Teachers chose to build a web page as a means to make good and proper use of the computers they possessed and develop a collaborative and shared teamwork. We are only going to mention the relevant aspects involved.

## Context and initial situation

This project took place in Manique Nursery and Primary School, in the Alcabideche council of the Cascais, municipality in the Lisbon area.

Manique is a village that has maintained some of its rural features: almost everyone knows each other and most houses still have a yard and garden. In the surrounding area, there are some apartment buildings, and more recently, welfare housing to. The resident children attend this school.

The school population is mainly of a medium to low social-economical background. Some children with learning disabilities and behaviour disorders have been integrated both in nursery and primary school and are periodically followed-up by specially trained teachers.

There is a single nursery classroom with a nursery teacher and eight classrooms in the primary school spread out in three buildings. The main building is shared by the nursery class and it is also where the cafeteria and kitchen are, along with the multimedia and teachers meeting room.

Both nursery and primary schools are state schools and, although they share the same facilities, they are independent.

Public institutions are under the aegis of the Ministry of Education but the extra curricular activities, supervision, equipment and building maintenance

are the responsibility of the municipal council. In this school, the Cascais town council has provided most information technology equipment and the computer with an Internet connection was given by the Ministry of Science and Technology.[6] We happened to find out that when we were undertaking this project, all the primary and secondary schools of this council had computers and Internet connections. As a further incentive, this ministry provides guidance and other forms of support to those who want to develop projects related with new technology. In the school and nursery where this project took place the four existing computers (one with Internet connection) are in an extra room were they were occasionally used by some teachers and never by the students.

However, long before the project began we noticed (after spending some time with them) that the teachers showed a great deal of interest in using the existing equipment, although some lacked the knowledge and others the know-how. The enrolment of all the teachers in an ICT training course – DidaTIC[7] – drew our attention to the importance given to ICT, although they were hesitant about using it.

This meant that although the students were the main target computer users, we had to intervene at the teachers' level in order to encourage them to use ICT.

With this in mind, we found a common way of developing a project that would promote in-training and that would activate teacher's interest around a common purpose: creating an Internet homepage.

As teachers, we recognise that professional communication among stakeholders is a main source of practical knowledge building among teachers (Sacristán, 1991). Continuous teacher in-training plays an important role,

[6] This ministry has since changed its name. Now it is called Ministry of Science and Higher Education.

[7] Didatic is a project concerning the Portuguese Language subject but where the participants use telematic support and resources to accomplish the desired activities. Teachers make use of their creativity in completing and creating learning materials for their students using the computer to perform tasks like: word processing; accessing, changing, saving and sending those files using the Internet; they have to navigate within the Didatic site, participating in the Forum, the Bar (chat), accessing, receiving and sending e-mail and perform research tasks. All this tasks enabled learners to get acquainted with the most common tasks performed by ICT users in daily life: to seek out, access and process information data and being information creators themselves.

because teachers are mediators of the student learning process, and along with their practices, are responsible for the students' learning process and their attitude towards knowledge.

Knowing this, we designed and proposed a project framework using two tables (logframe matrix and activity schedule) to provide everyone with a useful summary of the project. The success of this project relied mostly on the solid relational ties among stakeholders, in a constant process of reinvention, constructed by all, while the leadership was taken on temporarily by someone to ensure the achievement of common goals, in a *power with* instead of a *power over* relationship.

## Project development and monitoring

### With teachers

Firstly, and before we started the project, it was important to set up the conditions that would ensure its success, that is to say, create an environment of confidence and collaboration, of sharing both human and material resources, involvement and knowledge.

Furthermore we had to bring together expertise for future possible breakdowns. Therefore, through the Didatic Project, which everyone attended, we established support links with teachers from other schools and with those who were in charge of the Didatic Project. One of them made himself available to collaborate with us.

We were fortunate to benefit from the assistance of other people who though far away, were with us through the Internet and helped us to build the pages and to process the images.

We felt the need to find a way to help the team achieve the means to understand the goals of the project, that is to say, a conceptual framework to articulate and understand the process.

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The acquired knowledge was intertwined with the knowledge they got from prom@tic development project, in a self-directed learning way.

We took our model from the recommendations of ITAD (Information Training and Agricultural Development) for project design and created the Logframe. According to the EC (European Commission), the Logframe allows for a precise summary of the project goals, the indicators for its measurement and the main risks or problems that can prevent the attainment of the said goals.

In this model (Project Cycle Management - Logical Framework Approach), an instrument of project design and measurement, the Logframe is a frame with four columns and four rows (in its simplest form). Vertically, it identifies the aims of the project, clarifies the causal relations and specifies possibilities and uncertainties outside the scope of the project. Horizontally, it measures the effects and resources specifying the units and the means to verify them (table 1, in the end of the paper).

We tried to organise the whole process around three main goals:

- Construction of a school homepage:
- Development of several inter-curricular tasks
- Use of ICT to establish contact and exchange information between the school community and other schools.

Again using the model PCM-LFA for each one of expected goals, we staggered all fixed activities for the students and teachers and also the times anticipated for the conclusion of each phase. From this frame we built another table and we hope it will help to visualise our purposes (table 2, in the end of the paper). It unfolds the conceptual framework we presented before and complements it.

Let's return now to the development of the project.

By early April we held a general meeting to present an overview of the main aspects of the project. Previously, we had handed out some photocopies with the key points and also the conceptual and activities tables (table 1 and 2).

During the meeting all doubts were clarified, the Activity Plan was discussed and it was decided to include, apart from the nursery class, two of the three classes of the 4$^{th}$ year, the 3 classes of the 3$^{rd}$ year, one of the classes of the 2$^{nd}$ year and the 1$^{st}$ year class.

Discussing the project, we first brainstormed for ideas and came to important decisions on the homepage structure – composition, design and ways of navigation – and ascribing precise tasks to each one of the teachers. Within the outlined framework, each one of the teachers chose a page or specific task.

By mutual agreement, it was decided to create a common page, which we called the *welcome homepage* for the nursery and primary schools, identifying the two schools and providing useful data and some photos. Linked to this page, another's pages in chain were created. We decided further to preserve a space to Entertainment Activities and to the Parents Association and also to the Electronic Bulletin. Outlined the main actions and tasks of the project, it was necessary to begin the information data search to construct texts, graphs, and so on.

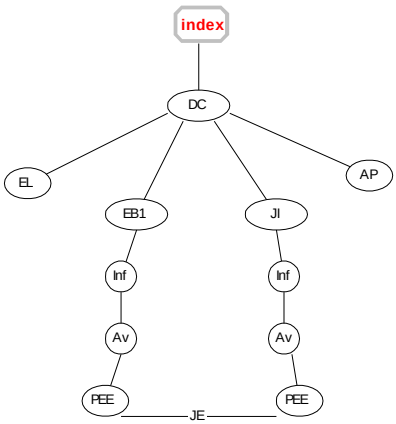
It was also necessary to choose an "easy" program to convert the pages and study and create a template adaptable to all pages. We also took photos of the school and had to learn how to use a program to digitalise them. Finally we had to find a space to place the homepage and use a program allowing the transference of files to a server.

It should be stressed that although each one of the participants was responsible for specific tasks, there was a lot of mutual help and exchange of information. As an example of this, the teacher responsible for the page dealing with the school educational project could count on the assistance of the creators of the previous project. She had also to learn how to use the drawing options of the Word program and how to transform a Word file into a Web file, by adding navigation options. To do all this she had to overcome her lack of knowledge on her own but also with her colleagues' help.

The process described above repeated itself in the case of each of the teachers involved, although at different levels. In my case, I had to learn how to build a matrix in Web format, to insert changes in this type of files, and later learn the program's logic for the automatic creation of files and the translation of instructions received to *htlm* format. During the process, the sharing of research, thoughts and findings was important. There was always someone around to help out and find the solution to a problem (by themselves or finding

outside help). Then, all the new knowledge and findings were shared, the problem was solved and it was possible to go on to the next stage.

Constructing the matrix took a long time. The initial idea was transformed and perfected mainly with relation to the navigational maps. It evolved from a linear branched navigation (Figure 1) to a net structure whose visual complexity is inversely proportional to its navigational ease (Figure 2)




AP – Parents Association
Av – Suggestions of Activities
DC – Common Data
EB1 – Primary School
EL – Entertainment Space
E-m – email
Index – Access Page
Inf. – Information
JE – Electronic Bulletin
JI – Nursery School
PEE – School Educational Project

Figure 1: Linear branched navigation

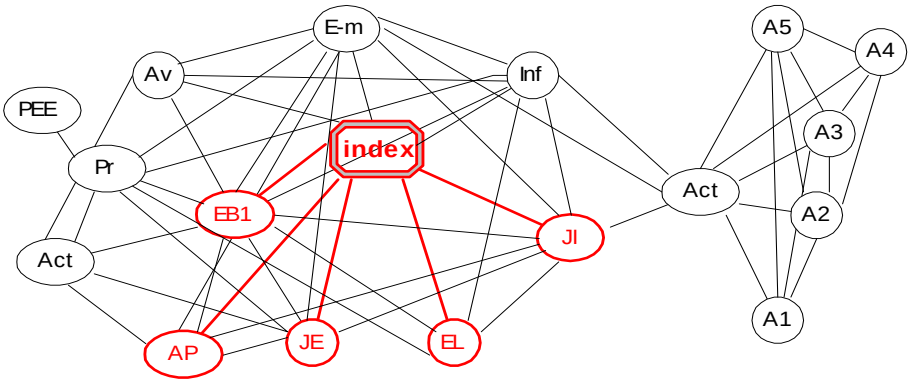



Figure 2: Network structure navigation

The teacher in charge of photos used a scanner to digitalise them with the help of a colleague. However, the images had to be converted into “smaller” files to avoid a slow downloading of the pages, something that always deters users. At this phase, the assistance of one of the consulting firms was invaluable. At their suggestion, more appropriate software was acquired. It was then possible to reduce the file size so as not to interfere with the page

opening. As not all the photos taken were used, we could keep them for future renovation of the pages.

From time to time the situation was assessed at a short meeting or whenever the team was together in the multimedia room.

All the written information available, e-mails and Internet pages relating to the project were posted in the teacher's room and multimedia room, so that everybody could access them and be informed of the current situation. This measure lead to everyone feeling very engaged with the project.

All the texts, photos and materials were kept in folders (the directories were opened in the computer connected to the Internet). This way all those who were taking part in the project could see what was happening. The file contents, texts, photos, graphics, drawings, cartoons, etc., were only added after the pages were completed and the links properly established, by using the current template.

**With the students**

The children from nursery school and primary school also took part in this phase of the project, using the programs available that were more suitable for their age and skills.

The nursery school children began by a drawing program. The drawings in *bmp* files were converted to *jpg* files so that they could be integrated into the site.

The children, mainly from the primary school, were active in the collecting and processing of information, so that it could be included in the site. They learned how to use a word processor and drawing programs to present the results and data from the environment, their study visits and the results of the contest for the school logo.

## Outcome of the project

The homepage consisted of seventeen pages with photos, diagrams, animated and non-animated clips, charts drawings, texts and student work.

On its completion, we found the need to place it in a server so that it could become of the public domain trough the Internet. To do so we contacted the Ministry of Science and Technology (MTC) whose web space Uarte is available to schools, teachers and students to show their projects on the Internet. After applying for the program, we were ascribed a web space to place our page with a login and password to transfer files to and from the server, and an address to access the homepage http://atelier.uarte.mct.pt/~pr1034/.

By this stage, it was possible to benefit from the direct support of Atelier Uarte, through their own homepage or by telephone. By following their instructions, we got the necessary software free off the Internet to transfer to the server the files and folders so that our homepage could be viewed.

In this way, we attained one of the most sought-after stages of our project. We tried to guarantee the continuity through another project with the co-operation of the students, which resulted in an e-bulletin, currently available on the Internet.

Our page is still available for everyone, including the e-bulletin published by students and teachers. Many of these are not the initial ones, as they have been placed in other schools. In order that they could continue the work we had to promote some training sessions (in its simples forms) and many took part in a new edition of Didatic.

In future many of them will be, in turn, placed in other schools where they will eventually be able to share their experience and knowledge.

## Final remarks

This experience shows that it is possible with computers and Internet to develop a wide range of training activities for teachers. Moreover, this example reveals (as well as other we took part in and another's which are under development elsewhere) common features.

In the first place they highlight the importance of interaction as a means of training and knowledge (interaction between teachers and students, between

students, between them and computers and between teachers and students on the one hand, as well as external partners).

Secondly, the main role of information search, critical analyses and the production of new information made available on the Web.

Thirdly, it the breaks down the barriers between the school environment and the outside, not only because sites are open to community on the whole but also because they enable diversified changes.

Fourthly, teacher training can take place at anytime because it's not constrained to individual or group class work.

Lastly, the training activity is organised around projects that are built and shared by everyone without being limited to any technical aspect.

We think this is not merely a question of personal style but of a concept of education that tries to reconcile the possibilities offered by ICT with a student-oriented pedagogy, encompassing exploratory activities, as well as in information data search and processing in projects. We know that ICT is used differently, for instance, to convey the same old curriculum with the very same pedagogic models, but using the Internet resources (like most e-learning courses that are now available).

The problem can't be focused on ICT but on their pedagogic framework (a pedagogy that enhances student-oriented, learning and critical capacities).

But along with the use of technology in school comes the need to provide youngsters and teachers with a true technological education. And as Postman puts it this will only be when they have been taught the history of the different technologies (pictorial ornamentation, alphabet, the typographic press, books, newspapers and magazines … of computers) and of their creators, their economical, social and psychological effects and even how they have rebuilt the world and still do. They should also be taught how to read, interpret and differentiate the different kinds of symbols of the information delivered. For instance, how do images and words differ from each other? A painting from a photo? The spoken word from a written text? Television from books?

For all this, with the technical and pedagogical learning of ICT we would need to create a technological subject to analyse how technologies invented by men "create new worlds for the best and for the worst" (Postman, 2002:219)

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**Table 1: Conceptual framework of the project**

| | Intervention logic | Goals | Assessment | Results |
|---|---|---|---|---|
| **Purpose** | Integration of ICT into the curriculum in an active manner | ▪ To augment the use of ICT by students until the end of the school year | ▪ Checklists of student ICT utilization | Develop projects and co-operation activities |
| | Involvement of school community in ICT's activities | ▪ To promote active learning by the use of ICT | ▪ Teacher's interviews | Develop relationships among teachers |
| **Results** | Construction of a school Internet site | ▪ To made avaiable the school Internet site in the server of the MCT until June 2001 | ▪ Begining of on-line school Internet site | Develop technique skills |
| | Development of several inter-curricular tasks | ▪ To create oportunities to develop subject-matter activities related to several knowledge domains | ▪ Lists of developed subject-matter and projects and also used methods and strategies | Develop personal skills |
| | Use of ICT to establish contacts and exchange information between the school community and other schools | ▪ To open information channels between the scholl and other members of the community | ▪ Open a Parents Association page section<br>▪ Opening a e-mail box | Establishing contacts with other schools |

**Table 1: Conceptual framework of the project (continuation)**

| | | | | |
|---|---|---|---|---|
| **Activities** | – Project lauching<br>– Establishing contacts among partners<br>– Selection of a core teachers team<br>– Develop tasks use ICT means<br>– Develop activities according to the general Education School Project<br>– Establishing contacts whith parents<br>– Creating texts for news and letters | ▪ To sensitise to the importance and impact of ICT on teaching<br>▪ To guarante extern support<br>▪ To assure the project development and its continuity<br>▪ To apply acquired knowledge and skills<br>▪ To intertwine the *prom@tic* with the school project<br>▪ To divulge the school Internet site among parents<br>▪ To divulge the project within the community | ▪ Work meetings and personal contacts<br>▪ e-mails and other written registers<br>▪ Work meetings and personal contacts<br>▪ Individual and group work<br>▪ Nursery and Primary classroom activities<br>▪ Distributed brochures about the project and organise parent meetings<br>▪ Sending articles to regional newspapers<br>▪ Sending e-mails to other schools | Develop a best perception of the school amongst parents and other members of the community |

## Table 2: Activity Schedule

| ***Result*** | ***Construction of a school homepage*** | **April** | **May** | **June** |
|---|---|---|---|---|
| **Activity:** | **1. Project launching** | | | |
| | 1.1. Diffusion of the initiative among teachers | | | |
| | 1.2. Diffusion of the initiative among desired partners | | | |
| **Activity:** | **2. Establishing contacts among partners** | | | |
| | 2.1. Bring together expertise and supporters to build the school homepage while the project lasts | | | |
| | 2.2. Deciding where to place the homepage | | | |
| | 2.3. Gathering information and data for the school homepage building process | | | |
| **Activity:** | **3. Selection of a core teachers team** | | | |
| | 3.1. Selection the classes engaging the project | | | |
| | 3.2. Ascribe tasks to teachers | | | |
| | 3.3. Ascribe tasks to students | | | |
| | 3.4. Deciding the homepage structure – composition, design and ways of navigation | | | |
| **Activity:** | **4. Training** | | | |
| | 4.1. Participate in other ICT training activities | | | |
| | 4.2. Develop in-training activities | | | |
| ***Result*** | ***Development of several inter-curricular tasks*** | | | |
| **Activity:** | **1. Develop tasks using ICT means** | | | |
| | 1.1. Text composition using Word Processor | | | |
| | 1.2. Drawings | | | |

**Table 2: Activity Schedule (continuation)**

| | | |
|---|---|---|
| **Activity:** | **2. Develop activities according to the general Education School Project** | |
| | 2.1. "Tazos"[8] championship | |
| | 2.2. Organised visits and school excursions | |
| | 2.3. Conducting search in the whereabouts | |
| | 2.4. Collecting and selecting information data | |
| | 2.5. School homepage logotype contest | |
| ***Result*** | ***Use of ICT to establish contact and exchange information between the school community and other schools*** | |
| **Activity:** | **1. Diffusion among students' parents** | |
| | 1.1. Create and distribute brochures about the project with the e-mail address | |
| | 1.2. Organise a parents team to collaborate in the Parents Association homepage section | |
| **Activity:** | **2. Divulgation of the initiative within the educational community** | |
| | 2.1. Receiving and sending e-mail | |
| | 2.2. Organise a forum | |
| | 2.3. Open links to other children's chat pages | |
| | 2.4. Open a Parents Association page section | |
| | 2.5. Diffusion of other school projects | |
| | 2.6. Diffusion and transfer of the pedagogical project results | |

[8] Tazos are small disks that come in crisps packs, that are used by students in play games