



## Case studies

### 14. Rossio ao Sul do Tejo Primary School and Chainça Primary School (D. Miguel de Almeida School Cluster Group), Abrantes, Portugal

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*This is one of 25 case studies produced for STEPS, the Study of the impact of technology in primary schools, to illustrate the impact of ICT, on schools, teachers and learners, and to highlight barriers and enablers to its effective use in the school. Further information can be found at <http://steps.eun.org>.*



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## 1. CONTEXT OF THE SCHOOL

The Mocho XXI Project was initiated by Abrantes City Council, funded exclusively from the municipal budget. Abrantes is about 160km from Lisbon, in the geographical centre of the country. It has both a rural and urban population.

## 2. EXAMPLE OF PRACTICE – THE MOCHO XXI PROJECT

The MOCHO XXI Project began in 2004, and so is now in its fifth year. The project was originally designed to support the effective use of portable computers in the classroom, using a gradually implemented and integrated training strategy. At present, the project is working with 80 primary school classes.



The planned allocation of equipment was one portable computer for every two pupils. The laptops used by the pupils were linked to the teacher's computer, and connected to the internet via a wireless connection. The strategy of having two pupils work together on one computer was also designed to promote co-operation and sharing among the pupils. There is one printer in each classroom.

The training of the teachers has always been considered a priority, and this has been provided in conjunction with the municipality's continuing training centre for teachers, ABRANFOCO. The City Council has supported and led training activities whenever necessary.

It was recognised from the outset that teachers play a central role in the implementation of this type of project. Two teachers were identified as being project leads, and have subsequently played a key role in all strands of the project from training colleagues and making materials available on the internet, to choosing and suggesting the software to make available on the laptops.

The most profitable year in the project's development was Year 2, when teachers participated on a voluntary basis. In Year 3 (considered the least successful year), all schools in the urban area were involved, which was where the oldest teachers and largest classes were to be found. In Year 4, the project was extended to the whole municipality. Both parents and pupils applied pressure to adopt portable computers in school, and more specifically in the classroom.

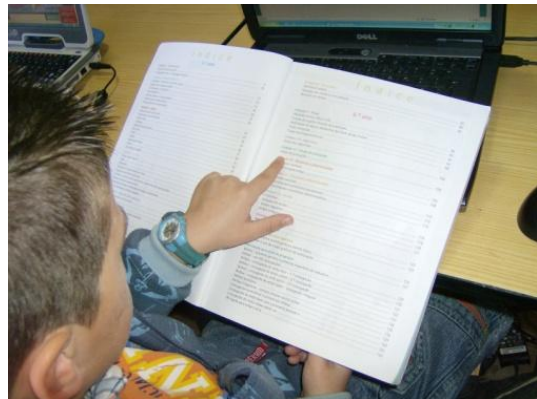
There were concerns from the Council from the outset about technical support. The availability of someone with a technical-academic profile was considered essential, on a full-time basis, to facilitate dialogue between the teachers and the City Council technicians. However, it has not yet been possible to reach an agreement with the Regional Education Board for a teacher with this profile to be allocated to the project. This has resulted in a certain delay in the resolution of some problems, and the technical support provided by the

City Council technicians is regarded as being insufficient. The Pedagogical Co-ordinator of the project provides some support on a part-time basis.

In terms of the technical specifications for the project, the teacher uses a Dell desktop computer with an Intel Dual Core processor and 160Gb of hard disk space. Pupils use Dell portable computers (models D510, D520 and D530), with Intel Dual Core processors (except D510), 1Gb RAM, and 60 or 80Gb of hard disk space. (The use of three different models is due simply to the development of the models during the three acquisition phases. There are no significant differences for the user, and all models can be installed in the same working environment). The teacher's desktop computer acts as both a file server and a print server for a black and white laser printer in the classroom. Each laptop is pre-configured to access the 'Work Folder', which is freely accessible to pupils. Printing from the laptops is only permitted with permission from the teacher.

An access point or wireless router, with an internet connection port through RCTS, is installed in each school. Broadband is available at a speed of around 2Mb, although this is significantly reduced in some areas of the municipality, probably due to the limitations of the physical network. A pre-configured software package also allows teachers to share their screen (for visualisation and interaction) with the pupils' laptops using VNC technology.

According to the Pedagogical Co-ordinator of the project, some pupils still lack the general awareness that the computer should be considered a common work tool, available at all times on their desk, and used whenever necessary. It is, in fact, considered essential for all pupils to familiarise themselves with the laptops as a long-term strategy for using ICT resources to support all learning activities. The computerisation of the learning environment aims to enrich traditional teaching resources and practice, and develop ICT skills, without imposing significant changes to methods of working or conflicting with the timetabling of specific classes.



Updating the software installed on the computers is the responsibility of the Council technicians.

Purchasing decisions regarding software is based on advice from the key teachers in the project, further informed by a survey of teachers' needs. The acquisition of software is funded by the City Council.

The use of portable computers in school is considered to be a touchstone as to the way children view computers: they are no longer seen just as 'toys' used to play games in their spare time, but are now seen as a tool for work also.

There was great concern about security of portable computers from the outset, with various security measures employed to prevent them from being stolen. Some schools even partnered with the National Republican Guard police station to keep laptops safe: before

arriving at school each day, pupils would pass by the police station to collect a laptop and return it again at the end of the day. In recent years, an anti-theft system has been installed on all computers which, in the case of theft, blocks them and makes them easily traceable.

Data which demonstrates a correlation between the use of ICT and results from national assessment tests does not exist, and it is not yet clear how this could happen given that all tests are currently paper-based and are not designed to assess the use of ICT. ICT could be particularly beneficial in allowing pupils with special educational needs to take these tests, but this potential is still to be explored.

Training is considered to provide the crucial opportunities for embedding ICT use in the National Curriculum, particularly in terms of sharing and reflection between teachers. More experienced teachers are encouraged to support those new to the profession.

## 2.1 THE SCHOOL CLUSTER GROUP AND ICT

At cluster-group level, there is no description of the ICT skills that pupils should master by the end of their primary schooling. In a way, these are embodied in the proposals put forward during training activities.

There is, within the cluster, an observatory whose function is to monitor and evaluate all the work that is done within it. It has recorded a significant improvement in pupil results, and school drop-out rates have decreased considerably. However, there is no evidence of any correlation between these results and pupil use of ICT.

The tools most used among the teachers for sharing and reflection are email and Moodle. In Moodle, resources created within a training context and intended for use by pupils in the classroom are shared. Blogs are heavily used as a way of producing and disseminating learning activities carried out in class.

Some activities have been used to raise both teachers' and pupils' awareness of issues posed by regular and frequent use of ICT, such as security, privacy and copyright. From the teachers' perspective, security issues must be dealt with as they arise, within a specific context. Work is only released on to blogs after it has been reviewed by teachers. One of the most experienced teachers uses Open DNS, a free program that filters internet access. No major safety issues have arisen.

## 2.2 THE VIEWS OF THE TEACHERS

Teachers have different experiences of working with ICT: while some have only been using ICT for the last year or so, others have been using ICT with pupils on a daily basis for five years or more. Teachers feel that, on one hand, it is easy to start working with computers in school due to the enthusiasm, willingness and skills of the pupils. On the other hand, however, these attributes have led to some problems. Having access to a more experienced teacher has greatly eased the learning curve of less experienced teachers.

At the moment, the teachers greatly value the independence of the pupils. Given the resources that have been made available, either by the Council or by national programmes

such as *e-escolinha*, teachers feel obliged to make good use of them. This has generally resulted in improved learning for all pupils: "There was a great change: primary schooling has been neglected for too long. We've moved from the metric box, the blackboard and maps on to computers".

However, the current situation with temporary accommodation is limiting the use of computers: technical problems often occur and are slow to be resolved.

Some newly qualified teachers say that they do not yet feel completely at home with the Mocho XXI project, finding that more preparation time is needed if using ICT for classroom activities, such as word processing, presentation and drawing software. However, although they recognise the unique place that books and hard-copy resources have in a pupils' education, they do tend to find them quite restrictive when compared with the scope of ICT to share resources and access material online.

ICT skills are learned in group work: the pupils teach each other to use computers. A strategy used by some teachers is to teach a new function or software program to a small group of pupils who then go and teach their classmates. Some teachers said that they often ask for help also, learning from the pupils themselves. An example of this was shared by one of the more experienced teachers, who has just learned from the pupils how the Magalhães (a first laptop) could be placed vertically, opening in a 'V', like a book.



In this way, pupils and teachers are helping each other to develop ICT skills and make best use of the available resources.

One of the more experienced teachers said that, when the City Council wanted to start the project, he was the only one who wanted to work with laptops in his classroom – a classroom in a rural school. He felt that great expectations had been placed on him, and this reflected on his work as well. In the initial phase he was helped by his friends and acquaintances. When he changed school to his present one, he felt that Mocho had 'abandoned' him since the new school did not have even one laptop. He thinks that his work is facilitated by technology and does not understand how you can work in a classroom these days without having computers available. He does not find it a burden to work with computers: computers are further tools that are available to be used whenever necessary. His greatest difficulty arises from the pressure from parents to use textbooks, like when they were students at school. Like computers, textbooks are another available resource, but have ceased to be the central learning resource for work in the classroom.

Another of the more experienced teachers thinks that ICT still consumes too much time: "...time seems to fly, there is a huge acceleration in the work of the kids...". This opinion is shared by a newly qualified teacher at the school.

### 3. IMPACT, BARRIERS AND ENABLERS - THE SCHOOLS VISITED

Due to ongoing refurbishment of the school campuses, both of the schools visited are working out of temporary premises while new premises are built. These schools are in the suburbs of the city of Abrantes and are of a similar size with 160 to 200 pupils in 8 to 10 classes.

#### 3.1 ROSSIO AO SUL DO TEJO PRIMARY SCHOOL

This school has 89 pupils, 5 class teachers, 2 support teachers and 4 assistants.

A significant amount of equipment is available at the school: typically one computer for every two pupils and, in cases where pupils already had Magalhães, one computer per pupil. There were two types of equipment in several classrooms: the equipment supplied by the City Council and the Magalhães acquired by families through the *e-escolinha* initiative.

The work done by the pupils in the classes visited was quite varied. Three classes were observed during the visit.

In one class, Year 3 and 4 pupils were seated at two large groups of tables, arranged around the centre of the room. Pupils worked independently, with all of them working on a computer, either alone or with another student. The pupils were posting text onto blogs, devising questions with multiple choice answers to pose to classmates; or accessing the Story of the Day site, reading the story and copying it to the word processor. Pupils were also consulting and working on the tasks set by Mister Mocho (an educational activity portal; the pupils participate in teams, responding to tasks set for each other and accumulating points); consulting the class blogs; producing films using Movie Maker to illustrate some research; and devising questions for a quiz. The pupils were very enthusiastic about the work they were doing and also demonstrated a high degree of skill in the work being done. The class teacher, the instigator of the project, said he had organised his pupils in this way to give an overall idea of the different uses of the computers in the classroom.



In a Year 4 class, pupils were working in pairs on an environmental studies project. Project themes were varied, but the pupils had guidelines prepared by their teacher to help them. In this classroom, the desks are arranged in rows, in pairs, all facing the front. Pupils showed examples of presentations they had made for other projects using a word processor and Movie Maker.

In a Year 2 class, pupils were working on a Portuguese language lesson on adjectives, using a word processor and lesson notes prepared by their teacher. Pupils were all working on the same activity and, although still in the initial stages of using computers, typically displayed a reasonable grasp of the computer. The desks were again arranged in rows facing the front.

### 3.2 CHAINÇA PRIMARY SCHOOL

This school has 144 pupils, 7 class teachers, 2 support teachers and 8 assistants.

Three classes were observed during the visit.

A Year 4 class was working on a class exercise on the subject of 'Rivers of Portugal'. Each pupil used their own computer to research the topic. The desks were arranged side by side, with all pupils facing the front. Besides research, pupils normally use the computers for writing texts, creating graphics, drawing, and for playing games. Playing games is one of their favourite activities on the computer, and is mainly done at home.



Year 3 pupils were seated in groups of five or six, with one computer per group. They were working on the 'Connecting Worlds' project: a European project involving collaboration with other countries, and with CIDAC (a Portuguese non-governmental organisation). The project comprises very structured activities for each year group, whose aim is to develop and share products, collaboratively, on the environment and sustainable development.

Year 2 pupils were sitting at tables arranged for groups of five or six pupils. There was at least one computer for every two pupils. Some were drawing with a drawing program, while others played an educational game, Sebran.

## 4. REFERENCES

- **Sources:**
  - The information contained in this report results from meetings held by the STEPS team and from visits carried out to two schools in the D. Miguel de Almeida School Cluster Group, in the Municipality of Abrantes, Portugal. One meeting was held with the management board of the Group and the City Council's Education Councillor in which general issues relating to the Mocho XXI Project were discussed. A further meeting was held with some teachers from the schools visited to supplement observations made during visits.
  - Interviews with project co-ordinators, ICT trainer and teachers, and observation of lessons.



○ **Further information:**

- Mocho XXI project (<http://mochoxxi.abrantes.pt/index.php>).
- Examples of school blog (<http://patosohador.blogspot.com>, <http://patojogador.blogspot.com>, and <http://textosdopatosohador.blogspot.com>).
- Mister Mocho educational activity portal (<http://mochoxxi.abrantes.pt/mistermocho/index.php>).

