Enhancing the teaching-learning process of young children by means of the ICT: the case of the UESC I - CPII

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Abstract: This paper is about the effort made by a public school to introduce widespread use of Information and Communication Technologies (ICT) into teaching and learning across the curriculum. Three meaningful projects are presented to example the whole work. Much can be learned from this single case, both by practitioners seeking to develop ICT use as well as researchers interested in taking the subject forward in other contexts.

Keywords: case study, collaborative learning, creativity, elementary school, integration of ICT

1. Introduction

Colégio Pedro II (CPII) is a public school located in Rio de Janeiro city with branches spread throughout 5 different districts in town and 2 outside the city. This sesquicentennial institution has a long history in introducing computers in educational process which began in 1985.

In a few words, at that time a group of teachers developed a project called “Informatics in CPII” aided by the Educom/UFRJ Project. In the following year it was created the Center of Studies on Informatics in Education (CEIE). In 1992, 4 computer labs were created. Finally in 1995 the Unidade Escolar São Cristóvão I (UESCI\(^1\)) computer lab was launched with a group of some engaged teachers who decided to make the computers an essential part of the entire teaching-learning process. Their struggle to use ICT to enhance and extend learning in most of the subject areas culminated in a variety of successful projects, despite all the difficulties that were faced. In this paper I will describe in brief three of those projects. Each of them was meaningful in the whole 13 years of the lab existence.

\(^1\) UESCI is a branch located in São Cristóvão, a district in the North Zone area.
2. Creating Home Pages

The first one was held in 1997, when the internet was just at the beginning in Brazil. There were few websites in Portuguese and the access was through a dialup connection in just one computer although there were 14 machines in the lab. The project was called “Creating Home Pages” and involved 12 students of 10-11 years who were at the 5th grade of the elementary school and attended the course in the opposite shift they studied. The main goal of the project was to develop research skills using the internet.

The students, divided into 6 groups, chose the subject they would develop, according to their interests. The themes were so varied and different as music, sports, diabetes and travelling are. All the steps were guided by one teacher of the lab who helped the children to organize their sites as well as to build the hyperlink structures in a concrete way, that is, they made the outlines in piece of papers. Only afterwards, they would write their ideas with Microsoft Front Page Editor. It is important to note that hypertext language was brand new for them at that time and one of the aims of the entire work was help the children to understand and to produce this new kind of text.

Despite the fact that the software was in English, a language with which they were not familiar, this was not the biggest difficulty faced by the group. Having just one computer with a dialup connection access to the internet was. Nevertheless they wrote the pages offline and afterwards the teacher uploaded them. All the sites remained online for one year as a courtesy of an internet provider, once there was not a host service supported by the institution yet. The website of the institution itself would just be launched one year later. The same teacher who developed this project had also created the first website of Colégio Pedro II.

The students attended 16 lessons of 60min each. They received a brochure with texts on issues regarding the internet: its origin, how it works, what a website is, how it is organized, how to edit a site using Microsoft Front Page Editor, how to make their sites known and finally how to make a research using the devices of the internet. At the end of the course, they answered an evaluation questionnaire regarding the contents of the project and its structure.

In this work, the teachers were convinced of having “create an environment in which all children could learn in ways more like the informal learning of the unschooled toddler than the educational process followed in schools” (Papert, 1993). Moreover teachers gave “so much autonomy to their students [are thereby] declaring their belief in a radically different theory of knowledge, one that entails far more work for them as well as their students.” (Papert, 1993)
3. Internet: No limits

It is commonsense that educators can make a better use of technology in educational process when they know which the possibilities are. Hence it is important to qualify the teachers within the educational environment.

At the beginning of the year 2000 it was installed a LAN in the lab, turning the internet available for everyone and enhancing its use. Considering all that, another extra class project was launched then – Internet: No Limits. It dealt with the integration of students, teachers and parents regarding the use of the web tools.

The project consisted of three independent units: e-mail, chat and search engines. In the first 2 classes of each unit only students attended the course. They were qualified to assist their couples, either a parent or a teacher. “Participants thought of themselves as teachers-in-training rather than as learners” (Papert, 1993).

A group of 12 students of the latest grade of the elementary school and 12 teachers or parents were involved into this project. At the beginning of each unit the participants were chosen by a lot. There were 18 classes for the whole project (4 for the first unit, 4 for the second and 10 for the last one). At the end of each one the students presented a seminar concerning the main topics studied in the unit.

In the first unit the participants learned how to manage an e-mail software (Outlook Express) and how they should write the messages. They could write to anyone they wanted but they were encouraged to exchange messages with other teachers and students as a way of getting all the school together by means of the WWW.

The second unit showed the learners a new way of communication, but for some reasons this was discarded later. On the one hand some teachers do not agree with the way people write instant messages. They are afraid that students misuse the language. On the other hand the network manager vanished any way of changing instant messages for security reasons.

The third unit was the most successful one because if one knows how to make a search and find out what is really relevant to his/her research then he or she learned how to learn. And this is the point for an effective learning: a lifelong learning. After all, “studying one's own learning process—[as the example of croissant making also shows]—can be a powerful method of enhancing learning” (Papert, 1993)

4. Creating a blog

The blog boom experienced in 2006 brought a challenge: how to provide a project to the entire class using the new web tool? It was interesting that the students
could be able to understand not only what a blog was but also how they could create one, and finally what it stood for.

It was a class with 26 students of 8-9 years in the third grade. “How does your school neighborhood look like?” was the title of the project developed by the class. They had been studying what characterized the different districts of Rio de Janeiro, with a focus on São Cristóvão, where the school is.

In the computer lab, they visited a couple of websites to know the neighborhood evolution, analyzed the changes of the main places by comparing photos taken at different times. In addition, they ran Google Earth to get a better idea of the localization of each district and even took a real tour around the neighborhood.

The idea of the project was to show the class that they could not only write some paragraphs on the blog to share their knowledge with other students but also ask them to comment about their own places, enhancing everyone’s learning process. The teacher who guided this project made the blog known by sending messages to at least 30 schools which developed similar works.

The work took 10 classes of 45min each. The students identified a blog structure by visiting a few blogs especially chosen by the instructor. In each class, two students wrote one post about what they had studied the week before. They enriched their blog with photos and pictures.

Such project was so successful that it was reported by Futura Channel. Then, we were really “convinced that the best learning takes place when the learner takes charge” (Papert, 1993)

5. Conclusion

 Those activities above are just a sample to illustrate the effort made by the educators on carrying out a work that really contributes to “produce rich intellectual environments in which not only children and teachers but also new ideas about learning would develop together” (Papert, 1993)

 People engaged in the lab work absolutely believe that “a relevant education is more important today than ever, because today’s Networked World demands a workforce that understands how to use technology as a tool to increase productivity and creativity”.(Hawkins, 2001)

 Thus they had been organizing a set of classes that could contribute to a meaningful learning process, such as: educational games, simulation software activities, e-mail exchanging, information searching, site visits, and even drill and practice software. Those activities may not be as meaningful to a global teaching-learning process as the projects are, but they can motivate the students to learn more and to enhance their knowledge.
The main focus of computing in the educational environment at CPII is based on multimedia projects as long as such activities develop “the skills necessary to collaborate, work in teams, and share information across global networks, that is, to analyze issues from a multidisciplinary perspective” (Hawkins, 2001). Moreover the students really get involved in the work and “the child learns better when he or she is free to find out relations for him or herself, instead of being directed instructed” (Valente, 1993)

References

