Presentation note

ICT and Curriculum Innovation

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The third number of Sísifo is particularly dedicated to issues related to technologies and learning in a perspective of curriculum innovation. It comes at a time of great change namely in terms of the power of information and communication digital technologies and after a period of renewed excitement on their use and integration into school.

Change because the advent of the Internet made finally possible to implement ideas only imagined by a few visionaries, which at least potentially can be of great value for the pedagogic and didactical fields.

Renewed excitement not only because they are believed to contribute to change the face of school as we know it today, as happened in the past with other “new” technologies, but also because, as defended by the most optimistic, they have the potential to solve the problems school is now facing and apparently with no solution in sight.

As several authors evidenced, reality has nothing to do with this (Cuban, 1993, 2001; Franssila & Pehkonen, 2005; OECD, 2005; Paiva, 2002; Pelgrum, 2001; Wallin, 2005): no matter how powerful computers can be, it is not enough to add more computers to make things change in a way to enable us to profit from their most valuable feature: construction of knowledge by the pupils themselves.

Although the proliferation of computers has already somehow changed the face of school, educational practice is held to continue the same as before the use of computers (Papert, 2000), at least in its essence, in what is known as school defining features: teacher - pupil power relations, the relationship of both with knowledge, the way knowledge and learning are perceived; and last but not least the role of means in information transference and knowledge building.

The teaching paradigm and the processes of learning stimulation continue to be the same as before, in spite of an emerging idea on the meaning of learning and a new rhetoric favourable to the adoption of ever improved alternative strategies, resources and infrastructures.

This is also what happens in Portugal, one of the European countries where pupil-computer ratio is higher (about 1 computer for every 15 pupils) and with lower rates of teacher preparation for the use of technologies (European Commission, 2006). Nothing to wonder about considering there is no particular attention paid to this field either in initial or in continuous teacher training (Brito et al., 2004; Matos, 2004; Ponte & Serrazina, 1998).

Paradoxically or perhaps not, it’s the youths who seem to take the most of available technologies, autonomously and with no help from teachers, using them to reach much further than school learning and doing this with a surprising level of effectiveness as evidenced by several national and international studies. This is for example the case of the outcomes of a questionnaire applied with PISA 2003 (OECD, 2005), where Portuguese fifteen-year-olds occupy interesting positions in the rankings related not only to attitudes but also to knowledge and skills needed for the use of digital technologies. Knowl-
edge and skills almost always ignored or undervalued by school, therefore contributing to deepen the gap between school supplies, pupils expectations as for what school should supply, and the true power of technologies in present society.

Though dealing with widely different features, the articles included in this thematic dossier have as their common denominator the aim to contribute to the reflection on issues emerging from the use of digital technologies in Portuguese schools. This reflection is not only grounded on individual perceptions about the implications of technology integration into educational contexts, but it is also grounded on research conducted in Portugal, namely within Master’s programmes and within concrete projects of computer integration into school environments, from pre-school to vocational education. Projects including the most recent network technologies and a reflection on their pedagogic potential, along with an analysis of teacher practice or didactic projects in specific subjects such as Physics and Chemistry. Put another way, this dossier could count on the contribution of colleagues from widely different areas of interest and research fields which therefore represent the diversity of approaches that has characterized this field for the last few years.

In the first article, Fernando Albuquerque Costa draws an analytical synthesis of Master’s theses conducted in Portugal in the field of Educational Technologies within the last twenty-five years, providing an overview of research undertaken, methodologies used, main research objects and technical reference frameworks while enabling us to understand to what extent research affords opportunities for school development.

Focusing on the potential of the Internet for educational purposes, Ana Amélia Carvalho leads us through a research-based overview of the different types of resources used and issues arisen in the introduction of the Internet into educational environments, of most recent online tools as is the case of learning management systems, and of what has been lately known as social software.

Lúcia Amante focuses on the use of ICT with very young children, namely in Kindergarten education, trying to identify both the legitimating reasons for computer integration at so early a stage and some of the factors to be taken into account in this process.

In the same sense of an early intervention though with gender equality concerns as for access and use of technologies, in the article that follows Ana Maria Veiga Simão, Elisabete Rodrigues e Belmiro Cabrito tell us about the work carried out within an international project involving different institutions, which had early technical education as its core element.

The sixth text by Helena Peralta and Fernando Albuquerque Costa is also the result of an international project aiming at studying teachers’ competence and level of confidence in the use of new technologies for educational purposes. This paper provides the outcomes of a qualitative study that laid the foundation for a broader research project aiming to compare different realities from different countries involved.

Cristina Costa describes an online community of practice for teachers of English as a Second Language where curriculum development plays the central role both as a meaningful learning resource and as an in-service teacher training strategy.

The last paper in this dossier, written by João Paiva and Carla Morais, provides a brief description of a study where pupils are involved in experimental work in Physics and Chemistry, mainly relying on digital simulation.

Such as in previous issues, one review will also be published to complement this thematic dossier, along with the text that served as a basis for a Conference by José Luis Rodríguez Illera from the University of Barcelona, which was held in May 2007 in the Faculty of Psychology and Educational Sciences of the University of Lisbon.

Life on the Screen by Sherry Turkle is reviewed by Mónica Raleiras who presents us with a rich text about identity issues in the age of the Internet. Turkle’s work is already available in Portuguese and maybe only now we are prepared to fully understand it because virtual environments and their implications are now more familiar to us, both from a personal point of view and from an educational point of view.
The unedited text of the conference uttered by José Luís Rodríguez Illera about virtual communities of practice analyses the core concepts that have been grounding the development of this issue over the last few years, linking it with a new perspective on the concept of learning and discussing its implications namely for education and theory of education.

Bibliographical references


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