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Since the introduction of ICT in education, schools have been faced with a new social and cultural phenomenon that challenges teachers and students in relation to their technical ability, knowledge and expertise in the use of information and communication technology (ICT).

Young people (i.e. the so-called Net Generation) are usually considered to master these technological devices better than adults do. They adapt quickly to technological changes and feel at ease with new releases of software and hardware. The difference between this “Net Generation” and the generation of their parents is often referred to as the “generation divide”. Teachers also have to deal with such technological changes. During our two-year observation for the Emile project, we have wondered whether it would be appropriate to talk about a “generation divide” also between younger and older teachers, in spite of their different opinions, attitudes and degrees of ability and willingness to adapt to and use ICT. In the near future, in fact, in all European countries a large percentage of the teaching workforce will be retiring from the field of education.

This paper will give an outline of the results of this inquiry. It will argue that rather than in terms of a collective generation phenomenon, differences in perceptions and attitudes towards ICT should be addressed according to the personal history and professional background of each individual. Thus, with specific ethnographic examples, the paper will also discuss the importance of taking into account the institutional support given to teachers as well as the working environment in which they operate. The important issue may be not one of “generation divide” so much as “implementation divide”.

#### **Investigating the “generation divide”: an overview**

In the course of our research in the different countries covered by the Emile project careful attention was paid to potential issues of generational difference between teachers of different ages. This issue was investigated both through participant observation and through informal interviews. The key findings of these investigations were that attitudes towards ICT among teachers varied enormously from fear, scepticism and indifference to wild enthusiasm and excitement.

For instance, the new generation of young teachers presented a more homogenised level of ICT skills since their educational background and training path included ICT training by government decision (Scotland, Sardinia, Greece). However, although younger teachers were generally likely to have received training in ICT there was no clear age division accompanying this range of attitudes. Older teachers could be the most enthusiastic and younger teachers the most fearful.

Although it was true that some older teachers considered themselves too old to be learning new tricks and some stuck doggedly to old methods, it was nonetheless also found that older teachers could reveal greater patience and tenacity in the acquisition of new skills. At the same time some younger teachers could feel overwhelmed by the expectation that they should be more knowledgeable about ICT because of their age.

These findings led us to conclude that the issues of age difference and “generation divide” were not in themselves particularly useful tools of analysis.

#### **Attitude and professional history of teachers in relation to ICT**

The issue of a “generation divide” among teachers is not a clear-cut question in the daily reality of teachers operating with ICT. Yet, although this topic turned out to be only partially relevant, the inquiry itself nonetheless revealed other interesting aspects of ICT. For example, we noticed that in all schools participating in the Emile project old teachers were more willing and eager than young teachers to show their ICT skills and engage with them creatively. Indeed with old teachers they either loved or hated ICT in contrast to young teachers who often regarded ICT with boredom or did not show any enthusiasm for ICT. This attitude emerged in Sardinia and France. Particularly in these two countries, some old teachers were absolutely brilliant with ICT although they had not received proper ICT training in school and were mainly self-taught people. A Sardinian secondary school history teacher in his late 60s explained:

“I respect and acknowledge the quickness and readiness of the youngest in the use of ICT. I am old but I try to catch up as much as possible with the latest changes in ICT both in hardware and software. Sometimes I even stay up very late at night to learn more things. I buy and read special ICT magazines to keep informed. I also search on the Internet if I find manuals on some new web authoring software... I do not feel ashamed to ask for help to some of my students. Some other teachers do. If students are better and more computer literate than us I do not see why we should not give them more space...”

One example of how young teachers experienced ICT in school, in spite of their expertise, is given through the opinion of a young Sardinian physics teacher in her early 30s:

“I am becoming more and more bored with the use of the Internet in education and believe there are more exciting things to do, for instance, with practical experiments in physics. I think that sometimes it is more challenging to experiment with things in reality rather than looking at CD-ROMs or virtual experiments on the Internet.”

She was also convinced that technologies and ICT were to be seen as tools and not as an end. She was concerned that the ways in which people conceived the Internet were closer to the latter. This teacher clearly showed some scepticism towards the use of ICT as a fashionable experience in education and questioned the pedagogical value of ICT for her subject. She argued in favour of a more frequent use of conventional equipment and laboratories to understand physics more concretely and added that these experiments were useful to help students write graphs and reports on computers. Being an expert on ICT thanks to her personal and educational background meant for her a certain valued position within the school. However, in spite of that she increasingly dismissed the use of computers for pedagogical purposes.

Power was another issue that emerged throughout the inquiry about age. In other words, ICT became the status symbol of a power position for those who managed ICT well and had good computer skills. In some circumstances ICT represented for old teachers an opportunity to state or claim a position of power and respectability among their colleagues, where extolling their own individuality and expertise in front of young colleagues. In Sardinia some elementary school teachers used ICT to create their own domain of power and by doing so they inevitably split teachers up into factions. Also in France ICT was a device to acquire power among teachers, particularly in the case of male teachers who used ICT to show up technological and technical expertise to their female colleagues. In Scotland a few cases of defensiveness of one's knowledge, skills and expertise emerged and moments of friction among teachers turned out to have ICT as the main cause/reason of dispute.

In relation to power, the question of management of the computer lab also resulted in a power-game among some teachers. This occurred in Sardinia, Greece and France. In these cases teachers who claimed positions of authority and power through ICT were mainly old

and male. In France maths teachers outnumbered other teachers in assisting their colleagues in the computer labs in their spare time. As we highlight later on, the lack of professional and technical assistance in the computer lab contributed to empower these old teachers and affected personal relationships among teachers (France, Sardinia, Hungary). Collaboration and good relationships among colleagues were also relevant and had an impact on how teachers effectively introduced ICT in their curricular activities (see issue no. 8). In other words, good networking and productive relationships among teachers enticed sharing of ideas and practices that in the end improved teachers' confidence in, and attitude towards ICT (Hungary, Sardinia, Scotland). Differences in attitudes of teachers towards ICT depended also on their possibility to engage in peer-to-peer networking and to exchange knowledge and experiences.

The “generation divide” was not an issue in Norway either, although in the next five years almost 40 percent of the population of teachers will retire and a new wave of young, well-trained teachers will enter education with a new spur of initiatives and pedagogical methods. Such a great change of teachers in the near future will not be considered as a problem at a local level but it will be relevant broadly at a national level.

To conclude, overall and in spite of age difference, positive attitudes towards ICT depended most of the time on the personal history of each teacher and their personal experience of ICT training in school. This triggered also their willingness to share with their colleagues their ICT knowledge and expertise. It is in the face of all these emerging issues that we looked more closely at the institutional conditions of work with ICT of teachers.

### **The institutional context**

The institutional context of schools was an important factor affecting the use and implementation of ICT. The technical support and assistance as well as the level of ICT training afforded to teachers constituted the main source of appreciation or rejection of ICT by teachers, in spite of their difference in age. Lack of ICT co-ordinators was also fundamentally a problem because teachers did not have a knowledgeable institutional figure to rely upon to seek ICT assistance. A Sardinian secondary school art teacher in her late 50s explains:

“I wish I had more time to improve my computer skills. I am sure that if I had more training in school I would appreciate more the use of the Internet in the classroom.”

In some cases, teachers took lack of ICT knowledge and improper ICT training by local authorities as an excuse not to engage with computers. This occurred in Sardinia, Scotland and Hungary. Particularly in the case of elementary school teachers, motivation and incentives to work with ICT were quite low if they were not guaranteed proper ICT training and technical assistance (Hungary, Scotland). In France the question of independence and autonomy of teachers in deciding about their professional training (l'honneur) constituted a relevant issue when teachers were offered ICT courses. In some cases, French teachers' attitudes did not entice a homogenised level of computer skilled teachers in school.

In general, however, old teachers welcome with discretion the opportunity to acquire ICT skills through courses organised by local authorities. However, above all, the chance to have a computer at home was quite significant for old teachers since they could practice with the computer at length and out of their colleagues' eyes (Sardinia, Scotland). In this respect, the different levels of availability of resources both in school and at home turned out to be crucial factors making older teachers feel at ease with computers. Here is the example of a Sardinian middle-aged female Italian teacher:

“I try to keep updated with news on ICT through special journals that my husband also buys. He actually helps me quite a lot at home, when I do not know how to do things with ICT. I followed a private course and basically I taught myself ICT with the help of my husband. I have recently also followed a course on ICT to acquire the European licence. I am open to any new initiatives where ICT is involved but in this school, unfortunately, we do not find a lot of support. I wish we received more support from the Ministry of Education and also from the school, i.e. through courses on pedagogical uses of ICT.” The institutional context played again a relevant role because the lack of technical and pedagogical support affected the confidence of teachers who did not have a computer at home and therefore could not improve their skills (Hungary, Sardinia, Scotland). Most teachers, in fact, demonstrated themselves to be quite independent and creative in relation to ICT but this was always left to the personal initiative of each teacher. The lack of a regular technical assistance often turned out to discourage their willingness to experiment with ICT. The provision of a systematic pedagogical support on the use of ICT would make teachers more confident with ICT regardless of age.

### **Conclusion**

During our inquiry on age difference of teachers, defined in terms of “generation divide”, we concluded that age was not an issue per se and it did not affect the ways in which teachers engaged with ICT in any uniform or systematic. We highlighted the importance of looking at the personal history of each teacher and considered that their background and ICT training played a crucial role in shaping their attitudes towards ICT. The institutional environment was also a crucial element. Lack of technical assistance and professional advice in school particularly affected teachers who did not feel at ease with computers. Above all, however, ICT training emerged as a topical question that determined quite considerably teachers' willingness to engage with ICT. Technical and professional support from the institutional environment turned out to be crucially important particularly for teachers who did not have computers at home and therefore could not improve their ICT skills easily in their own time. The article correspond to a research held into [EMILE](#), a Socrates - Minerva supported Project about intercultural analysis on ICT usage in schools from France, Greece, Sardinia, Scotland, Hungary and Norway.

Silvia Ferrero is an independent anthropologist who has carried out research projects in the field of interculturalism and multiculturalism in transnational and educational environments. The main themes of her research have included issues of class, ethnicity and identity as related to youth and immigrants in educational institutions. In recent years she has devoted special attention to relations of authority, gender and generational conflicts in education related also to the use of information and communication technologies in schools. She is also a director and consultant of [Eight & Eight](#) a consultancy company in the field of media and new communication technologies.

Additional information: The article correspond to a research held into EMILE, a Socrates - Minerva supported Project about intercultural analysis on ICT usage in schools from France, Greece, Sardinia, Scotland, Hungary and Norway. Silvia Ferrero is an independent anthropologist who has carried out research projects in the field of interculturalism and multiculturalism in transnational and educational environments. The main themes of her research have included issues of class, ethnicity and identity as related to youth and immigrants in educational institutions. In recent years she has devoted special attention to relations of authority, gender and generational conflicts in education related also to the use of information and communication technologies in schools. She is also a director and consultant of Eight & Eight a consultancy company in the field of media and new communication technologies.