Digital natives vs. digital naïves:  
Which role for the school?  
An analysis about the French case

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Abstract: In the past years, in France as in other countries, a growing attention has been given to the younger generations, which are often called digital natives because they are generally supposed to be proficient in ICT and to require no specific education about technology, because they were born in the “digital culture”. To what extent is this phenomenon real? Which new challenges does it raise for the school? This paper, which mostly draws upon a recent work realized for the OECD – CERI discusses the problem concerning France. There is a growing concern about the hazards adolescents may face with the Internet, policy-makers explicitly consider competencies that everyone should possess and issued regulations accordingly, which are not easy to be really put into practice. On the other hand, youngsters are often rather strategic with ICT and use them for what really interests them. But they are far from being naturally technology savvy and require attention from the compulsory school system. An issue, then, is to insure that this system may cater to their needs and offer them, particularly to kids from modest backgrounds, the necessary support.

Keywords: Learners, ICT competencies, compulsory education, France

1. Introduction

Many discourses have been issued about young generations qualified of digital natives or “new millennium learners” (Pedro, 2006). Prensky (2001, 2001b) has probably been the first to make the point that “our students have changed radically. Today's students are no longer the people our educational system was designed to teach” and that a “big discontinuity” has occurred with the dissemination of digital technologies. On the other hand, Bennett & al (2008) are
among the last published academic paper challenging this view, since that, relying on an analysis of literature, they contend that “there is no evidence of widespread and universal disaffection, or of a distinctly different learning style the like of which has never been seen before” (p. 783).

This paper is based on a study we have recently led for OECD – CERI about these issues concerning French speaking countries, in order to try obtaining a realistic snapshot of the current situation. In a first part, we shall summarize the main results about ICT and new young generations, focusing on France and on the issue of competencies. In the second part, we shall consider what is relative to the school. Finally we shall analyze some probable trends and perspectives.

2. Young users and ICT: several perspectives

A notable fraction of available data about the appropriation of ICT by younger generations comes from surveys sponsored by statistical bureaus, but also by telecommunication companies, Internet access providers, and enterprises. In this latter case, the studies have been made with a marketing objective, an interest in identifying promising markets, among which the market of children and adolescents.

2.1 Digital natives as potential commercial targets

Perhaps one of the main results is that young generations are great Internet users and can be an important impulse for parents to buy computers or high-speed Internet access.

Recently, a European study by EIAA (2008), realized with a marketing goal, has studied some of the activities people perform on line. According to it, the time spent in Europe on the Internet greatly varies according to the fact that people have or have not children. Families connecting to the Internet, named in the report “digital families”, massively used broadband access (84%). Quite logically, people with very young children rather visited health and film websites, while those between five and nine were going to games sites and those living with older children seemed to be more technically advanced.

Another study from the same institution suggests that French families are very active on the Internet; and that this fact opens “infinite possibilities for the brands wishing to address this target”\(^1\).

Thus, parents have to try to keep pace with their children. They become more aware of the possibilities of the Internet. Some of them are probably themselves digital natives… An interesting point is that 47% of the surveyed parents thought that Internet puts them in a position of control (42% for adults without children).

\(^1\) http://www.eiaa.net/news/eiaa-articles-details.asp?id=167&lang=2
TNS media intelligence, a business intelligence company, has presented the concept of *Ado techno sapiens* and has given some description of his/her characteristics especially his/her multitasking profile. A 2008 study\(^2\) splits the 11-15 years old in five groups: tech-in-touch, techno-lite, ado techno sapiens, hard-core gamers and techno starters.

Another important element, now very present, is linked with the new risks and hazards that should be challenged regarding youngsters and the Internet.

### 2.2 Risks and hazards

The fact that risks are linked to Internet usage has suddenly risen at the beginning of the XXIst century. In the USA, an important report was published in 2000 by the Alliance for Childhood (Cordes & Miller, 2000), followed by another in 2004) warning parents and the society about the new risks sparked by the dissemination of ICT. Similar concerns have, more recently, been expressed in European countries. In France, in 2005, a conference about childhood protection and Internet use, organized by the Ministry of solidarities concluded towards the need to alert the public, to render more secure the navigation on the internet and to build a sustainable protection of children regarding this media (Thoraval & al., 2005). A French study (Martin, 2007) about adolescent and the Internet confirms the role played by parents for young children and, hence, the importance of the social milieu.

Recently, an official report by the cultural commission of the French Senate (Assouline, 2008) has drawn the attention both on the risks implied by the extension of new medias and promoted the idea of educating the young generations (who are considered as able to master the new technologies). This report has presented a series of proposals, among which the interdiction for minors to use webcams in chatting activities without an authorization by parents, encouraging the use of parental control software and, regarding the school, creating a media education module (10 annual hours both at grade 8 and 10).

Among the perceived risk is the possible addiction to games. Video games have been around quite a lot for a number of years, first on games consoles plugged unto the TV set, then on computers and finally on sophisticated mobile devices, even on mobile phones.

### 2.3 The special case of video games

Studies specifically devoted to students’ habits confirm the importance of gaming. Some are abundant players and some become “cyber dependent”. They have lost their freedom and are unable to control their time. Those hard gamers are giving a

central role to the game they play, despising those who do not play, do not communicate any longer… Addictive effects have thus been abundantly been reported. However, Nachez & Schmoll (2003) observed that video games also offer possibilities for learning sociability. Hayez (2006) relying on a clinical research, remarks that games may have a positive effect, because they offer ways to vent off negative impulses, to express one’s internal potency and even to communicate.

From a sociological perspective, authors like Tremel (2007), taking a historical perspective, elaborate on the fact that games are cultural products and as such reflect an ideology. He suggests that contemporary video games convey values, mainly linked to the values of management, which may exert important influence on adolescents and reinforce stereotypes.

The current interest of the market stakeholders is towards educationally games, which can be bought by parents worried by school success of their children. Very recently, a series of new research has been launched on this issue, under the heading of “serious games.” The effect of such games on students is still largely unknown.

Noteworthy among the issues studied by research is the presence among the themes explored by studies of gender equity issue.

### 2.4 Which gender differences?

Many studies report differences between boys and girls, mainly concerning the activities they perform with computers. Gaming is one point, but other differences are regularly reported. In France, in 2003, Josiane Jouet made a remarkable synthesis on the research about gender and communication technologies. She proposed to study the rapport between ICT and the society, remarking that: “neither gender nor technology determinate technology usage and huge disparities exist between women, according to their social status, their level of education and their age” (p. 68). For her, new possibilities are opened by communication technologies that “tend to blur the traditional social landmarks of face to face and oral communication and the tags of social status, race and sex” (p. 76).

Remarking that technologies may bring an inversion of existing stereotypes, women tending to be more rational in their technology uses than men, she insists on the fact that the social construction of gender is evolving and concludes on the urgency of leading new research, on account of the fact that existing studies are

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3 See [http://www.ludovia.com/](http://www.ludovia.com/)

often “piecemeal and locked in binary categories that hinder to take into account the flexibility of technology and the fluidity of gender” (p. 83).

Since 2003, there has been a growing interest for studying gender differences regarding the appropriation of technology and a limited number of studies devoting themselves to the specific case of adolescents.

For example, Sylvie Octobre has published in 2006 the results of a study launched in France in 2002 about the leisure of 3300 youngsters aged 6-14. She explains videogames tend to be preferred by boys and audio devices by girls, those latter tending to generate more exchanges. The author insists on the crucial importance of “socialization agents” (parents, teachers, group of peers). It concludes on the pregnancy of intergenerational schemata regarding leisure choices.

In her PhD dissertation, Céline Metton (2006), studied the process of becoming a grown up. Her study is focused neither on gender nor education but on the process that takes place at adolescence, but it also considers gender issues and problems of education. She considered pupils in a junior high school, in their family and in holiday camps.

Remarking that communication technologies offer a space of autonomy to adolescents, she found the presence of common stereotypes (a predominantly male technological sphere and a predominantly female communication sphere) and remarked differences in activities and competences between boys and girls, insisting on the fact that differences are subject to a fabrication process, initiated within the family.

One specific feature of ICT, communication technologies, is precisely the fact that stereotypes have hardly had the time to blossom in this field, letting therefore relatively open the perspectives of evolution. This is a domain where more research is necessary.

3. Digital natives, learning about ICT and the compulsory school

3.1 The problem of competencies

When grown ups look at what students do, they are often puzzled by the ease with which they play, search the internet, blog or discuss on modern communication systems. To what extent are they really proficient?

A study, led in Europe and in Québec, Mediappro, (Piette & al, 2007), has both, in 2005, submitted a questionnaire within schools to 7400 students in Europe and 1350 in Québec (split in three age groups: 12-14, 15-16 and 17-18) and interviewed a sub-sample of 240 people. A great majority of respondents said they used Internet at home, with variations according to countries. Surveyed activities mainly were search engines, communication and downloading, all of them very popular. Results show that kids often use search engines to access websites they
already know and that, in Europe, Internet seems to be a tool for reinforcing pre-existing relations and activities. Despite their important practices and interest towards the internet, students did not always seem to master notions and terms which could allow them to describe and explicit their practices or to build their own view of these medias.

Ethnographic studies offer complementary views. In France, Giannoula & Baron (2002) led such a study by observing children activities both in the classroom and at home. Their principal working hypothesis was that children’s relations with home computers were likely to influence their expectations toward school. Results suggested that if the know-how acquired at home can sometimes compete with competences likely to be acquired at school, their scope is limited and they seem to be insufficient to insure any form of mastery in the use of computers; of informatics, in particular for lack of directed conceptualization.

Cédric Fluckiger, in his PhD research (2007) studied, from an ethnological point of view, the appropriation of ICT by adolescents aged 12-16. He showed that children usually have low levels of conceptualization and a very poor vocabulary. Their relationship with their computer is a strong one, but they have a very limited range of uses and no mastery. They do acquire skills by practicing again and again the same operations. But they rarely conceptualize what is really happening and may get lost when something goes wrong. In such a context, the courses of technology, a compulsory subject in junior secondary education, was the main source of information and conceptualization for those not coming from upper social milieus.

The DidaTab project⁵, a three year project (2005-2007) funded by the French Ministry of Research was dedicated to the study of personal and classroom uses of spreadsheets in the French context, not only taking into account their declarations. The study showed a general lack of competencies of students. In average, students’ mastering of spreadsheets was found to be very low. Most of students are not able to efficiently use spreadsheets in their usual school activities (Bruillard et al., 2008).

As we have seen, the picture is rather complex and the image of young geniuses doing what they want with ICT and Internet is deceptive. In sum, without a special action either from the family or from the school digital natives are rather digital naives. This raises the question which role instruction, and, particularly, public instruction can play.

### 3.2 An unavoidable gap

School systems evolve slowly. The way they cope with ICT has been widely analyzed and we shall not insist here on this aspect, which has been tersely

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summarized by Larry Cuban (1993) by the formula “Computers meet classroom, classroom wins”. More precisely, it has been shown that ICT usage might develop locally, differentially according to several kinds of technology usage (Baron & Bruillard, 2003) and that there was an important gap between the home and the school. This situation is however not limited to France. The Mediappro 2006 study observed that this gap was observed “across all the countries including Quebec” (p.16).

A recent report by Bigot & Croutte (2007) confirmed that, at least in France, Internet is not much used for training and education. According to it, “one adolescent out 2 uses informatics at home for school aims, but this proportion is lower than in 2006 (51% against 59%)… At best, it is 41% of students having an Internet access that use this tool for training aims” (p. 126).

When Internet is available, is it used at school? And what is it used for? This issue is a difficult one and has many possible answers. Trying to go beyond general indicators, we paid attention to qualitative studies. For example, Rinaudo and Delalande (2008) have recently led an important study in lower secondary schools in the region of Rennes, in Brittany, France, where student had been given a laptop for their studies (Ordi 35°). Among their respondents, they quote both a young boy who regularly uses computers but thinks his school results are going to get worse (“since we have the computers in 5th grade, there is a diminution in work, everybody remarks it, even the teachers‖, p. 131) and a girl who observes that she is getting worse grades since she uses the laptop. One of the reasons she quotes is the time spent in playing or watching movies in her room…

As one would expect, teenagers do use the available technological tools in order to fulfill the goals that interest them. They show a great creativity. Of course, they learn new things, probably not exactly those that educators would like them to learn. As all their predecessors, adolescents like to stretch the limits and to question the world they live in.

Their rapport to ICT is however mainly instrumental and often shallow. In order for them to understand what is at stake and to reflect about new possible applications, teaching remains a powerful means to help students get access to intermediate levels of abstraction. But this goes not without problems: in order for this to happen, teachers have to be prepared and to benefit from favorable conditions.

3.3 Which perspectives?

No one has a clear view of how technology will evolve, but three points may be surmised: it will continue to change quickly; there will be some kind of convergence around mobile devices like advanced smart phones and, without education or instruction, digital natives are likely to remain digital naïves.

http://www.ordi35.fr/
At the same time, except in innovative settings, ICT uses at school are rather likely to remain limited and there is no strong evidence that they can substantially change the way students learn. But it may very well teach new things.

So far, the French school system has mainly insisted on launching schemes for assessing ICT competencies without organizing explicit curriculas. A State-founded certification like Brevet informatique et Internet – B2i in France is certainly no small initiative. One may however doubt whether it can really assess competencies or if it just checks that very simple tasks can be performed by applicants. Besides, it requires that teachers should be able to assess children’s ICT competencies (and this is far from being the case for everyone of them).

Today, many students are casual users of ICT, without much knowledge of what is implied in the background. Furthermore, they are easy targets for marketing tricks. In this context, school still has a strong responsibility in providing emancipatory processes grounded in civic values. ICT may support new teachings paradigms in classrooms but transforming digital natives, even naives, in digital citizen remains a key objective of compulsory education. The main point is that digital technologies lead to a shift in the procedures used for solving problems. So activities change and so does the focus of interest. Research is still needed, not so much in order to obtain definitive results, but rather in order to understand what is changing, what may enhance educational actions and what needs a specific instruction.

References


