

PERSONALIZING LEARNING, POLICY, TECHNOLOGY AND THE CONTRIBUTION OF RESEARCH

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Abstract

Personalizing learning seems to be rapidly gaining ground and is being called upon, more and more, to find itself at the centre of educational reforms. In fact, many authors indicate that the challenge education must face at the dawning of this third millennium is personalizing learning, which means fully preparing pupils for their role of citizen while at the same time, developing their competencies and individual talents. What has influenced recent research on personalizing learning is the active role that pupils must play from now on in the building of their own knowledge. Hence, actively engaged learners as well as an increased relationship and communication with teachers particularly characterize the personalizing of learning.

Often initiated to counter the chronic demotivation of pupils, personalizing is rapidly gaining ground in the United States and in Europe. Nonetheless, since the problem of low motivation is no stranger to the Canadian school, there is a need for us to reflect upon ways to foster the personalizing of teaching to develop pupil interest in school. This is what we intend to do within the framework of this presentation. In so doing, we wish to show how research may provide a better understanding to provide avenues that could foster personalizing of learning. While basing ourselves on the theoretical framework written by Hébert (2005) that defines and orients the theme of this symposium, we are focusing, most particularly, on two essential aspects of personalizing teaching, namely teaching and learning.

More specifically, this presentation has a triple purpose. On the one hand, we wish to show that the Centre for Interuniversity Research in Teacher Education and the Teaching Profession (*CRIFPE*), participates, at the research level, in personalizing learning, more particularly through its studies in teaching, teacher education and educational policies. On the other hand – and this is of particular interest to us – we wish to allow participants to discover how information and communication technologies (ICT) are likely to contribute greatly toward personalizing teaching. ICT may increase the active participation of learners during their school trajectory by offering them more choices, more control, and ultimately enabling them to create

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school content. Lastly, we shall present an overview of the pitfalls which prevent the integration of ICT by teachers of ICT within a school environment.

The CRIFPE and personalizing of teaching

The Centre for Interuniversity Research in Teacher Education and Training for the Teaching Profession is one of the most important research centres in education in Canada. Recent laureate of the Whitworth Prize awarded by the Canadian Education Association (CEA), the *CRIFPE* is an innovative research centre that promotes practices and research approaches in collaboration to examine and analyze complex multi-faceted questions more deeply and to open more research avenues in education and in training for the teaching profession. The *CRIFPE*, known to open up new domains in teacher education such as ICT and personalizing learning, is also recognized for its in-depth research in well-known fields in education, such as training for the teaching profession.

The OECD (2002), for example, considered that the first objective to be set in the field of education and ICT is “to grant all teachers a high level of know-how and competencies in the area of ICT [...]”. This is one of the main missions the Centre for Interuniversity Research in Teacher Education and Training for the Teaching Profession attributes to itself. What should be done to help teachers and the school integrate ICT in such a way as to foster motivation and success within the school context? One of these avenues is to pass through professional development and preservice education. In order for ICT to contribute toward the motivation of pupils and success in school, it is important that teacher education programmes be implemented to offer teachers and administrators the support and technopedagogical competencies they need. Moreover, organizational constraints, notably those linked to time management, should be given more consideration by managers so that the presence of ICT in schools transpose itself into a veritable pedagogical integration with a view to fostering the personalization of learning.

Over the years, the collective work of *CRIFPE* researchers was interpreted by the ever-increasing impact of *CRIFPE* on organizations and educational policies throughout Quebec and Canada. This is why it aims to exercise a greater role with regard to the distribution of knowledge, teacher education practices and teaching in the school environment. From this perspective, other than their intrinsic scientific value, the Centre’s activities allow for the broadening of the knowledge-base that can serve as a scientific foundation for the teacher education sector in universities aimed at improving teaching in schools. In addition, researchers at the Centre are intensely

engaged in the realization of this objective. It is the *CRIFPE* researchers, for example, who wrote the orientation document for the new teacher education programme in 2000, applied today in all Quebec universities. It is the *CRIFPE* that evaluated the MEQ programme in support of the Montreal school that affects 130 schools located in underprivileged areas of Montreal. It is also the *CRIFPE* that since 1998 has collaborated with the Council of Ministers of Education in Canada and Statistics Canada within the framework of a pan-Canadian research programme in education whose goal is to determine research policies in education for this century. It is the *CRIFPE*, therefore, that could possibly have an impact on the adoption of the personalizing of teaching within the education milieu of Canada, both through its research work, its role in diverse organisms in education, but also because of its potential to spread information.

ICT: personalizing learning, school motivation and teaching

In 2004, Internet celebrated its 35 years of existence. Within the space of just a few years, this tool first reserved for the army and universities has become, for many, an indispensable element in daily life: the number of Net surfers on the Earth has passed from 16 million in 1995 to more than 650 million in 2004 (CEFRIO, 2005). With more than 550 billion documents on the Internet and at least 7,5 million Web pages created every day (Varian and Lyman, 2002), this exponential presence of ICT also presages a revolution that has long been anticipated in education. The global knowledge society, promised in the 1970s, boasted about in the 1980s and looked forward to with respect mixed with fear and incredulity in the 1990s, has become, in the twenty-first century, an inevitable reality. In Canada (Council of Ministers in Education, 2002) and everywhere in America or Europe, ICT form an integral part of many programmes of study in primary and secondary schools.

In this section, we shall first attempt to illustrate how ICT foster the personalization of learning and as a result redefine the role of learners and teachers in the classroom. In so doing, we seek to discover how technologies represent a fascinating and unique personalizing learning option. Also, in keeping with the stakes that most fostered the incursion of personalizing learning, we shall broach the question of ICT and the role they could play as motivation catalyzers. In this way, we shall show how they are susceptible in fostering school motivation in pupils, which, according to several American researchers, is one of the major woes suffered by schools (see Mace 2001). Lastly, we shall discuss the challenges faced by teachers who wish to integrate ICT into their teaching.

ICT and personalizing learning

We strongly believe that information and communication technologies are likely to foster the personalization of learning, even the motivation of pupils, by encouraging a more active participation in their learning, made possible by the Internet network, which seems to smash into pieces the hierarchies that used to structure school life. ICT also facilitate access to resources that until now have been unaccessible, in addition to fostering the mutualization of knowledges, and even a personalization of learning. As a matter of fact, ICT seem to represent a new challenge for teachers. Previously anchored in a logic of transmission of knowledge, the school must now face one of knowledge navigation. It is with a growing number of pupils thrust into an Internet culture that has become more and more universal, that many also expect to find in school the commodity, rapidity and facility of access to information that the Web has made possible. Far from remaining passive to wait to have knowledge delivered to them, pupils, in general, are quite apt in navigating to find the information they're looking for, as well as being able to contact their colleagues – via ICT – to obtain help, acquire knowledges or develop competencies. This technological revolution, towards which education itself has largely contributed, creates a new framework for the accomplishment of the teaching role and procures advantages that schools could and should foster to respect their fundamental mission of education and instruction.

Rosnay (1999) indicates that technologies will be called upon to “profoundly modify traditional forms of education” (p. 155). This is how pupils evolve within a context of mutation in relationship to knowledge: at school, one no longer learns solely from the teacher and the manual. For many, Internet is now the main source to access knowledge: It progressively transforms and in a durable manner, ways of thinking, teaching and communicating with pupils. Moreover, the growing Internet phenomenon represents one of the most important changes in education. Technologies are in the process of becoming the rite of passage to access knowledge. The studies we conducted show the numerous advantages of ICT in education, notably in terms of flexibility, accessibility, communication and increased interactions and variety in teaching modes. In general, learning results in pupils are better, teaching improves and is better adapted to the individual competencies of pupils, but also to the day-today realities of school agents, better leadership for principals and other school administrators, as well as an increased participation of parents and other members of the collectivity in school life.

ICT and school motivation

Many American educators indicate that the growing popularity of personalizing teaching is a result of a lack of motivation on the part of pupils. In Canada, these school motivation problems are not new. Over fifteen years ago, Gadbois (1989) noticed that the manifestation of one of the most important school problems was the low motivation of youth for their studies or their eventual social role.

Of all the woes suffered by society [...], the most serious one is probably the generalized utilitarianism that has installed itself in it, meaning to say the lack of interest for any activity with no personal profit in the short term. This attitude manifests itself in a large number of young people by a low motivation for studies and distant preparation for an eventual social role (p.72).

The phenomenon of demotivation in pupils does not, however, only apply to Canada; it is of equal concern in all industrialized countries. In France, for example, the national council for programmes even organized, last January 14, a symposium under the theme “*School Culture and Boredom*”, so that experts and interveners could reflect upon the problem of disinterest in school that is observed more and more frequently in young people. For many, lack of interest is one of the feelings most shared by pupils, and most particularly by boys. In fact, most researchers agree that one of the principal characteristics that distinguish girls from boys at school is their motivation with regard to success and school assignments.

How can the desire to learn be given (back) to pupils? How to foster their motivation in a school context? Perhaps information and communication technologies represent a clue to the solution. As a matter of fact, with the challenges represented by motivation and success in a school context, many are questioning if ICT could constitute a likely means of personalizing learning and instilling in an entire generation the desire to learn.

For quite a few years now it has been presumed that recourse to computers for educational purposes increases motivation in learners. Most authors of studies on the benefits of ICT attempt to show that technologies represent a fascinating route for teaching and learning, motivating and unique: ICT would be the Trojan horse of new pedagogies – such as personalizing learning – and even one of the only means to allow the school to evolve in keeping with the back-breaking rhythm demanded by the implementation of reforms and other changes in education.

What obstacles are teachers to surmount?

In this text, we have postulated that personalizing learning may be greatly facilitated through the integration of ICT by teachers. But do these teachers make regular use of ICT in their classroom? In general, studies reveal that this is not the case. As a matter of fact, regardless of the statistics that place Canada at the head of the Internet-States on the planet, the training of new teachers in the pedagogical uses of ICT is still a huge challenge. In fact, many studies show that newly trained teachers barely integrate ICT into their pedagogy (see Cox, 2003; Karsenti, 2004; McCrory Wallace, 2004; OECD, 2004; Zhao and Franck, 2003). This is an observation found in studies conducted in America as well as in Europe. For example, conclusions of a recent OECD (2004) study, *Completing the foundation for lifelong learning: An OECD survey...*, show how the distribution of teaching hours, class organization... and the weak technopedagogical competency of teachers do not allow for a veritable integration of ICT into pedagogy. Firstly, the report reveals that the utilization of ICT in the schools of these countries is deceiving, even though important investments made during the past 20 years allowed ICT to be introduced in these establishments. The conclusions of the report also reflect this deception: "the utilization of informatics for pedagogical purposes in all secondary schools of these countries is sporadic" (p. 133). Moreover, it is noted that "only a minority of teachers in all of these countries makes regular use of current informatics applications" (p. 133-134).

In an article that appeared recently in the American Educational Research Journal, McCrory Wallace (2004) also points out that "teachers are not well prepared to teach with the Internet, and its use is limited in scope and substance" (p. 447). Zhao and Franck (2003) also call attention to the fact that the introduction of ICT in education does not have the success hoped for. What the scientific literature demonstrates, just like the last OECD report did, is that ICT are not always present in the classroom, and that this is an important problem in a society faced with the ICT maelstrom which seeks to foster personalizing learning.

The difficulties or obstacles linked to the integration of ICT by teachers appear to stem from several sources, like inadequate preservice training, insufficient motivation, non-existent technical support, school organization that does not lend itself to ICT, lack of support from the principal, etc. (see Cuban, 2001; Dede, 1998; Means, Penuell and Padilla, 2001). We have regrouped these obstacles that teachers face with the integration of ICT into two broad categories: external factors (linked to school, society, etc.), and internal factors (linked to the teacher or teaching). Among the principal so-called external obstacles, the question of equipment usually figures

at the top of the list (McCrory Wallace, 2004). In fact, research studies show that teachers often attribute the non-use of ICT to lack of equipment, to lack of access (the equipment is there, but difficulties of access complicate their use), to reliability (the equipment is badly taken care of) and poor quality (the equipment is outdated). We also notice the lack of technical support among the factors that prevent the use of ICT (Cox, Preston and Fox, 1999; Cuban, 2001; Preston, Cox and Cox, 2000; Snoeyink and Ertmer, 2001), lack of support from the principal (Butler and Selbom, 2002), and inadequate planning both during preservice and continuing education (Guha, 2000; Levy, 1999; McCrory Wallace, 2004; OECD, 2004; VanFossen, 1999). The British Educational Communications and Technology Agency (BECTA, 2003) and the OECD (2004) also stress that school culture or school organization is not adapted and may constitute a slowing down of the integration of ICT by teachers.

It is surprising to observe that several studies have shown the little impact of continuing education on the use of ICT by teachers (see Cox, Preston and Cox, 1999; Guha, 2000), possibly because these types of training are not adapted to the needs of teachers that are not simply pedagogical or technical. Concerning the preservice education of teachers, there are multiple factors inherent to inadequate training, but the absence of models among trainers is often cited in the studies reviewed (Simpson et al. 1999; McCrory Wallace, 2004; Whetstone and Carr-Chellmann, 2001), just like the lack of obligation to integrate ICT during inservice (Murphy and Greenwood, 1998). In addition, for a long time it was considered that technical competency would allow for effective teaching with ICT (Shoefield and Davidson, 2002), which is not necessarily the case. It also seems necessary to show how ICT may be integrated into specific teaching contexts (McCrory Wallace, 2004).

Among the internal factors which seem to constitute an obstacle to the integration of ICT by teachers, we mainly find lack of time (Cuban, 1997, 1999, 2001); Karsenti, 2001), the weak feeling of competency or technopedagogical self-efficacy (Cox et al., 1999; Pelgrum, 2001; VanFossen, 1999), anxiety (Snoeyink and Ertmer, 2001, difficulties linked to classroom management (Cox et al., 1999; Drenoyianni and Selwood, 1998); motivation or attitudes concerning the use of ICT (Cuban, 1999; Fabry and Higgs, 1997; Karsenti, 2004b). We also notice that anxiety related to computer use (fear that something will not function, etc.) is also an important explanatory factor for the non-use of ICT (Fabry and Higgs, 1999; Russell and Bradley, 1997). Recent scientific studies illustrate that psychosocial factors (attitude, motivation, feeling of self-efficacy, etc.) play a key role in the use of ICT in the classroom (Fabry and Higgs, 1997; Guha, 2000; Snoeyink and Ertmer, 2001). Moreover, as we observed in the study by McCrory Wallace (2004) or in the report

by BECTA (2003), equipment is less of an obstacle for the introduction of ICT than for its creative and innovative use.

Conclusion

ICT are also necessary in school for, in certain contexts, they allow for personalizing learning, better teaching. The effort to integrate ICT would moreover be of interest insofar as they contribute toward the improvement of pedagogy by allowing the learner to establish a better rapport with knowledge. For Sandholts, Ringstaff and Dwyer (1997), ICT catalyze change in pedagogical methods and could even pretend to facilitate the passage from the traditional method to a set of more eclectic learning activities that give rise to knowledge-building situations. ICT could also make it possible to have an occasion to rethink and delocalize dialogue between persons in time and space and in so doing, open up new avenues for preservice and lifelong teacher education activities.

The pedagogical integration of ICT seems henceforth inevitable to foster the academic success of pupils, to upgrade the professionalism of the teaching personnel, to encourage leadership in school managers, and even foster collaboration between the school, home and milieu. This at times appears to be a frightening task which may represent an enormous challenge. This is why the tumults that most definitely accompany this incursion of ICT into education, so that they eventually become part of the commonplace landscape, should be met with dynamism and conviction. We must also show proof of critical thinking; massively integrating ICT into education without questioning the impact they could have on learning or teaching, could be as disastrous as preventing their incursion into the school. In fact, ICT, in themselves do not necessarily foster motivation or school achievement; we must not confuse a teaching tool with a goal. Because integrating ICT does not simply mean that they become an object of study, as was often the case in the past. Instead, they should be treated as a powerful and flexible teaching tool, aimed toward the improvement of teaching and learning. The purpose of this integration should imperatively be pedagogical and not technological. ICT will have their place in education if they foster, in specific pedagogical contexts, better teaching or more learning. Thus, it is the manner in which they will be used with pupils that will impact on personalizing learning, on school motivation. Nevertheless, favouring the integration of ICT to foster motivation and academic success does not modify the substance that constitutes teaching, instructing or educating. It is the manner of doing things in the classroom that must change, by passing through the personalization of teaching.