MARSOUIN
Môle Armoricain de Recherche sur la SOciété de l'information et des Usages d'INternet

ICTE and new professional degree programs in higher education: anthropological approaches

Pascal Plantard

CREAD, M@rsouin-Université de Haute Bretagne

Pascal.Plantard@uhb.fr

http://www.marsouin.org

Article presented at the international colloquium "The ruptures in the information society and the economy of knowledge" University of Tunis el Manar (15-17th Feb 2007)

RÉSUMÉ.

Cet article s appuie sur deux recherches empiriques: une sur les étudiants d un service d enseignement à distance et une, ethnographique, ayant pour objectif l identification des modèles pédagogiques soutenant les nouvelles licences professionnelles (2004-2006). Il s agit, par l observation directe des pratiques et par des analyses de discours des usagers des TICE, d identifier progressivement les différents modèles pédagogiques implicites mis en jeux. Théoriquement, nous approchons les TICE sous l angle plus général du rapport au savoir, qui, recontextualisé, renvoie à des questions théoriques beaucoup plus larges. Ces recherches, nous font nous interroger sur plusieurs notions dans trois registres : « la vision », l expérience culturelle des TICE et la formalisation des dispositifs TICE. Dans ces trois registres, nous proposons trois concepts : butinage braconnage bricolage. Dans le registre de la « vision », le butinage entretient des relations dialectiques avec la notion de navigation. Dans celui de l expérience culturelle, le braconnage entretient des relations dialectiques avec la notion de programmation. Dans celui de la formalisation des dispositifs TICE, le bricolage entretient des relations dialectiques avec la notion d ingénierie. Pour les TICE, la dialectique bricolage-ingénierie est probablement la plus féconde.

MOTS CLEFS : TICE, ENSEIGNEMENT SUPÉRIEUR, MODÈLES PÉDAGOGIQUES, INGÉNIERIES, BUTINAGE, BRACONNAGE, BRICOLAGE.

ABSTRACT.

This paper is related to two empirical research projects: one was an investigation of users of a University Service of Distance Learning; the second was an ethnographic research which was aimed at identifying the pedagogical models underpinning new professional degree courses (2004-2006). Our methodology is essentially qualitative relying both on the direct observation of practice and on the analysis of the discourse of ICTE users to identify progressively the differing pedagogical models implicit in such practice. Our particular theoretical approach is to place Information and Communication Technologies in the wider context of knowledge relationships. In Education and Training, the relationship which users of ICTE have with such technologies can be studied in part as a relationship to specific knowledge which, when put into other contexts, opens up other, much wider, theoretical questions. And this led us to a range of questions at three differing levels: a generalized view of ICTE; the cultural experience of ICTE; and the systematization of ICTE. To each level, we have attributed three core concepts: gathering butinage, poaching -braconnage, and odd jobbing -bricolage. In the generalized view of ICTE, gathering relates to notions of navigation. Within the cultural experience of ICTE, poaching relates to notions of programming, and in the systematizing of ICTE, odd-jobbing relates to notions of systems development. It seems that this last dialectic is, as far as ICTE is concerned, the most productive.

KEY WORDS: ICTE, HIGHER EDUCATION, PEDAGOGICAL MODELS, SYSTEMS DEVELOPMENT, GATHERING, POACHING, ODD JOBBING.

RENNES 2 UNIVERSITE HAUTE BRETAGNE

MARSOUIN

1 INTRODUCTION.

This paper is part of the synthesis of work carried out over ten years on the development of ICTE (the uses of ICT in education and training) in the field of higher education and professional training in Brittany. Out of nine research projects[1], I have chosen to organize this paper around three empirical studies:

– a study based on a questionnaire and interviews carried out in 2004 with students of the SUED[2]

– an ethnographic research project aimed at identifying pedagogical models underpinning new professional degree programs at the University of Rennes 2. I focused on two *licences professionnelles*[3] which I deemed highly significant for what they reveal about the role of ICTE within the university, but also what they reveal through ICTE about the university:

– Graphic design / interactive media,

– Personalized Training Programs and Strategies (SDIF-Stratégies et Dispositifs Individualisés en Formation).

I then compared this data with results from four other studies[4] on the role of ICTE in higher education in Europe.

1.1 Epistemological musings…

With several colleagues from the CREAD in Rennes we have approached ICT*E* from the more general perspective relationships to knowledge. In education and training, relations between users and ICT can, to a certain extent, be studied as relations to specific knowledge which, in another context, are related to broader theoretical questions. To mention only a few studies in this field, I started several years ago by examining the relationship between children and teenagers in specialized educational programs, young drug addicts and young adults on welfare and computing[5]. Jean-Luc Rinaudo[6] has studied this relation among primary school teachers and Isabelle Collet[7] has studied more recently, and with equal relevance, the relationship between students and students of IT with computing. Finally, Magali Moisy[8] has undertaken highly promising research on adolescent video game players. This approach has led us to examine the notions of culture, technical culture, computer literacy, cyberculture, video game culture… within a definition linking subject and society that I have borrowed from Winnicott: "It is cultural experiences that give the human species this continuity that transcends individual experience"[9]. The basis for this community of researchers and the coherence of these studies is the reference to a clinical approach inspired by psychoanalysis. To cite Claudine Blanchard-Laville: "this approach has the dual characteristic of giving priority, in the situations studied, to unconscious processes, in the Freudi-

---

[1] Three other professional training programs and the Brittany regional distance learning platform (FOAD) were studied. International research on "students and the Internet" and research on Moodle are currently underway.

[2] Service Universitaire d'Enseignement à Distance, University Distance Learning Service http://www.uhb.fr/sued

[3] 2 out of the 5 in existence at Rennes 2 in 2006

[4] DUMONT B. (dir. par), 1992, Étude sur les utilisations pédagogiques des nouvelles technologies dans les premiers cycles universitaires, LID, Université Paris 7

ALBERO B., DUMONT B., 2002, Les technologies de l'information et de la communication dans l'enseignement supérieur : pratiques et besoins des enseignants

THIBAULT F, 2005, La Fédération Interuniversitaire d Enseignement à Distance. Ses membres et leurs activités en 2004, Enquête FIED

ALBERO B., THIBAULT F., 2006, E-learning and University Education (ELUE). Les universités européennes à l'heure du e-learning, regards sur la Finlande, l'Italie et la France. EEC

Articles available at http://www.e-pathie.org

[5] PLANTARD P., (1992) Approche Clinique de l'Informatique, Thèse de Doctorat, Université Paris X Nanterre

[6] RINAUDO J-L, (2002) Des souris et des maîtres, Paris, l'Harmattan

[7] COLLET I., (2005) La masculinisation des études d'informatique – Savoir, pouvoir et genre, Thèse de Doctorat, Université Paris X Nanterre

[8] MOISY, M (2004) en-Jeux, Adolescence, 22, 1. p 7789

[9] WINNICOTT, D.W. (1971) Jeu et Réalité, Paris, Gallimard. p 139

---

an sense, and not eluding the question of the transferenetial relation of the researcher and the object/subject studied but, on the contrary, working on the basis of this relation and trying to create a dynamic along the way"[10].

1.2 Involvement 1.

Personal experience with ICT can be a scientific asset providing one can break free from one's personal technological demons. We converge in this attempt at a "qualitative, clinical, ethnographic and anthropological vision" of ICT with at least two other fields of research: on the one hand, Information and Communication Sciences (Boullier D., Breton P., Perriault J., Miège B., Moeglin P, Musso P. …) and on the other hand, Psychoanalysis[11] (Missonnier S., Stora M., Sibony D., Tisseron S.…). For us, in this study of the use of ICT in higher education, this means trying to conduct research RELEVANT to users and uses of ICT, its interpretation being only truly satisfactory if it is enriched by the PRACTICE of ICTE as a multidimensional cultural experience. One must remain humble faced with the complexity of the task, my strategy for surmounting the inconceivable being to capture this "experience", the testimony and emotions of different players involved in training, both externalized and internalized, since I am, to a certain extent[12], involved in ICTE myself. This position of "peripheral observer-participant" is similar to what Georges Lapassade[13] refers to as an ethno-clinical role, associated with theoretical references borrowed from psychoanalysis, social psychology and anthropology. Georges Lapassade specifies that "researchers who choose this role- or this identity- consider that a certain degree of involvement is necessary, indispensable, for anyone who wants to capture, from the inside, the activities of people and their worldview. They do not take on an active role in the situation studied and thus remain on the 'outside'"[14]. Contrary to my research on the uses of ICT in specialized training or social insertion, where my involvement was total and my approach profoundly clinical, for my research in the field of higher education, it seemed preferable to choose an ethno-clinical role in a transdisciplinary perspective.

1.3 Modelization.

I will refer to Philippe MEIRIEU[15] in order to further specify the protocol I propose[16] : "Because the pedagogue is someone 'in the field', because he is in charge of educating those entrusted to him, because he is confronted with the necessity of making decisions, pedagogy is, obviously, 'a discipline of action'. This is why, for the same reasons as medicine or even politics, it does not have, strictly speaking, an epistemological coherency of its own. Contrary to physics, linguistics, economics or history, it does not derive its identity from a homogeneous system of validation but more from its 'object' –education–and its project–producing models that enable access to knowledge of 'things educational' and to act in a coherent and efficient manner. In other words, it is not an area for the administration of proof, but rather for what could be referred to as the 'management of sensible decisions'."

[10] BLANCHARD-LAVILLE C., (1999), L'approche clinique d'inspiration psychanalytique : enjeux théoriques et méthodologiques, Revue Française de Pédagogie, N° 127, Paris.

see also :

BLANCHARD-LAVILLE C. et all., (2005), Recherches cliniques d orientation dans le champ de l éducation et de la formation, Revue Française de Pédagogie, N° 151, Paris

[11] We can cite as an example the joint exploratory study that I am carrying out with Serge Tisseron at the "maison sensible", a sort of apartment where France Telecom Research & Development experiments with its latest technologies.

[12] With team work and proper supervision, one can escape the tyranny of machines.

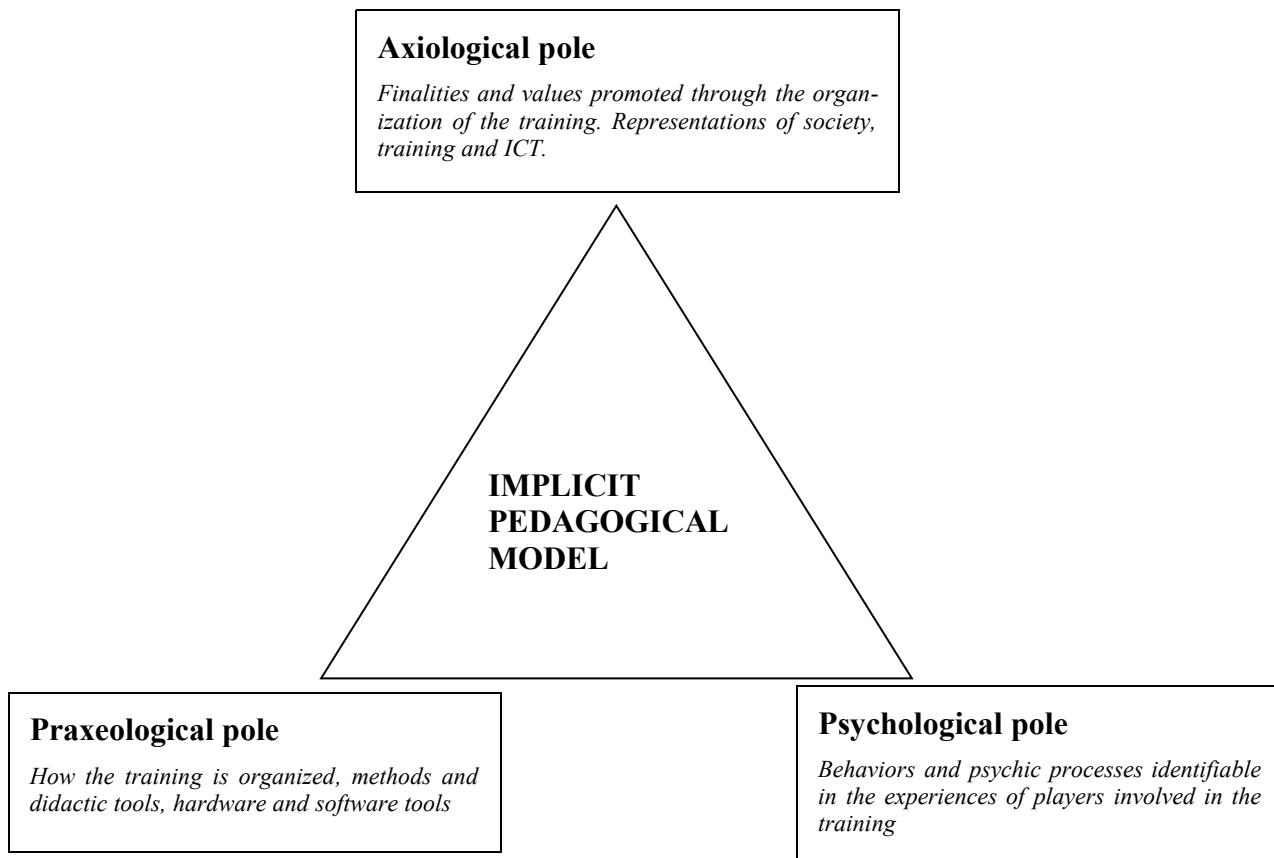[13] LAPASSADE G., (2000), L'observation participante, Université Paris 8

[14] LAPASSADE G., (2000), Op. Cit.

[15] Professor of Education Sciences, former director of the National Institute for Pedagogical Research, director of the Institut Universitaire de Formation des Maîtres de Lyon (Teacher's College).

[16] MEIRIEU P., (1990) Le modèle et le pédagogue in L'intelligence au programme coll. Le groupe familial N° 129, Paris, Ed. FNEPE

Starting with the principle put forward by MEIRIEU that progress in the field of pedagogy does not reside in the administration of complete and definitive proof, which does not exist, but in the comprehension of the more or less explicit model that drives each training action, for ICTE, I will attempt to reveal and understand the implicit pedagogical models underlying university programs. In order to reinforce my idea, I will start with a diagram showing the polarities- the three paradigms- of a system for revealing implicit pedagogical models:

Axiological pole

Finalities and values promoted through the organization of the training. Representations of society, training and ICT.

IMPLICIT PEDAGOGICAL MODEL

Praxeological pole

How the training is organized, methods and didactic tools, hardware and software tools

Psychological pole

Behaviors and psychic processes identifiable in the experiences of players involved in the training

This pedagogical triangle will enable us to specify the topological position of the scientific model used for this type of research. To identify practices and uses of ICT*E*, the ideal solution would be to reveal the multitude of implicit pedagogical models used by the players when in action. This is structurally impossible. As CASTORIADIS has demonstrated[17], these models are as numerous as the players involved. Moreover, they depend on countless parameters that are also, for the most part, unconscious[18]. Nevertheless, these implicit models contribute to the imaginary construction of training. They construct its collective social imaginary-the driving force of the pedagogical team- and its social history-its project[19] as a living, flesh and blood system. This means that these models, as imaginary and ephemeral as they may be, influence training. The implicit pedagogical model of an ICT*E* system is necessarily a partial theoretical construction that is systematically multi-ref-

---

[17] CASTORIADIS C. (1975), L'institution Imaginaire de la Société, Paris : Seuil

[18] This is the meaning of the grey areas under each of these poles: the knowledge of practices is incomplete.

[19] For more on this universal pedagogical portmanteau: the project ; see BOUTINET J.P. (1990), Anthropologie du projet Paris, PUF

[20] This is the meaning behind the multiple colors of the different poles: the knowledge of practices is complex. See the work of Jacques Ardoino

This approach provides, among others, a strategy for identifying implicit models that influence training processes. It enables us to move from the latent to the manifest character of a training program considered as a series of events– intentions, developments, projects… which are at first latent[22] and then more and more manifest – evolving into the training program that we are going to experience. For this perspective, we can also say that this body of research adopts an ethno-clinical approach.

1.4 Methodological questions…

For the SUED, a questionnaire was distributed in 2004 to all the service's users and combined with 14 interviews of students, considered the most representative of this population, as well as long interviews filmed by students enrolled in the USETIC degree program (Socio-educational uses of ICT).

For the DESIGN and SDIF degrees, the methodology used was strictly qualitative. It combined observations during training as well as structured interviews with students, teachers, professionals and the two program directors.

When conducting research in the SSH, particularly when referring to ethnography, clinical research or symbolic interactionism, the instrumentalisation of data collection is an important aspect, but legibility of the methods of analysis applied to the data is even more important.

For this research, I used a hypertext decryption protocol that consisted in:

– classifying the data in the three categories of the modelization triangle (axiological–praxeological – psychological),

– identifying the pole of the triangle where the model emerges,

– finding the dominant signifiers for each pole that could be used to isolate the central notions and concepts of the implicit pedagogical model for each degree program.

1.5 Involvement…

Having served as Vice-president of training, in charge of professional insertion, Director of the Education Sciences Department and as a member of the Board of Directors of the University of Rennes 2 and Assistant Director of the UFR Sciences Humaines (Humanities College), I was, and still am, in a privileged position to observe the strategies and institutional interactions, as well as to gather and conserve the texts, that are the basis of ICTE programs at the university[23]. Having taken part in many meetings

---

E.g. ARDOINO J., (1993), "L'approche multi référentielle (plurielle) des situations éducatives et formatives, in Pratiques de formation-analyses, n° 25/26, (" L'approche multi référentielle en formation et en sciences de l'éducation") Paris VIII-Formation permanente, PUV

[21] see PLANTARD P.(1999), De l'éducation virtuelle, in VEI - Ville École Intégration, N° 119 ("nouvelles technologies et l'exclusion"), Paris, Ed. CNED

[22] In the sense of becoming, the training as a projection

[23] The other texts that I studied for this paper:

- the official texts concerning the implementation of the French LMD system (Bachelor-Master-Doctorate),

- my notes from when I was vice president of the university,

- the institutional projects and contracts of Rennes 1 and Rennes 2 from 2004 to 2007,

- the minutes of the board meetings at Rennes 2 from 2003 à 2006,

- the minutes of the board meetings at the UFR Sciences Humaines of Rennes 2 from 2003 to 2006,

- reports on the different versions of the UNB : Université Numérique de Bretagne (Digital University of Brittany),

- the minutes of the CORT (Conseil d'Orientation des Ressources Technologiques/Steering Committee for Technological Resources) at Rennes 2 from 2003 to 2006,

- panoramas 2003-2004-2005 of ICT uses in Brittany produced by the GIS M@rsouin,

- documents "Rennes 1 en chiffres" and "Rennes 2 en chiffres" (key figures of Rennes 1 & 2),

- minutes of different task forces and missions which contribute to the creation of an institutional project, the latest one being the "ICT mission" managed by Dominique Boullier and in charge of defining the foundations of the ICT policy of the school for the next four years,

- the SREF (Stratégie Régionale Emploi-Formation, Regional Employment and Training Strategy)

- the DRIP (Dispositif Régional d'Insertion Professionnelle, Regional Professional Insertion Plan),

- CRB texts concerning the distance learning portal SKODEN and its evolutions,

which generated, and afterwards used, these texts, one could object to the subjectivity of my analysis. Thanks to Bachelard[24], we know that reality reveals itself to us through subjective experience. Apprehending an object in its exteriority is not sufficient to make it objective since illusion is consubstantial with knowledge. As Nicole Mosconi wrote "Foucault – and Nietzsche before him – have indeed shown that, among what is considered knowledge in our societies, a great deal consists in subjective rather than truly objective elements"[25] Furthermore, we have known, at least since Philippe Breton (1990) and Pierre Musso (2003) that cultures formed around ICT (computers, internet, networks…) remain closely linked to contemporary imaginaries. It would be a pipe dream to try and escape from the power of illusions without building a system of rationalization that includes the subjective dimension.

Institutional involvement is also an experienced multi-dimensional cultural practice that can contribute to the elaboration of scientific analyses, which, when reproduced, have a legitimacy earned "in the field". Rather than denying or suppressing this hidden side of the researcher, my attitude consists in breathing life into my results and my analyses using my experiences as a participant, using a written style where both can easily be identified.

2 THE RESEARCH.

2.1 The SUED and its users.

In 2004, a questionnaire was sent out to all the students enrolled. 202 of them replied, or 31 %. We can assert that this sample is representative of the class of 2003-2004 at the SUED, in particular concerning the distribution by diploma and field of study, which is very close to that of students enrolled today. All the data collected was processed using Sphinx, a software program which enables multi-criteria sorting of the most relevant data for our analysis.

Is there a typical profile for the Rennes 2 distance learner?

2.1.1 Student profile.

If I were asked to define the typical profile of a student enrolled at the SUED, I could summarize it in the following way: she is a woman, around 30 years old, employed full-time and living in Brittany. When she has a partner, she often has dependant children. From a socio-professional standpoint, she is a white collar worker and often works in teaching, health or social services and earns around 1,000 euros a month. She is enrolled in an academic program, having already earned a lower undergraduate degree, and hopes to obtain a Bachelor's degree. She can only devote 10 hours a week to her studies, but the SUED is a system that works for her because it combines internships and courses accessible from home.

This is obviously a simplified portrait and deviations from the average are just as rich in information as we can see from these more precise results:

– the student body is indeed mostly female (75 % of all students enrolled or 10 points more than for the entire school);

– students at the SUED are also older than full-time students since 83.5 % are between 20 and 45, to which we can add 11.5 % who are over 45. From this point of view, the results differ significantly with full-time students. The youngest users, under 20 years old, represent only 5% of students enrolled.

From the family point of view, the numbers of single students and students living with partners are identical, but significantly less have one or more children. However, if we compare them with the global student body of the university, we can observe that family responsibilities are more frequent and this characteristic increases significantly with the number of children. As far as our study is concerned, 43% of students enrolled have one or more children.

- different newspaper articles.

[24] BACHELARD G., La formation de l'esprit scientifique, 1938, Paris Vrin

[25] MOSCONI N. , Relation d'objet et rapport au savoir in BEILLEROT J., op. cit, p.86

Behind these general traits are hidden a diversity of groups which are more clearly defined by socio-professional characteristics and declared training goals.

Investigations conducted with students of the SUED included a specific part concerning WebCT, the distance learning platform used at Rennes 2 from 2000 to 2004. WebCT is a software package that was supposed to enable teachers, unfamiliar with computer programming, to use Internet resources to create and manage courses. We have used a methodology that crosses quantitative methods (a questionnaire) with qualitative methods (observations and interviews). For the WebCT questionnaire, the representativity of the response rate is problematic. Depending on the questions, of the 202 students who responded, many did not answer or ticked the box "don't know". For the question "What is your level of satisfaction with WebCT?", 183 answered with 127 stating they did not know, leaving only 56 student opinions on WebCT which, when compared with the number of students at the SUED, produces a rate of 11.6%, which ordinarily would not be considered significant. The interviews prompt me to abandon statistical interpretation and put forward a hypothesis. If 31% of all the students (202) taking part in the study really constitute a representative sample of the entire class of 2003-004 at the SUED, this deficit in opinion concerning WebCT is also significant. Distance learning at the SUED and WebCT are far from being one and the same and there is an obvious deficit in representation of the technological platform. This could be a paradox considering the sharp increase in the number of students who own a PC. In 1999, a first poll indicated that 56% of students enrolled at the SUED owned a computer. In 2000 57% had a computer while our study shows a rate of 74.25%. These computers are recent models (70% are less than 3 years old) even though their configurations are extremely traditional (95% Windows) which is coherent with the profile described above. He, or should I say SHE in keeping with our profile, rates herself as beginner to experienced in terms of personal computing (beginner 49-experienced 63) as well as Internet use (beginner 57 –experi-

enced I 60). An interesting fact concerns high speed connections (ADSL and cable) where the rate of 24.3% (49) reflects the increases observed regionally and nationally. At almost 75%, the level of PC ownership among students at the SUED is significantly higher than the average for families in Brittany. If we cross this rate with the 3 motivations for enrolment at the SUED (professional activity, family responsibilities and distance) we can create a specific representation of the PC belonging to a student at the SUED, which can be confirmed in interviews through two polarities: gender-cultural and formative.

Gender

Several recent studies[26], describe a more utilitarian representation of PC use among women than men. Women often consider this tool as strictly a "machine"…used for writing, counting, research and news…often overlooking the recreational, even fantasy, aspect present among male users. This is coherent with the profile of the SUED student outlined above.

Cultural and formative

In Brittany PC ownership has increased regularly as shown in the diagram below from a M@rsouin study carried out in 2005[27]:
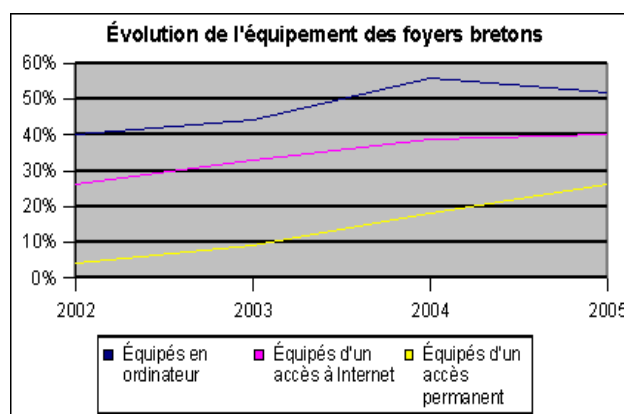

Illustration 1. Evolution of PC ownership in Brittany.

[26] COLLET I., (2005), Op. Cit.

[27] JULLIEN N. & TREMENBERT J., (2006) L'équipement informatique des ménages bretons fin 2005, M@rsouin,

http://www.marsouin.org/article.php3?id_article=96

In terms of use, according to a CSA study in June 2003[28], a majority of French households (51% of households surveyed) claim to be interested by a PC and its potential uses. 37% even say that a PC is an indispensable part of daily life. The French attribute many uses to the home computer: the development of knowledge and training are, for 66% of households, the most useful application while 22% see it as a tool for shopping, via the Internet. A study carried out by the CREDOC in November 2003 states: "More than 2 in 5 people consider Internet as a good tool for training. This belief is strongest among adolescents (63%) and students (56%). In other words, people currently in training believe the most in the pedagogical virtues of this media."[29] This strong national trend makes it easier to understand the impact of the desire for training on PC ownership among the students at the SUED.

In our study, "non-users" balance out "experienced users", but we must remain cautious considering the number of non-responses. It is undeniable that the increase in PC ownership among students is related to the training project they develop at the SUED. The use of WebCT has not developed in the same manner.

Why don't students at the SUED use WebCT?

2.1.2 Axis

Here are some ideas from the data of the questionnaire. Way ahead of technical difficulties, the students declare:

1 – they do not know WebCT (48 %)

2 – they prefer to use paper documents (37 %)

We can put forward the hypothesis of a lack of information that prohibits imagining the uses of WebCT followed by a return to the reassuring use of a familiar friend: the printed text! This would be rather coherent with our initial hypothesis concerning the confused representations SUED users have of the platform. For many, WebCT remains virtual, literally. A SUED student, who is computer literate, owns 2 PCs and has an ADSL connection, has this to say about WebCT: "I heard that correspondence courses via the Internet were being set up. I think it's not up and running yet." It is difficult to be more approximative. For many, WebCT is going to be, but is not yet! The pedagogical model of the WebCT project at the SUED seems very vague. We can begin to perceive a sort of axiological void, experienced by the students as the absence of a clear objective assigned to the distance learning platform. Just behind this emerges a resistance, more traditional, to the use of ICT in training with the return to paper documents. To go into more detail on the uses of the distance learning platform at the SUED, we can say that there is still great room for progress over the coming years. Out of the 152 students who answered the question on frequency of use: 76 ticked "never", or 50 %, and 43 ticked "several times a month", or 28 %. Only 10 students used it daily in 2004 (7 %). They do not feel mobilized by the project or its vision of ICTE. The encounter with WebCT simply does not work.

A closer look at the WebCT platform

WebCT was originally developed at the University of British Columbia by a faculty member in computer science, Murray W. Goldberg. It is a proprietary software program that was commercialized by X-PERTeam and even had a club of enthusiasts: FranCT, an organization of francophone universities that used WebCT. According to all the historical documents in my possession, WebCT was installed at the SUED in a technicist logic, in the shadow of our sister institution, the University of Rennes 1, where the IT and Hard Sciences departments are located. It is odd to observe that the Rennes 2 texts concerning WebCT are laden, starting in the year 2000, with references to engineering, passing nimbly from technological engineering to pedagogical engineering without ever providing a stable definition.

---

[28] CSA (French audiovisual authority) study on PC use among the French, http://www.dgemp.minefi.gouv.fr/infopres/presse/synthCSA.pdf

[29] BIGOT R, (2003), La diffusion des technologies de l'information dans la société française, Paris, CREDOC

The institution programmed a technological operation without explicitly referring to the engineering of training programs. In this case, technology did not poach on the territory of pedagogy.

With WebCT, in order to go from "mirages to usages" of ICT, in the words of Sérafin Alava[30], more intermediary levels should have been created, like the consolidation seminars already organized at the SUED. Also online and offline tutoring should have been developed. With WebCT this was not really possible, not for technological reasons, but because the logic of the software market requires increasing financial investments, which quickly becomes incompatible with the organization of a university like ours. WebCT was abandoned in 2004 and at a very high human cost Rennes 2 chose to set up a system of online courses called CURSUS based on the open source distance learning platform Moodle.

A source of hope: Moodle.

Moodle belongs both to the free software movement and the world of socio-constructivist pedagogy. Moodle is a strange community that poaches pedagogy from technology, somewhere between cooperative and collaborative work. Moodle also allows for more traditional teaching styles, notably hybrid courses i.e. as a complement to classroom training. This is the case at Rennes 2 where, on the local CURSUS platform based on Moodle, complementary materials for traditional classroom training co-exist with the materials for the distance learning programs of the SUED, the digital campuses, the Language Center, the Collège Coopératif de Bretagne and the URFIST. It is too early to say if CURSUS is more effective than WebCT, but enthusiasm seems to be greater both among students and colleagues.

2.1.3 Praxis.

In the questionnaire, items concerning WebCT access and browsing took less of a beating:

– site access: 58 positive opinions (out of 85),

– browsing the site: 48 positive opinions (out of 86),

– user-friendliness: 43 positive opinions (out of 81),

– links: 21 positive opinions (out of 49) and 9 discontents.

Then, the number of discontents increased for access to resources:

– access to courses: 33 positive opinions (out of 81) and 28 discontents,

– updating of information: 32 positive opinions (out of 75) and 16 discontents,

– number of courses available: 24 positive opinions (out of 66) and 22 discontents.

The first of these shortcomings is quantitative: the number of online courses and resources was insufficient for a large number of students. Moreover, there were residual technical problems that needed to be ironed out.

Moodle appears to be an interesting system for increasing the offer and thus shifting from the teaching to the learning paradigm (Tardif 1997). This would enable the students at the SUED to browse through a set of content and tools and then to gather (*butiner*) and transform information available online into useful knowledge for their studies. Even if the "learning community" approach of Moodle seems to elude teachers today, perhaps the solution for distance learning in higher education lies in an evolution towards a socio-constructivist - global and multimodal - training scheme or, instead of thinking in terms opposing presence/distance, we will come to think in terms of a dialectical structure organized around the concept of cooperative education.

Observing the evolution of CBU (Campus Based Universities) and DTU (Distance Teaching Universities) towards DMU (Dual Mode Universities), the British economist Greville Rumble (2004) invites us to explore this path, in terms of practices as well as pedagogical programs. His economic analyses of higher education on a planetary level clearly demonstrate that the utopia of "all-distance" learning is dead. In

---

[30] ALAVA, S., (2000). Cyber espace et formations ouvertes. Bruxelles, De Boeck.

all the top universities, the pedagogical showcases that distance learning programs represent are mainly used to attract on-campus students. Perhaps the Moodle project, which is undeniably richer in terms of axiology than a proprietary solution, will be able to integrate this mega trend in the context of French universities and envisage differently the relation between technological and pedagogical engineering?

2.1.4 Psyche.

In the questionnaire, responses to items concerning communication are rather disappointing:

– online follow-up by teachers: 21 positive opinions (out of 60) and 18 discontents,

– forum: 15 positive opinions (out of 58) and 22 discontents,

– messages: 25 positive opinions (out of 59) and 17 discontents.

Preliminary WebCT training should be reinforced:

- help and training with WebCT: 28 positive opinions (out of 75) and 12 discontents.

We can observe that WebCT points to difficulties (e.g. individual monitoring of students) that are inherent in university culture and that technical culture cannot compensate for alone.

The open-ended question in our questionnaire and the interviews enable us to go beyond this mixed global evaluation of WebCT usage. We can find a large number of clues for interpreting this resistance which can appear massive, when in fact it is the sum of a series of shortcomings and malfunctions that, when aggregated, seem insurmountable in the absence of a clearly defined project. The WebCT platform was lacking in interactivity and communication. The encounter between students who were ill-prepared for this type of autonomy and a platform designed by engineers did not function. In the words of Monique Linard[31] "he is a true hyperactor that now demands proper use of ICT, with

---

[31] LINARD M., (1990) Des machines et des hommes, Apprendre avec les nouvelles technologies, Paris, Ed. l'Harmattan, nouvelle édition 1996

high-level global heuristic competencies, capable of dealing with unexpected, unclear and unstable situations, and to (re)define the tasks himself if necessary." Yet this is same population trained by the University, but like all students, the SUED student is not a theoretical being who will adapt without raising an eyebrow to technological constraints when he does not understand. On the contrary, the students of the SUED resisted WebCT because WebCT was not capable ALONE of responding to their training requirements, founded both on a desire to learn and the extreme independence these students display in juggling their studies with transport, work and family. The pedagogical model of the WebCT project remains quite vague. If indeed we can identify its praxeological shift, even its technological dimension was never really promoted. There was no concrete policy or vision of the learning process with ICT. This project was doomed to fail from the start. When an implicit pedagogical model remains implicit to this extent, we have to question the existence of pedagogy in the project's goals.

2.2 Bachelor of Design- Publishing Industry-Specialized in Graphic and Multimedia Design (Licence Professionnelle DESIGN-Métiers de l'Edition - spécialité Conception graphique, multimedia)

2.2.1 Presentation of the second field of investigation.

"This professional bachelor's degree aims to prepare students for jobs in the print and multimedia sectors (on and off line) as graphic designers, lay-out artists or computer graphics designers, project managers or assistant project managers.

Its aim is for students to master the methods of multimedia project management using current data from this business sector (in particular digital technologies) and within a perspective of constant adaptation to the evolution of this data.

It combines apprenticeship of design with acquisition of a "professional culture" with its

different technical, legal and economic aspects in, order to correctly appreciate the scope of an order, its different elements and constraints, and manage the project efficiently, using a relevant organization and providing an appropriate solution.

It combines the apprenticeship of digital tools with theoretical and artistic training designed to optimize the competencies required in graphic design and offer the possibility of career development by obtaining additional qualifications.

A variety of courses have been organized to enable the student, according to his preferences, to orient his studies towards print publishing or on-screen publishing or a combination of the two.

The individualization of courses which conditions the elaboration of the student's personal project is also implemented in the apprenticeship of methods through a pedagogical project. This enables students to acquire the fundamentals but also to experiment and express themselves.

The training is organized in courses with different lengths and schedules and a variable number of students. Great importance is given to project management workshops run by professionals.

The heterogeneous student body results in the organization of differentiated programs that define, outside of the core course (theoretical and general training, foreign languages) the respective proportions of the two main courses (mastery of computing, acquisition of artistic skills) depending on whether the student is, in relation to this know-how and knowledge, in a learning or consolidation phase.

Target skills and professional opportunities:

– *a level of technical skills combined with artistic, creative and methodological capacities, enabling the student to carry out a personal and professional project in the sectors of print media and multimedia publishing,*

– *knowledge of the production chain and capacity to adapt, thanks to a wide range of technical skills, to a variety of operations,*

– *capacity to analyze an order and take into account the technical, economic and legal constraints in order to optimize the terms of the project and the drawing up of technical specifications.*

Current and future professions: assistant project manager and production manager in the multi-media sector (print media, interactive and network media).

Pedagogical organization

The courses take place on three different sites:

- *University of Rennes 2: general and theoretical training, fine arts, graphic design, foreign languages, economics and law, multimedia training,*

- *Lycée Coëtlogon: basic digital tools, paper media training,*

- *École des Beaux-Arts: general artistic skills, graphic design, Internet,*

- *on the three sites: project management (workshops), tutored personal project.*

The courses are divided into four domains:

– *theoretical courses (history and theory),*

– *artistic training (fine arts and graphic design),*

– *apprenticeship of methods (project management methods) and*

– *apprenticeship of tools (mastery of computing).*

In addition to these courses, the program includes a professional internship and a supervised personal project.

Admissions

> Public concerned

– *Students who have obtained a DEUG (French 2-year general university degree) or completed two years of a License (Bachelor's) in fine arts, applied arts or information-communications*

Môle Armoricain de Recherche sur la Société de l Information et les Usages d INternet.

http://www.marsouin.org

Page 12

– *Beaux-Arts students who have obtained a CEAP (2-year Fine Arts Certificate)*

– *Students of architecture who have obtained 2-year degrees (BTS) in graphics, printing, design, visual communications ...»*[32]

History of the degree program:

"For a long time, we were considering in the department (fine arts) the question of a professional degree in applied arts. Until now, we had always rejected the idea for ideological, but above all material, questions. We didn't have the means to run this type of program…Three years ago, the ministry called on universities, and ours in particular, to create professional bachelor's degrees with the aim of completing the course offerings of high schools awarding a BTS. So we were asked almost directly and we asked ourselves if this was a good idea for us and for the sector concerned. After a few meetings amongst ourselves, after several encounters with possible partners, we decided that it corresponded to a need and we observed that a large number of our students found career opportunities in digital imagery. So, it seemed wise to follow this trend and create a specific degree in digital imagery. When we discussed the bachelor's degree, there were several types of professions we could target, but rapidly it seemed that this was the most promising one at the time…So, then we looked for partners, the fine arts school, which became a partner right away, and Coëtlogon high school which had a tradition of training students for the printing trades and also competencies and equipment in all aspects of digital tools. With these two partners we created the bachelor's degree. At the time JS was department head and, with him, I wrote the course description after several meetings with partners and we presented it to the ministry. The project was well-received and we were able to open the program the following year. It happened very quickly." [33]

---

[32] Excerpts from the LP DESIGN brochure

[33] Excerpts from an interview with the head of the LP DESIGN program.

2.2.2 Axis.

In this case, we can see that the request of the Ministry of Education was not taken as an injunction or an obligation. At Rennes 2, Fine Arts is an important department (1,004 students in 2005/2006) where this project was debated by the team with friction between artistic and/or professional training. These colleagues also chose very different local partners: a vocational high school and a fine arts school. Starting from an analysis of the real jobs occupied by graduates of the traditional program is also noteworthy. We can really identify a project based on an intention, a vision, a project ("the professional insertion of the students") and a culture ("the graphic arts").

What do the students think?

Question: Tell me about your first day of training.

Student S told us: *"the first day we arrived they briefly presented the courses, the teachers and each module we were going to have. I was really impressed because the teachers seemed particularly committed because they had just set up this program. They believed in it a lot; there was a budget; in fact everything was going well. The presentation of the courses was interesting for me because it was highly targeted; I really felt like we were going to do a specific training course on specific issues."*

Like the eight other students we met, S was enthusiastic about taking part in the project presented by the teachers.

2.2.3 Praxis.

Let us return to the pedagogical organization with the head of the DESIGN program:

"The idea is that the students choose their program. They choose on several levels: concerning their internship, concerning digital technology. Last year they still all had training in graphics software and they chose between software for Internet or multimedia applications. This year we are going to consolidate this to work on Flash. They also choose their career path, according to their personal project and since the personal project is the most important

*part of their training, they need to create a fin-
ished work accompanied by a dissertation
which is a study of this work and the method
used to create it. So, the choice of the field for
the personal project is a determining factor in
their training".*

"Flash software, finished work, dissertation".
This triptych is the signature of the DESIGN
team's outline of a real training program in a
dual, technico-artistic culture and attempts,
within a university system (e.g. the dissertation)
to individualize the course content via the stu-
dent project. Individualized course content is a
"portmanteau" for quadrennial university pro-
jects. In the case of DESIGN, and other profes-
sional programs, it works because it starts with
the student's project within a cultural frame-
work-in the professional sense- prescribes what
transcends, and gives meaning to, the university
framework for the student. This is close to,
which is rather rare, adult training programs that
use practical experience to enrich theory and
vice versa, transforming the professional into a
thoughtful practitioner.

*"We would like to succeed in continuously re-
positioning ourselves so we are not out of touch
with practices in the professional world. This is
why there is a small group of four people who
work (one teacher from each of the three insti-
tutions and myself) and who have the freedom
to constantly make changes according to the
feedback we get in terms of needs…What can
also be expected of this degree is that it
provides this fine arts dimension because we
are in the artistic field, that it develops this
artistic awareness in students, which is the most
difficult part, and that it also provides them
with a culture in these areas so they are not just
machine operators."*

In this system, the ICT are organized around
evolutions in practices and the discipline, but
with moderation, so that they do not become a
smokescreen.

*"Our vocation, essentially, is training suppor-
ted by digital technologies…I am not in favor
either of the all digital; I am in favor of an
artistic practice that is different from a digital*

practice." As Émmanuel Mahé has demon-
strated (2004)[34], artists, graphic artists among
others, poach ICT. They do not become engin-
eers.

Let us see what the situation is with the stu-
dents.

Question: What are your views concerning ICT?

*"I think ICT is a buzzword. I don't really know
what it means. Separately, information techno-
logies, I think of media and communication
technologies makes me think of the telephone, of
the Internet. The two together, I don't know.
(Pause) For me it's something that is com-
pletely integrated."*

And ICT for a teacher:

*"This is where theoretical courses, the work-
shop, mean something. Because they enable
roughly to situate the technologies not only
from a technical point of view, but from a so-
cial, artistic, even political point of view, that is
to say, the place of technology in our society is
a fundamental aspect in their profession."*

At no point, during all the interviews, did we
sense the temptation of technicism and, even
though it is a highly professional program, the
notion of engineering was never mentioned. The
pedagogical practices and principles seem very
solid but, and this is rather surprising, the
vocabulary of professional training and ICT
were curiously absent. It was the "professional"
vocabulary, of computer graphic designers,
which dominated.

As for the rest, in the pedagogical and technolo-
gical environments run by the University, there
is some pretty successful odd-jobbing going on.

2.2.4 Psyche.

Question for a teacher: What is the nature of the
relationship between the teacher, the learner and
the machine?

*"It's a relationship that could be guided by ped-
agogy. We are in a professional training course*

[34] MAHÉ E, 2004, Pour une esthétique in-formation-
nelle, La création artistique comme anticipation des us-
ages sociaux. Thèse de Doctorat, Université Rennes 2

that has based everything on student projects and on differentiated course programs. Each student follows his own path. The teacher must be capable of understanding this dimension of the training and adapt his teaching, his pedagogy to the students."

The implicit pedagogical model of the DESIGN degree touches on the psychological level through the recognition of the student by the teacher supported by solid values. The ICT are integrated afterwards.

Question: What comments can you make about the use of information and communication technologies in this training program and teaching in general?

"I totally reject the term new information and communication technologies for two reasons. They are not new; the computer has already been around since 1950, the same for networks which have been covered since the 1980's. So, it's better to say digital technologies. As for the terms information and communication, they mean nothing since they have become so generalized. Information and communications technologies is an advertising slogan. On the other hand, it's a real tool and it's essential. In our case, we do not teach ICT, certainly not, we are not in communications but fine arts, but obviously our students use these tools. New information and communication technologies, if you mean we use digital technologies to learn, then yes, that's all we do. If it's only a response to ministerial budgets where they are going to spend two billion to connect all the kindergartens in France, to set up a network with teachers who have never used a computer and who haven't a clue what to do with it in their classes and in fine, society itself can't respond to an advertising need, and does not know what to do with it, even though there is a real need which is never detected.

You can see that my views are quite frank; these are the words of a passionate person and a specialist who is demanding and who doesn't want people to say just anything about what he teaches and what is digital today. These tools are being massively developed and people have

to use critical judgment, teachers have to adopt a critical stance and students have to be confronted with them and we shouldn't just swallow that without questioning it. And this can be the source of real pedagogy, that is to say, a point of view transmitted to train someone and not an idea for the masses as if we were force-feeding them."

This teacher passionately defends a vision of digital technologies that transcends the training program.

What are the effects on students?

Question: How has your opinion of ICT changed since the beginning of the courses?

Student G answers:

"That's a difficult question; it's not obvious. But I think that before I entered, I didn't see the professional world at all. When you arrive, you still feel like a student and you expect to be taken by the hand and taught something, but in fact you are much more autonomous and at the end of the year you start to realize that you have become a professional, at least in how you work."

Even if the other answers by the DESIGN students echo the same idea, that there is a critical distance vis-à-vis ICT that makes them more autonomous, the one above is exemplary. G does not mention ICT, but only his own development, his professionalization. Project-based pedagogy has enabled him to construct a vision of the future, to acquire a professional culture and master tools. ICT is absent from his discourse, but serves as a marker in the professionalization process.

The pedagogical model of the Bachelor's degree in Design appears to be balanced on the Axis-Praxis line. Indeed, a strong pedagogical project, highly energized by a "fine arts" culture, guides the practices of the teachers and students. It is perhaps in its psychological dimension that this is the most implicit, by leaving to the student the choice (and therefore the dynamics) of a personal project (and therefore his professionalization).

2.3 Bachelor s in Personalized Training Programs and Strategies (SDIF-Licence Professionnelle -Intervention sociale Stratégies et Dispositifs Individualisés en Formation).

2.3.1 Presentation of the third field of investigation.

Finalities:

The function of trainer can no longer be conceived today according to the industrial model of its early days, inspired largely by schooling. The discontinuity of paths has become the rule in the post-modern era. The need for requalification, retraining and professionalization generated by economic globalization prompt us to reinvent, once again, the function of trainer. This reinterpretation of the trainer's role is justified in order to respond to the expectations of highly heterogeneous populations in terms of age, experience and social group. In a variety of professional contexts the function of trainer therefore tends to adapt to include, in its traditional functions, aspects of evaluation and orientation, counseling and monitoring of course programs, within individualized training systems.

Public concerned:

This training program is for professionals:

– *trainers in adult training organizations,*

– *in-house trainers in companies,*

– *trainers-counselors in the field of training and employment,*

– *trainers in social and professional insertion,*

– *trainers involved in the fight against "illiteracy",*

– *students of training who wish to acquire professional experience in the functions presented above, who have a relevant undergraduate degree and who wish to develop their employability through a second qualification as a trainer.*

Objectives

The aim of this professional bachelor's degree is the professionalization of trainers through the acquisition of two major competencies:

– *pedagogical engineering (capacity to use a variety of pedagogical tools and methods within an appropriate framework adapted to the level of experience of the trainees. Starting with the various characteristics of the members within a group of trainees, this means also creating favorable group dynamics for the learning experience),*

– *personal development coaching: this means developing capacities to assist in the construction of personal professional projects, while taking into account a global approach of the trainees and their life plans. Coaching must respect the social, cultural and philosophical integrity of the trainees.*

Organization

The training is divided into semesters and lasts one year, from September to September. It is organized in seminars grouped together on 5 days a month. This system should allow each trainee to design a training program according to his personal training project.

The internship

Candidates who are not regularly employed in the field of training must carry out an internship during the training program, over a period of 8 months working two weeks per month. This means performing professional activities within the framework of an innovative pedagogical project. The internship serves as the basis of a report, defended before a jury of professionals and faculty members.

The dissertation

Based on the implementation of an Innovative Pedagogical Project initiated by each student, the I.P.P. must lead the trainer to design and carry out a training project and implement thoughtful and structured professional practices. To do this, the student is coached by a tu-

tor. The dissertation is defended before a jury of professionals and faculty members.

Admissions:

– *For professionals:*

– *3 years minimum professional experience in the field of professional training or a diploma equivalent to two years of a Bachelor's degree,*

– *or VAE (Validation d'Acquis d'Expérience, credit awarded for professional experience)*

– *For students: 2-year university degree (or two years of a Bachelor's degree) or equivalent state recognized diplomas and knowledge in the field of insertion and/or training (internship, personal project, personal involvement).*

Admission is granted after examination of the candidate's application and admissions interviews.

History of the SDIF

Interview with the head of department:

"I worked for many years in adult training… that led to the creation of a DESS (Master's degree), the DESS SIFA. For a long time I had the idea that it was important to set up a sort of pathway, a cursus up the slope of adult training…So, I first put in a request to create a licence professionnelle (Bachelor's) in adult training which was turned down because the partnerships were not sufficiently explicit. I took up my application and I discussed it with PP who told me that he was interested in creating something for after the DEUST (two-year scientific degree) and on the other hand, JD told me that he was interested in a third year after the DUT (two-year technical degree). So we pooled our resources and we created this social action project with these three majors. These are therefore personal initiatives linked to knowledge of the organization of training and the training market. It also corresponds to a public preoccupation; there is demand for certification of adult trainers because it's a very open profession where you can get in on your competencies and not your diplomas. A certain number of adult trainers have functioned as adult trainers without a diploma but are perfectly competent, except that they need at a certain moment to legitimize their position and so they decide to do a licence professionnelle."

This is a highly professionalizing pedagogical project that is based both on an analysis of employment opportunities and the implementation of the LMD (Licence, Master, Doctorat) system in France creating the need to offer a Bachelor's (Licence) to students with 2-year degrees. The distance with the Department of Educational Sciences is important and the pedagogical team is for the most part made up of professional trainers from outside Rennes 2. Of the three initial majors, only two remain because the USET-IC major[35] became a separate degree and opened in 2004.

Question for student O:

Try to remember and tell me what you retained from your first day of training?

"Perhaps the diversity of the trainees, with completely different origins, pasts, different jobs and, obviously, ages and experiences, with a majority of people in adult training and at the same time college students."

This Bachelor's degree is characterized by a high percentage of students in adult training. This creates a special form of emulation that encourages the integration of professional culture by the college students. They speak of "trainees" just like in the world of professional adult training. In relation to ICTE, the SDIF is particularly interesting because it has no specific courses in this area and the majority of trainers distance themselves from the phenomenon.

2.3.2 Axis

Question concerning ICT for the head of the SDIF: Tell me about your reservations; what are they exactly?

---

[35] The LP USETIC was also studied within the framework of this research, but since I am in charge of the program, it was the object of a specific scientific treatment and modelization.

Môle Armoricain de Recherche sur la Société de l Informorение et les Usages d INternet.
http://www.marsouin.org

Région BRETAGNE
M@RSOUIN

RENNES 2 UNIVERSITE HAUTE BRETAGNE

Page 17

"My reservations are linked to my personal history. I am from the pencil and paper, group work, etc. school. So, in my own professional practices I don't use educational technologies. However, when we set up the DESS SIFA, ten years ago, nobody was interested in new technologies, but we set them up, because it's a diploma taught at three universities and with people who come from all over France, from training in new technologies. Because that seemed fundamental to us on a cultural level, on the level of professional practices for the future training managers who are our students. So, I'm totally open, even in favor of new technologies, but be that as it may, it is not one of my personal competencies so I haven't the practice that enables me to adopt a position. I can only see that it requires a lot of strategies and engineering not to succumb to the total technology approach. It's a tool and should be used as such."

Interested, but not fooled, her last phrase was particularly surprising. "Lots of strategies and engineering" are needed to fight off the total technology approach. Coming from the creator and head of a *DESS Stratégie and Ingénierie en Formation d'Adultes*[36] (Master's), this assertion is so unusual it can only raise more questions. The mention of the main competencies "Strategy and Engineering" of this degree as a firewall protecting pedagogy from the invasion of technology is a blow to the link often made between pedagogical and training engineering, on the one hand, and technological and multimedia engineering on the other.

Question for teacher D: How do you view digital interactivity and its possibilities?

"I am not a specialist in advanced technologies; sometimes I am skeptical of technologies; I am not competent in the area, but I willingly play the role of sociologist in advanced technologies. For me, what's important in a tool, even

if it's a cutting-edge technological tool, it's the conditions of use. I am fiercely opposed to the idea that technologies decide and that we have to adapt to technologies. And yet, in the computer technician's approach, it's often the case, a binary approach. In other words, a computer programmer is going to translate very complex things into binary code. Society is made up of complex things, yet at a given moment, the individual is asked to fit into a binary system and me, I don't accept that. On this point I am categorical; I do not accept this binary dictatorship which aims to simplify everything. Concerning, then, the place of advanced technologies, I would say they will occupy, as in the history of our societies, their rightful place, but nothing more than their place. And as for me, I am among those who will remain vigilant about what I referred to as the conditions of use of these tools. We have to make sure that people are always in control, that they think while they use the tool but not through the tool. So if these tools allow me to store information, redistribute it, broadcast it, for that part, it's very interesting, it's wonderful. But I remain in control of my ideas, of the construction. I shouldn't have to adapt them or format them so that they can fit the tool I'm offered. The only question, then, that interests me is that the individual remains in control of these tools."

Even if the use of ICTE is not rejected, we can still find many ideological representations that are linked, psychologically, to the fear of "Big Brother" referred to by George Orwell in the book 1984. There is a fusion-confusion between machines, the men that make them and the powers that control them, even if they never do so completely. All the other interviews of SDIF teachers echo the same ideas, although the professional trainers are much more moderate.

2.3.3 Psyche

Question for professional G: What are your remarks concerning the use of ICT in your training course?

"Me, I make a presentation of how they could be used, of what needs to be implemented to use ICT. After that I worked on another module. But

---

[36] The DESS SIFA was the flagship diploma in adult training. Numerous SIFA (Société d'Investissement France Active, organization that invests in training) have prime responsibilities in this sector (EC, Ministry, Region, large companies or federations…).

I did have the impression that for people whose job later on will be in teaching, they stick with very traditional teaching methods. This was a surprise because it's something you can understand for young people who have never taught. It surprised me more in individuals who already had professional training experience. They have stuck to traditional methods while telling me that they new how to do this, they already have done that, you're explaining more complicated, more expensive things. I didn't feel they were ready to deal with it and I find that curious."

Indeed, interviews carried out with the adult training students echoed the same themes of defiance and resistance to ICT mentioned above by the teachers. In the world of training, the phantasm of "Big Brother" means, as in the world of education, fear of the teacher being replaced by the machine and what the machine represents. If certain techno-economic[37] or socio-political[38] analyses point in this direction, all the studies cited above demonstrate that neither ICT*E*, nor competition between schools has exploded over the last five years, particularly in higher education.

2.3.4 Praxis

Nevertheless, student O, also in adult training, surprised us with the clarity of his answers.

Question: What are your views concerning ICT?

"I'm particularly interested because this concerns my professional project. I am setting up, and not without difficulties, a platform and tools…We (the company in which I work) is really in sectors (graphics, imagery, 3D…) that are very close to technologies, the tools on which we train are tools that are part of ICT. We are already steeped in this culture, now we

---

[37] DI COSMO R., NORA D., (1998), Le hold-up planétaire, la face cachée de microsoft, Paris, Ed. Calmann-Lévy

[38] DE SELYS G., HIRTT N., (1998), Tableau noir, Appel à la résistance contre la privatisation de l'enseignement, Antwerp, Ed. EPO

need to provide trainees with effective systems. Today, I am taking time to think about the precautions required before setting up these tools, "imposing" them on trainers, while respecting the new organization that should be that of the company, before being that of the trainees."

Question: What are your expectations concerning digital interactivity?

"That it really serves as a complement to other systems and not just an isolated tool. Lots of articles specify that the use of ICT in education and training should be mixed with classroom training and distance learning, tutored assignments, self-training and also a series of paper tools and documents and a central matrix that enables learners to move from one system to another in a flexible way. So, there is a lot of work to be done concerning the effectiveness of this central matrix The matrix is a thematic thread that guides the learner along his pathway and his use of different resources. A guiding matrix should be conceived by a team so as not to overlook a large number of technical and pedagogical aspects considering all the evaluation and monitoring phases involved."

For O, it is fairly clear that the competencies developed in the SDIF program are easily integrated in an ICT culture. His position resembles that of the student in DESIGN, even though the latter is a college student and much younger.

The pedagogical model of the SDIF degree appears to be balanced within the Axis-Praxis-Psyche triangle. The professional culture of adult training is omnipresent with one exception: it has not yet integrated the range of ICT*E* in this area (distance learning, e-learning…). In Brittany, the initial trends of studies on EPN (*Espaces Publiques Numériques*, public digital access points), P@T (*Point d'Accès à la Téléformation*, public access to online learning) and the SKODEN portal (open distance learning portal), all come to the same conclusion. The world of adult training is adopting ICTE at its own pace.

Concerning ICT*E*, in light of this attempt to reveal the implicit pedagogical models behind

these training programs, I would like to examine several notions on three different levels:

– a generalized view of ICT*E*,

– the cultural experience of ICT*E*,

– the systematization of ICT*E*.

In these different studies, our three fields of investigation have illustrated, in different ways, the factors that discourage or encourage the introduction of ICT*E* in higher education:

– for the WebCT project, the SUED lacked a "vision" of ICT*E*,

– the Bachelor's degree in Design provided students with a cultural experience of ICT*E*, and more generally of ICT,

– the SDIF diploma, in keeping with the professional culture of its sector, is ambivalent on the question of ICT*E*. Its program does not provide for the systemization of ICT*E*.

3 ANTHROPOLOGICAL PROPOSALS CONCERNING ICTE.

For each of these three levels I would like to propose three core concepts which, even if they are not all completely developed, could form the theory of the 3 "B"s of ICTE: *Butinage* (gathering), *Braconnage* (poaching) and *Bricolage* (odd-jobbing).

In the generalized view of ICTE, 'gathering' relates dialectically to notions of navigation. [39].

Within the cultural experience of ICTE, 'poaching' relates dialectically to notions of programming.

In the systematization of ICTE, 'odd-jobbing' relates dialectically to notions of engineering.

---

[39] *Dialectics* –living logico-philosophical culture- is understood here as logically thinking of contradictions and using these thoughts in order to solve them. See Lucien Sève et all. (2005), Émergence, complexité et dialectique, Paris, Odile Jacob

3.1 *Butinage* versus *navigation*.

Bees flit from flower to flower, *gathering* pollen…

Young people *gather* information from blogs…

Students and teachers *gather* information on Moodle…

In the mid 80's, well before Internet, a first hypertext appeared on Macintosh called Hyper-Card. I was in Montreal at the time and with my student friends in Quebec, we mutually gathered piles of HyperCards that we had programmed. If the term *butinage* was used a little at the beginning of the 90's, with the arrival of the Internet, it quickly became obsolete in favor of *navigation* (browsing). The term is no longer used, except for, perhaps, to describe the behavior of a web surfer who dallies from site to site or in marketing to describe a customer looking for a "find" on the supermarket shelves. This is totally unfair because bees do not dawdle around; they work hard for their hive, for the community. So this would be an unfair end for such a lovely term. We propose to use it as a, hopefully convincing, concept in ICT*E*.

In ICT*E* a user who gathers is looking for rich content and what is rich content other than knowledge? Gathering enables us to differentiate the web surfer from the "web student". One browses while the other gathers, or browses with the aim of learning. We still need to examine this emerging concept within the framework of cooperative, collaborative and community work, which is developing on the Internet where it could play an important role in filling the conceptual void around learning activities in a knowledge-based economy.

3.2 *Braconnage* versus *programming*.

In SSH, when we talk about *braconnage* (poaching), we think of Michel de Certeau.

"This essay is dedicated to the ordinary man. A common hero. A ubiquitous character. A legion of foot soldiers. By invoking, at the beginning of my tales, this absent figure who is their starting point and necessity, I wonder about the desire

of which he is the impossible object. To this oracle confounded with the rumor of history, what are we asked to make him think or are we allowed to say when we devote to him writing that was once offered to the gods in homage or to our muses? This anonymous hero has come a long way. It is the murmur of societies…"

For Michel de Certeau, cultural consumption is productive and its uses creative. De Certeau uses the methodological approaches of Jean-Pierre Vernant and Marcel Detienne concerning creative ingenuity to reach this lunar creativity, to use the terms of Paul Taylor[40]. He considers reading as a form of poaching through which the reader, in private, rewrites the author's text with his own cultural references. From this perspective, usages are apprehended as inventive and creative practices that contribute to "everyday invention". The gap between top-down usages (a priori conceived) and bottom-up usages (invented by users) is therefore understood as a sign of their real integration in user culture and not as a malfunction or obstacle to the dissemination of innovations. The consumer act (or use) is considered as a construction, an invisible, ingenious and silent "poïetic" (in Greek *poïen* means create). The gap between what is prescribed and what is appropriated (experienced) is considered an ordinary human activity: poaching. In ICT, usage and poaching redefine the relations of the subject with the machine by drawing attention to the way he projects his desires, imaginaries and cultural references beyond the way he uses it. ICT, even more than other machines, are the product of labor but also of the affects and cultures of the engineers who conceive them. Daniel Sibony even speaks of the embodiment of residual unconsciousness. The work of Josiane Jouët demonstrates that the different ways users incorporate the signifiers left by engineers in ICT are unpredictable. Thanks to the concept of poaching, De Certeau enables us to balance horizontally the relationship between users and engineers, which the latter

---

[40] Paul Taylor is Professor of Education Sciences at the University of Rennes 2. He contrasts "solar knowledge" (academic) with "lunar knowledge" from experience, which is less brightly lit.

tend to view as vertical and top-down. In the implicit pedagogical models of the WebCT project and certain digital campuses, the top-down organization of the teams is perceptible. For CURSUS (Moodle) and the Bachelor's in Design, a bottom-up approach that encourages autonomy and/or collaboration is promoted. In this way, for ICT the concept of poaching is the opposite of programming in both the IT and technocratic or managerial senses.

3.3 *Bricolage* versus *engineering*.

Let us reiterate the famous definition of odd-jobbing by Claude Lévi-Strauss in "The Savage Mind":

"There still exists among ourselves an activity which on the technical plane gives us quite a good understanding of what a science we prefer to call 'prior' rather than 'primitive', could have been on the plane of speculation. This is what is commonly called 'bricolage' in French [...] The 'bricoleur' is adept at performing a large number of diverse tasks; but, unlike the engineer, he does not subordinate each of them to the availability of raw materials and tools conceived and procured for the purpose of the project. His universe of instruments is closed and the rules of his game are always to make do with 'whatever is at hand', that is to say with a set of tools and materials which is always finite and is also heterogeneous because what it contains bears no relation to the current project…"

Confronted with ICT*E*, teachers in higher education tinker with universes of instruments that are closed, or almost closed, depending on the equipment of the school, on the platform and their own technical competencies.

"The global means of the odd-jobber is therefore not defined by a project (which would suppose, moreover, that like engineers, the existence of as many sets of tools and types of projects, at least in theory); they are defined solely by its instrumentality, in other words and in the language of odd-jobbers, because the elements are collected or conserved according to the principle "that could always come in handy". These elements are therefore semi-specialized: sufficiently so that the odd-jobber does not re-

quire the equipment and know-how of the all the building trades, but enough so that each element is restricted to a specific use. Each element represents a set of relationships that are both concrete and virtual; they are operators, but useable for various and sundry operations within a type."

And yet, teachers in higher education still have more or less formal pedagogical projects which refer, for some, to the engineering we see appearing in a multitude of forms.

For ICTE, the bricolage/engineering dialectic is probably the richest in our theory of the 3 "Bs".

We saw with WebCT that technological engineering stifles pedagogy. In contexts with sufficient means (e-learning portals of large companies, top engineering schools, digital campuses…) production engineering and a managerial approach limit ICTE to experiments that often lead nowhere. These two examples show that the tool universe of the engineer is potentially infinite. It is only restricted by financial means which, in European universities and even more in economically disadvantaged parts of the world, are quite limited. It is this excess, this appetite for financial means, described by Alain Bron and Vincent de Gaulejac[41] in the case of ICT, that is causing profound cleavages in the information society and the knowledge-based economy in higher education.

And what about pedagogical engineering, which we were told in the SDIF program, could push back the attacks of ICT? If we define it as a set of coherent methodological approaches that apply to the design and implementation of training programs, then it is not very different from all the sciences of the engineer. Engineering is responsible for organizing all the aspects (economic, financial, technological and human) associated with the study and accomplishment of a project, whatever its nature. Since the 19th century, the strength of engineering has resided in the application of results and methods of (hard) science to concrete problems. It is this mechanical application that is a problem for pedagogy,

particularly in higher education. As the study of the DESIGN degree program shows, it is possible to perform training engineering without being aware of it, without asserting it. Training engineering has its own contradiction in that it can be predictive and completely top-down. It is invented as much through action (a question of pedagogical engineering?) as it can be prepared through organization, which brings us back to the question of odd-jobbing.

Training engineering does not deplete pedagogical practices because the training situation cannot totally fit within a logical tree structure. There is always some tinkering and when this stops, it means the system is no longer working. ICT*E* really highlights the limits of systematizing pedagogical practices because they tend to be blocked very quickly…like WebCT which disappeared after only one year! The profile of the teacher in higher education which is revealed through the professional and distance training programs we have studied cannot be limited to the profile of the odd-jobber or the engineer. It is somewhere in between the two, sometimes like one or the other, within a world of practices that are not always reflective.

The final question that this paper could raise might be: Between the engineering and odd-jobbing of the teacher, what about the student's learning experience[42] ?

---

[42] To delve even deeper, our team is currently taking part in international research that aims to understand how the adoption of the Internet by students of higher education is organized in four countries that are culturally and geographically very different (Canada, Mexico, Sweden and France) including a highly qualitative regional study for the four universities of Brittany.

[41] BRON A., DE GAULEJAC V. (1995), La gourmandise du tapir, Paris, Ed. Desclée de Brouwer

REFERENCES.

Alava S., (2000). *Cyber espace et formations ouvertes*. Bruxelles, De Boeck

Ardoino J., (1993), « L approche multi référentielle (plurielle) des situations éducatives et formatives, in *Pratiques de formation-analyses*, n° 25/26, (« L approche multi référentielle en formation et en sciences de l éducation») Paris VIII-Formation permanente, PUV

Beillerot J., Blanchard-Laville C., Mosconi N., *Pour une clinique du rapport au savoir*, Paris, Ed. L Harmattan

Bigot R, (2003), *La diffusion des technologies de l information dans la société française*, Paris, CREDOC

Blanchard-Laville C., (1999), *L approche clinique d inspiration psychanalytique: enjeux théoriques et méthodologiques*, Revue Française de Pédagogie, N° 127, Paris

Blanchard-Laville C. et all., (2005), *Recherches cliniques d orientation dans le champ de l éducation et de la formation*, Revue Française de Pédagogie, N° 151, Paris

Boutinet J.P., (1990), *Anthropologie du projet* Paris, PUF

Castoriadis C., (1975), *L'institution Imaginaire de la Société*, Paris : Seuil

De Certeau M, (1980) *L invention du quotidien, 1/ Arts de faire*, rééd. Gallimard/ Folio Essais n° 146, 2002

De Selys G., Hirtt N., (1998), *Tableau noir, Appel à la résistance contre la privatisation de l enseignement*, Anvers, Ed. EPO

Di Cosmo R., Nora D., (1998), *Le hold-up planétaire, la face cachée de microsoft*, Paris, Ed. Calmann-Lévy

Levi-Strauss C, (1962), La Pensée sauvage, Paris, Ed. Plon

Linard M., (1990) *Des machines et des hommes, Apprendre avec les nouvelles technologies*, Paris, Ed. l Harmattan, nouvelle édition 1996

Jullien N., Trémenbert J., (2006) *L équipement informatique des ménages bretons, fin 2005,* M@rsouin

Mahé E, 2004, *Pour une esthétique in-formationnelle, La création artistique comme anticipation des usages sociaux*, Thèse de Doctorat, Université Rennes 2

Meirieu P., (1990) Le modèle et le pédagogue *in L'intelligence au programme* coll. Le groupe familial N° 129, Paris, Ed. FNEPE

Plantard P., (2007), (s/d) *Les TICE dans l enseignement supérieur enjeux et perspectives*, Rennes (à paraître)

Plantard P., (2006), *ICT in Higher Education: a question of approach*, In m-ICTE 2006 Current Developments in Technology-Assisted Education, Seville Formatex

Plantard P., (2003), *Les étudiants de la démocratisation face à l emploi* in L entrée des jeunes dans la vie active en Bretagne, Ed. Regards/Syllepse, Paris

Plantard P., (2002), *Harmony : les technologies éducatives au service de l insertion* in Réponses institutionnelles N°5 « Chemins d écoliers, curricula en cavale», Ed. CERPPE, Rennes

Plantard P., (1999), *Le Village planétaire est-il encore possible ?,* in *VEI Ville École Intégration*, N° 119 « nouvelles technologies et l'exclusion », Paris, Ed. CNED

Plantard P. (1999), De l éducation virtuelle in *VEI Ville École Intégration*, N° 119 « nouvelles technologies et l'exclusion », Paris, Ed. CNED

Sève L. et all. (2005), *Émergence, complexité et dialectique*, Paris, Odile Jacob

Winnicott D.W., (1971) *Jeu et Réalité*, Paris, Gallimard

LES BULLETINS RÉCENTS.

Année 2007.

5-2007. Bouder C., Charlier J.-M., Leray Y., Mével O. Enjeux et perspectives de la logistique des retours appliquée à la grande distribution : l exemple des D3E.

4-2007. Le Goff M., Lethiais V. TIC, besoins de coordination et d information et proximité géographique: une analyse sur des données bretonnes.

3-2007. Trémenbert J., Jullien N. L évaluation du rapport des TPE de l artisanat aux TIC. Le cas de la Bretagne.

2-2007. Le Borgne et al. Évaluation des usages du Dossier Patient Partagé au sein d un réseau d addictions. Analyse sociologique versus analyse des « logs files ». Application au réseau ADDICA, Champagne-Ardennes.

1-2007. Trellu H. Création des réseaux de santé et usages du dossier médical partagé.

Année 2006.

13-2006. Jullien N., Trémenbert J. Les PME bretonnes : leur équipement en technologies numériques, leurs usages et leurs attentes.

12-2006. Thierry D. Modalités de circulation de l information sur un territoire régional.

11-2006. Pénard T., Suire R. Le rôle des Interactions Sociales dans les modèles économiques de l Internet.

Môle Armoricain de Recherche sur la Société de l Information et les Usages d INternet.

http://www.marsouin.org

Page 23

10-2006. Petr C., Guéguen N. Beginner Research on Tourism and the Tourist: Beware of Words and Caricatures!

9-2006. Dang Nguyen G., Mével O. Nouvelle et et ancienne économie : vers une intégration réussie ?

8-2006. Jullien N., Zimmermann J.-B. Free/Libre/Open Source Software (FLOSS) : lessons for intellectual property rights management in a knowledge-based economy.

7-2006. Demazière D., Horn F., Jullien N. How free software developers work. The mobilization of distant communities .

6-2006. Pénard T., Poussing N. Usage d'Internet et capital social.

5-2006. Masclet D., Pénard T. Pourquoi évaluer son partenaire lors d une transaction à la eBay? une approche expérimentale

4-2006. Dang Nguyen G., Genthon C. Les perspectives du secteur TIC en Europe.

3-2006. Boutet A., Tréllu H. Appréhender les territoires de la réalité et de la virtualité à travers la création d un site de « quartier » : l exemple de «Couleur quartier » à Kérourien (Brest)

Responsables de l'édition : Godefroy Dang Nguyen, Nicolas Jullien.