THE e-PORTFOLIO IN A PROFESSIONAL TRAINING SCHEME: WHAT IS AT STAKE AND THE LIMITS OF THE SCHEME

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Abstract: On the occasion of the first international francophone conference on the e-portfolio in Quebec, (Trestini, 2006), we presented a e- portfolio which was conceived with the aim to facilitate the acquisition and the validation of skills for the C2i2e, a computer and internet certificate required for teacher trainees in all the IUFMs (French Institutes for teacher training) of France. Now that the IUFMs are going to be integrated into the university, a new national law (Dec. 28, 2006) stipulates that this program must enable the students to acquire adequate knowledge in ten professional skills areas. If one acquires the C2i2e, this in itself attests to the fact that one has gained knowledge in one of the areas (law of May 9, 2007). Our e-portfolio, which was up until now used solely for the C2i2e, could now be used to obtain the remaining nine professional skills. However, before setting out on this "adventure", it would be wise to draw conclusions from our experiments in order to define the general conditions for using this artefact with the whole of the training program. The aim of this article is precisely to draw conclusions about the feasibility of applying this to the whole of the program.

Keywords: e-portfolio, teacher training, constructivist learning enviornment

1. Problematic emerging from an institutional context

In France, while the teacher training program is integrating the university because of a new law (*cahier des charges de la formation des maîtres en IUFM:* 19/12/2006) concerning professional skills, the modalities of the training program must once again be reconsidered and redone. To get training in this profession will consist in acquiring a series of "formalized skills" via the employer (In this case, the government). Now one must justify the knowledge and skills one has gained and then have these skills recognized by the state. The idea of a skill is nevertheless not new in the area of professional training, but no one can deny the fact that the contents of a course can vary from one situation to another. The radical use of the system modifies the balance of the representations of this notion and makes the people responsible for the training rethink their course plans in order to adhere to the ministerial law. The stance that is generally taken is to avoid following the laws too closely but instead to apply the notion because of its usefulness and practicality. It would be awkward and in vain to follow the laws so closely that one is stuck in a bipolar scenario which opposes modular training to a skill-based training program. Traditional modular training leads the learner to get involved in diverse activities which are usually conducive to gaining skills. Therefore, we can ask ourselves what changes can be brought to our current training programs in order to conform to the new institutional choices.

The first idea that comes to mind would be to propose activities or tasks that are regrouped in units or modules of training and which lead to the construction of a group of skills among the ones cited in the national referential. In that case, one must make sure that the whole of the activities that are offered enable the acquisition of all the required competences. This approach would also have the advantage of facilitating the evaluation and validation of competences since the approach would be based on the training program that is recommended and known.

The second idea that comes to mind would be to ask the teacher to identify in the referential the professional competences that he or she has already gained and to identify the ones that he or she needs to acquire. The teacher would then freely plan out a training scheme which aims at gaining the skills that are required. At the same time the student would look for situations in which he or she could be evaluated and prove the mastery of certain required skills. The elaboration of a personal plan, in our opinion, has at least two advantages:

Firstly, it would prevent the teachers in training from sitting through training programs that they don't need and that are not very useful to them. Why should one ask a teacher to work on getting the skills that he or she already has? In this sense, the new way of training facilitates what we call validation of skills and experience. This is allowed as long as the training program allows for the attainment of skills, evaluations and validation of skills and experience (VAE). The validation of skills is made possible when the training scheme has separate contexts for acquisition and separate contexts for evaluation.

Therefore, any competence that one judges acquired should be observed and validated by a person who is entitled to do so, in a context that is easily observable. For example, during a class animated by a teacher in training, the master trainer (titled teacher present in the class) would be allowed to attest to a skill that is observable on that specific occasion. Note that, unlike the preceding approach, this one is different from the tradition of immediately following up the training up with a test. Once again, in this particular case, the situations of training and of testing must be different.

Furthermore, this approach brings on the construction of meta-cognitive skills that all the specialists consider essential: in particular, when the teacher has a long career: realizing a need for training, the ability to analyse one's teaching, the ability to be up to date in one's training and to set up training programs throughout one's career.

We must note that according to the second approach, using a numerical portfolio would be useful: It is this hypothesis that we formulate. Firstly, it would encourage the owners of the portfolios to reflect on the links between objectives they decided on previously and the realization of these objectives. This reflection is supported when one moves on to the written phase of the telling of a personal story, revealing to the teller, his strong points and his weaknesses. Furthermore, with the complexity of the recommended path, this tool would help organize by incorporating everything into one collection of numerical information which describes and illustrates the person's learning, his experience, his failures and his successes. It enables one to better know what he has achieved and to have his knowledge recognized on an institutional or professional level. In our case:

- It gives the teacher trainee the possibility of creating a document which logs the development of his work,
- It allows the teacher trainee to analyse his/her learning, his/her strong points and weaknesses in order to confirm or correct his/her knowledge and know-how,
- It makes teacher trainee responsible and it encourages autonomy,
- It enables the teacher trainee to quickly and easily visualize his/her work,
- It allows one to assess one's achievement at will and at any time,
- It enables the teacher trainee to keep his/her work,
- It offers virtual spaces where other trainees can give input, contribute and explore other areas of competence.

Keeping in mind all this and to avoid blindly creating a training scheme, without knowing the consequences, it would be best to keep in mind past experiences. Luckily, in the past at the IUFM there *has* been training based on skills (teacher training school). In fact, in a more structured way since 2006, the teacher trainees must acquire 27 competences concerning the mastery of information technology and communication for teaching with the goal of obtaining a certificate which proves computer literacy for teachers (BO n°33 from 14 September 2006). This way of getting training (according to your needs) already exists and gives the people who are responsible for this type of training useful information. This was especially true for the IUFM (teacher training school) of Alsace which chose to start this type of training according to one's competence. The IUFM chose the second strategy that was described earlier; in other words, letting the trainees choose the courses that they felt they needed. To facilitate the construction and the evolution of this scheme, the teacher trainee was given an e-Portfolio that was accessible via his numeric work environment (ENT).

While we carefully avoided mechanically applying the knowledge gained through the C2i2e to the larger scheme of skills, we nevertheless wanted to find indications that would help us to realize such a project. The results of our experiments, which we will give here, have no other goal than to evaluate the efficiency of the procedure that we chose and to let us know if such a procedure could be transferable to a larger project—a project that would meet our requirements.

In the next paragraph we describe the procedure that we used, then in paragraph 3 we describe the tools we used. Section 4 explores the questions that we asked ourselves and the answers that we obtained based on the experiments we conducted. To conclude, we evaluate what is at stake, the limits of the strategy we chose and the pertinence of applying it to a general training scheme.

2. Description of the approach

At the start of the academic year 2006, the institution of the C2i (a test that proves one has a minimum knowledge in computer science) brought up the question of whether the 27 required skills of the training program could be covered and validated. Normally, the training program is given to 515 teacher trainees teaching in more than 150 different junior highs and high schools. Moreover, it is also followed by hundreds of teachers and teacher trainees from elementary schools. This represents approximately 30,000 validations to deal with; a real challenge (Cf. ePortfolio Québec 2006, Trestini, 2006). Another challenge to keep in mind is the fact that we must validate experience (VAE). Actually, several teacher trainees come to the IUFM with a large number of skills that they gained in other contexts than courses for teachers. They could have gained their skills at the university, in the professional world or on a personal level. Therefore, we offered (not imposed) a list of possible contexts in which they could gain, perfect and validate their qualifications (Figure 1).

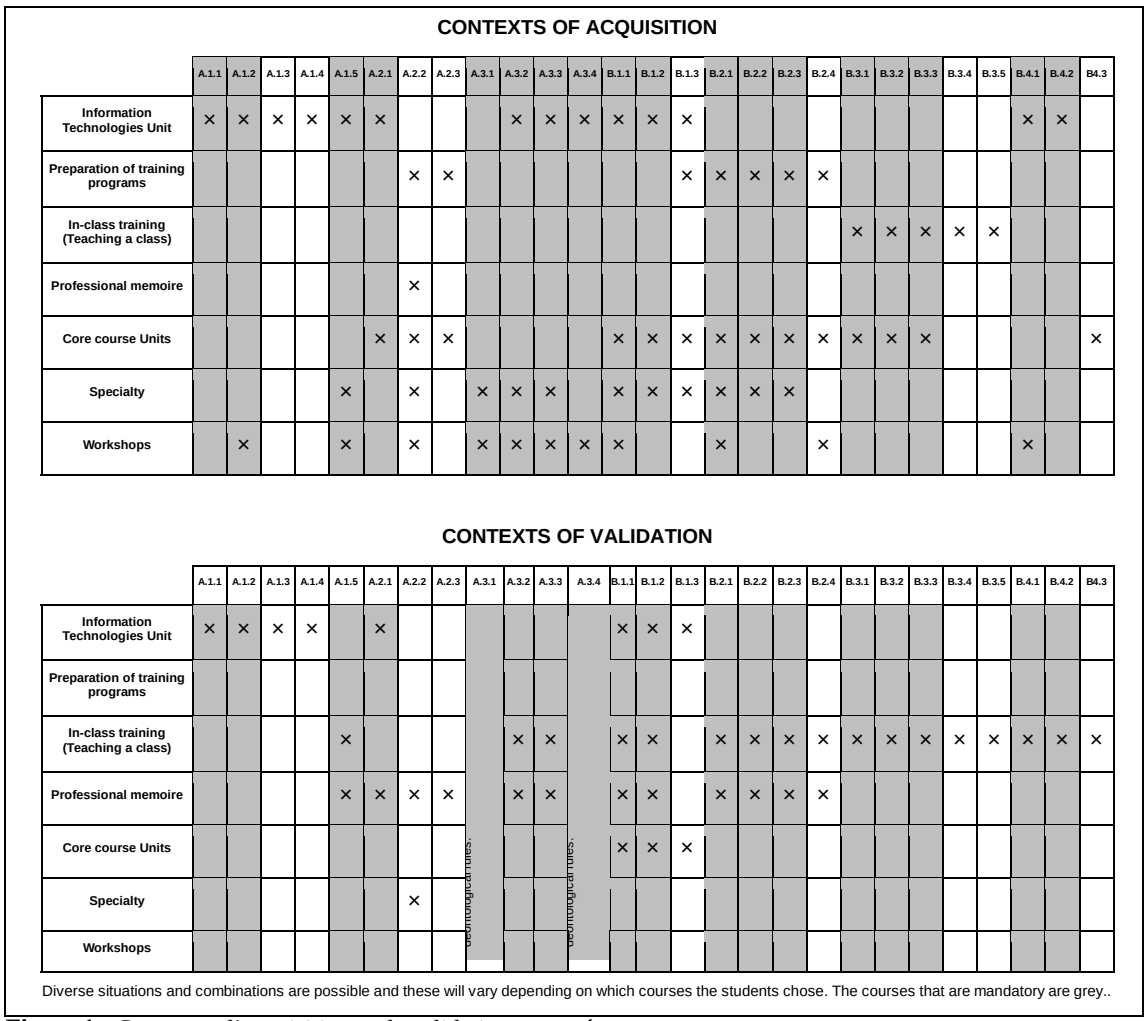

Figure 1 : Contextes d'acquisition et de validation proposés

Each teacher trainee had to introduce himself/herself, identify the skills that he or she had already obtained as well as ones that they needed to acquire and finally to describe a training program that they could organise; all of this had to be included in a numeric portfolio to which they had access. A reference teacher was there to help and guide them. With him, several ways of regrouping skills were investigated and criss-crossed with the different disciplinary contents, transversal or "adisciplinary". In this context, each teacher trainee was able to define the activities to do, the skills required and the means of evaluating them.

3. The e-portfolio

There are several types of e-portfolio (for presentations, for learning, for evaluation, etc.); each one has its own specific use which corresponds to a particular need. But the need for training is vast and it is not uncommon for several to be used simultaneously. This is exactly what we chose to do. The teacher trainee was given a presentation portfolio, a learning portfolio, and a skills validation portfolio.

3.1. Presentation portfolio

In this space the teacher trainee introduces himself, his training, what he knows, what he needs and wants and his goals. While the teacher trainee is introducing himself, he is also getting to know himself through the process of telling his story to others and hearing himself tell his story. The work of Baker (2000) shows the usefulness of asking learners to share their story, in other words, the usefulness of making and sharing a story.

3.2. Learning portfolio

The learning portfolio is incorporated into a larger digital environment; a long distance collaborative environment: Univ'-Rct (ct means collaborative training). Diverse tools are proposed to help with collaboration: an agenda, a space where one can submit documents (these can be commented on thanks to the forums that are attached), electronic mail, chats. Recording real time discussions is possible in the space called "causerie" (chatting). It enables one to receive feedback on exchanges that happen on specified dates. There are many "places" where one can "drop off" documents. These places have features (spacial metaphors) which are unique to the virtual environment. For example, the trainee has a file in his own office that only he/she can consult. The trainee can also "drop off" documents in the "virtual seminary" to which he or she has signed up, either in the orange basket (only accessible by the trainee and the teacher-tutor), or in a red file (accessible to everyone involved in the seminary), or in the teacher's room, etc. It is the trainee that decides who will have access to his or her work and who he or she wants to communicate with.

From a pedagogical point of view, these places are favourable to learning within the communities that the trainee chooses. By "community" we mean the whole of the trainees and /or teacher tutors that interact, that communicate and that exchange ideas either because of the training program or for personal reasons (there is also a community centre in this virtual environment). The exchanges that take place in these virtual environments contribute to the personal and professional development of the trainees.

The trainee is put in a context of collaborative learning, of mutual support, of sharing work methods and of observing in pairs. "In order to make the group progress, the learner must try the work methods that are proposed by the others or to propose methods himself ". The learner is confronted with other people's representations (preconceived ideas) and through this confrontation can make his own ideas evolve. Not only does he become active, but he is also plays an active part in the learning process[1)].

3.3. Validation and evaluation portfolio

Even if the hypothesis is theoretically debatable from a pedagogical point of view, it did not seem realistic to radically separate the functions of accompaniment and of evaluating. The "reference teacher" participates in the evaluation of the teacher trainee that he is accompanying, but he is not the only person to have a say in the evaluation. We decided that it was necessary, in order to guarantee an unbiased view, to assign the job of evaluating (at least partially) to pluri-disciplinary teams supporting the reference teacher.

Validation (a stage which is different from evaluation) occurs on line, at the request of the teacher trainee on an individual basis. The request is given to a reference teacher that is responsible for a group of approximately 30 teacher trainees. This request for validation is accompanied by a rough description of the evaluation context and the name of the teacher who can attest to the attainment of the required skill(s). It is the trainee that must take the initiative to do this. The trainee must also do

[1] Taken from the presentation of the platform Acolad which was renamed Univ'R-ct: http://acolad.u-strasbg.fr/

and “auto-evaluation”. The trainee decides freely if he has obtained the required skills and validates his skills when he considers it best. The evaluation is decided by the trainee whereas the validation of a skill is decided by the reference teacher. The reference teacher has all the necessary data to validate the skill(s) and completes the file of the trainee on line.

In order to satisfy these requirements and to facilitate the validation of 30,000 skills, without the need to meet all the teachers, we used a computer application which was integrated into the e-portfolio of the evaluation. This ensured flexibility (the evaluation was ongoing all day long), dependability and functionality: three indispensable criteria. In the following sections, we will describe how it works.

3.3.1 On the teacher trainee’s level

The teacher trainee accesses the menu through the numeric space of work (ENT) of the IUFM. The menu proposed an assessment which stated the following:

- The code and the title of each skill,
- The number of skills being acquired at the momen,
- The number of requested validations of skills,
- The number of validated skills,
- The number of skills that were not validated (refusal).

For each skill that was validated or refused, the date of the validation or the refusal appears in the validation space as well as the name of the teacher that was validating.

The menu enables the trainee to ask for the validation of one or of several skills simply by clicking on a button. In this case, an email is sent to the C2i reference teachers. They receive the references of the trainee, the code and title of the skill that the trainee wants validated and a link that allows direct access to validate the skill.

3.3.2. On the IUFM teacher’s level

The teacher can access an application menu by ENT. This menu shows all the requests for skills validation all the requests for trainee validations, and the C2i log of level 2 “teacher” (C2i2e) that the trainee chose, etc. The teacher can consult and validate the requests for validation or consult or validate a skill or a group of skills. Validation is given (or not) keeping in mind the comments of the teacher trainees (who justify the attainment of the skill and who put the request in context).

3.3.3. Consultation, validation or requests for validation by a user

In the first case, the teacher can get a list of all the trainees, a list of those who do not have a validation for the C2i2e, the names of the trainees that asked for a validation of one or several skills, etc. If the teacher decides to consult, validate or refuse the skills of a user, he clicks on his name and checks off the skills that he wishes to refuse or validate. An email is then sent to the trainee. The information bubble gives the title of each skill and the colour of each of them is indicated to the teacher whether this skill is still required, validated or refused. Finally, the teacher can send a request for validation of skills to another teacher. In this case, he chooses the teacher and makes the request.

3.3.4. Consultation, validation or request for validation for a group of skills

In the second case, where the teacher decides to consult or validate a request for validation of a group of skills, he must check the boxes of the skills to be considered (Cf. Figure 5).

Three lists appear after clicking on the button “process” (Cf. Figure 6). First, a list of the users that have requested a validation of required skills. Next to it, the list of users having at least one skill not validated among the required skills. Finally, in the third column there is a list made up of all the users that validated the group of required skills. The teacher can then validate the skills by selecting the users and clicking on the “validate” button.

Once again, the teacher can decide to send a trainee’s request for validation of skills to another teacher. He must then select the users, click on the button “validate” to choose the teacher and click on the button “request”.

4. The first results of the experiment

In June 2007, all the teacher trainees of the academy of Strasbourg were asked to fill out a survey in order to find out how they envisioned the experiment (pilot program) and how useful they found it was to use the numerical portfolio in this context. In order to avoid receiving *only* the results of the most motivated trainees, the survey was made obligatory. Three training sites were involved; Strasbourg (8 groups), Colmar (6 groups) and Guebwiller (2 groups). 452 teacher trainees answered the survey; which roughly corresponds to the number of teacher trainees in the academy. Out of 452 surveys answered, 424 could be processed correctly. Certain answers were either incoherent or "jokes" and therefore could not be counted. In order to make the teacher trainees feel at ease, we did *not* ask for their names. Only their group and their training sites were asked for.

4.1. The contexts conducive to the acquisition and validation of skills

Among the contexts proposed, those that encountered the most enthusiasm were the following (highest to lowest):

Concerning the acquisition contexts	Concerning the validation contexts
1. Information technologies in general	1. Training in information technologies in general
2. Activities linked to professional training	2. Work done on the platform for collaborative work
3. Activities concerning the professional thesis	3. Activities linked to the professional thesis
4. Other transversal courses (besides information technologies)	4. Training in specialized subjects
5. Optional workshops	5. Activities linked to professional training
6. Activities linked to the platform for collaborative work	6. Other transversal courses besides information technologies
7. Training in specialized subjects	7. Optional workshops

Differentiating contexts seems to pay off since the contexts which were chosen for validation were not necessarily the same as those chosen to validate the acquisition of skills. Individualized learning schemes which are freely chosen, progressively replace the more traditional ones which conventionally contain an evaluation of the course itself. Furthermore, comparing the contexts which were initially proposed (Figure 1), this ranking shows their motivation to be responsible for their own learning scheme by breaking free of recommendations.

4.2. The proposed training methods : a surprise

To our great surprise, 87% of the teacher trainees would have preferred for us to organize activities (or tasks) enabling them to validate *de facto* the groups of skills rather than let them choose their own training scheme and evaluations. The question was formulated exactly in these terms. It goes without saying that the results were not what we had expected or hoped. When we compared our pre-conceived ideas about what a professional training program should be (i.e. one which trains and makes one reflect) to those of the teacher trainees, the difference was enormous. Perhaps the results show how difficult it is for the teacher trainees to break away from the traditional "tele-guided" training schemes which are firmly established in their culture (a sort of resistance to change). However, we can also suppose that this group is a manifestation of a cultural phenomenon linked to a consumer economy of "everything now"– a sort of new appetite for "ready-to-use" training schemes where personal investment and choice are minimal and where positive results are practically guaranteed. In other words (in our case), teacher trainees are looking for a training scheme which would enable them to acquire skills as rapidly as possible in order to be certified (ultimate desire). Even if the metaphor may seem unlikely, a professional training scheme would be like an object for consumption. It should work quickly and have no snags: "You must not answer to needs but to frustrations", wrote Chetochine (2005). It is a controversial hypothesis which is debatable, but we will not exclude it, especially since the results which follow seem to confirm it.

4.3. The e-portfolio

4.3.1. Learning portfolio (personal and shared space)

25% of the teacher trainees claimed that the learning portfolio helped them to gain knowledge. The others claimed that they did not see the point in using it and they mentioned a lack of time and no immediate need to use it. They said they could use other tools to work – more precisely tools that they were familiar with (FTP, files attached to e-mails, etc.). When teacher trainees were questioned about the functions in the portfolio that they nevertheless found useful, they acknowledged its usefulness in the following order (most useful to least useful):

- To show the "validators" the work that needs to be validated,
- To use resources that are present in the documentation space,
- To communicate at a distance (asynchronous),
- To manage without the physical presence of a teacher,
- To work with others and do tasks collaboratively,
- To manage one's time and activities in an autonomous manner,
- To communicate at a distance (synchronous).

4.3.2. Evaluation portfolio

The results obtained concerning the utility of the validation portfolio seem to confirm our last hypothesis. Indeed, 89.9% of the teacher trainees claimed the evaluation portfolio was a very useful and interesting tool! This result is diametrically opposed to the preceding one (25% for the learning portfolio). The reasons mentioned are the following (from the most useful to the least useful):

- To quickly and easily send validation requests to one's reference teacher
- To consult one's log (progression of skills acquired)
- To facilitate contact between the evaluator and the "validator"
- To communicate with one's reference teacher

The reactivity which is unique to this application seems to respond perfectly to the culture of the teacher trainees of that age (23-25 years old): speed, efficiency, immediateness, feasibility, no paper.

4.3.3. Validation of acquired experience (VAE)

24% of the teacher trainees said that they had already acquired at least one of the skills of the C2i2e before taking a IUFM course. Among the 24%, the number of skills declared as acquired during this experiment were not more than 12 (of the 27 required for the training scheme) with on average, 7 skills declared as acquired and a standard deviation of 2. But what is interesting is that among the skills that were declared as acquired previously, 88% of these skills could be validated at the IUFM without any extra training. This result is rather encouraging and salutary. Indeed, the fact that we distinguish acquisition contexts from the validation of skills seems to have been favourable for the validation of experience acquired. As for the small percentage of skills acquired during the training scheme, this result is not alarming in itself. In our opinion, it simply shows the high level of expectations of the training scheme and it shows the difficulty that the IUFM and the government have on clarifying the exact meaning of these requirements. Is it a requirement that is for work or for training? It would be very useful if the IUFM and the state could reach an agreement on this point.

5. Conclusion

These results, which come from an experiment conducted among teacher trainees, do not allow us to draw any precise conclusions about these new training schemes. Let us just say that beyond the different findings that we expressed in the preceding sections, we notice that the approach to this professional and "instrumentalized" training scheme offers interesting perspectives which are promising in several respects. Nevertheless, certain results are an invitation to remain attentive to the evolution of the culture of this age group (22 – 25years old). This age group is now culturally adapted to using technologies, and this age group will continue to provide the majority of the candidates for

future training schemes. Our objectives, however, are to use these technologies for more "evolved" uses; i.e. using technology to encourage reflective practices.

Conceiving a professional training scheme based on this paradigm which aims to train an autonomous and reflective practitioner, is a noble but complex task. The "scenarisation" (setting up) of a personal training scheme and the "instrumentalization" (using tools) of training is a difficult endeavour because firstly; the mediation instruments are varied (didactic, technological, pedagogical) and also because the pedagogical and institutional objectives are ambitious (professional training, training to learn how to learn--life-long-learning, *reflective training concerning one's relationship to knowledge rather than to only knowledge itself, a view of the action of the critical position*, VAE, etc.) and finally because there is so much resistance.

The fact that one considers it a "given" that such training schemes are useful in an economy of knowledge shows an honourable clear-sightedness, however this can only be developed if the goals on a higher level, that is to say those that aim at training future teachers capable of reflecting and being autonomous, are present in everyone's mind and understood by all..

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