Title

Effects of a blended learning system for university teachers training

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Abstract

In this contribution we evaluate the learning effects of a blended learning environment designed according to the principles described by Entwistle (2003). Having briefly described the context (teacher training in higher education), the teaching and learning environment (objectives, resources and actors), we will analyze learning outcomes and processes taking into account both the students' experiences of learning and the teachers' evaluation of learning outcomes. Do the students adopt a deep approach? Do they develop teaching professional competencies? Into which conditions are these effects observed?

Extended summary

Research about teaching and learning at university level (Entwistle 2003) has supported the development of a conceptual framework that describes some of the variables influencing the outcomes of learning. When all assembled, these variables conduct to the increase in deep approaches of learning and decrease in surface approaches (Saljö 1979; Marton 1993), improvement of motivation and study organisation.

Besides the variables characterising the students (presage) and their interactions (processes) with the teaching and learning environment (Biggs 2003), the design and implementation of a training environment play an important role among these influences.

Thus, Entwistle and his colleagues have provided a list of teaching and learning activities and methods believed to promote active deep learning. They are similar to those allowed by blended learning training systems (Valdès 1996 ; Charlier, Deschryver & Peraya 2004) in the context of professional training. To offer more flexibility and affordances (Boud 2004) to the learners, these training systems use the techniques and methods of both distance and presence learning. It gives the students the opportunity to negotiate their own learning path, the variety of spaces and times to learn, the variety and quality of learning resources, the access to resources coming from the professional or social environment. It places the emphasis on an explicit learning environment, on the engagement of learners into meaningful tasks, on the importance of involving learners in active practice and on the regulation of the environment.

Such a training system presents also the main characteristics of an effective teacher training system. It allows and develops reflection and practice, collaboration with peers, practical experiment, etc. (Huberman 1995).

Research questions and context

In this contribution we evaluate the learning effects of a blended learning environment designed according to the principles described by Entwistle (2003). Having briefly described the context (teacher training in higher education), the teaching and learning environment (objectives, resources and actors), we will analyze learning outcomes and processes taking into account both the students' experiences of learning and the teachers' evaluation of learning outcomes. Do the students adopt a deep approach? Do they develop teaching professional competencies? Into which conditions are these effects observed?

Methodological aspects

Three main sources of data are used. Firstly, there are the portfolios of the seven students, who finished their diploma in 2004. They describe here their learning experience during the training and they prove their teaching competencies by presenting and analysing the realised activities. Secondly, there is the description of the training and of its modules. Thirdly, there is a questionnaire addressed to the students upon their acquired competencies and the possible transfer into their teaching activities.

We use discourse categorial analysis (L'Ecuyer 1990) to make a qualitative study of these data. For the evaluation of the approach to learning, we develop an inductive process. For the evaluation of learning, we developed a more deductive analysis using the referential of competencies that are aimed with the training Diploma (SEDA 2004).

Results and discussion

A first result can be asserted. All the students adopt a deep learning approach. They focus on understanding and on relations with their own practices and projects.

Many conditions allow such an adoption. The choice made by the students in the training offer appears to be coherent with the training project that the students express into their portfolios. Here the individual negotiation of every student with the training organizer, before the training starts, is very useful. Ad hoc activities, like the communities of practise, reinforce this adaptation of the training to individuals. The bridging of the different modules is a second condition. Many learning objectives are theoretically introduced into one module and applied into another one. A third reason is the anchoring of new knowledge on prior teaching experience. A fourth reason is the collaborative learning activities that grew up among the students due to their diverse prior professional experiences and the various training activities (chat sessions, development of pedagogical scenarios, etc.).

The second main result is that the students developed their teaching competencies. They assert this very positively many times into their portfolios when telling their satisfaction about the training in general and also about their learning outcomes for a particular module or activity. All the feedbacks made by the different teachers on the results of the different activities confirm this positive effect. This is true for the competencies that are the aim of the students' initial training project and also for all the competencies of the different modules of the training. One of the conditions allowing this is that the competencies to be developed are "dispersed" into the different modules. This way, they are placed on the individual path of every student even if they are not part of her initial project. This helps students to enlarge their competencies and in particular on unknown topics.

Conclusions and perspectives
This research shows the effectiveness of certain choices that are characteristic of the hybrid environments for the training of the teachers. It allows the establishment of precise relations between a whole of conditions of formation, the individual characteristics of the teachers and some effects on the learning, both at the level of the learning approach and of the developed teaching competencies. Progression of the research undertaken in university pedagogy (Phipps & Merisotis 1999 ; Pintrich 2003 ; Charlier, Nizet & Van Dam to be published), in teacher training (Day 1999 ; Hargreaves & Fullan 1992 ; Huberman 1993 & 1995) and in technologies for training (McDougall 2001 ; Hong 2002 ; Platteaux 2004) allows to carry out a scientific research in context.

In addition to the presentation of an evaluation of formation, this contribution thus makes it possible to specify a rigorous methodological framework for similar work: framework of reference, assumptions, list of indicators, etc.

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