

# Development and assessment of the student's skills by means of the use of virtual learning files (VLFs)

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## Abstract

This work presents the implementation of a teaching innovation undertaken at the UAB by a group of five teachers from five different courses. The experience consists of the implementation of Virtual Learning Files (VLFs) in order to improve the teaching, learning and assessment of general and specific skills in the context of the European Space for Higher Education, while including innovative non-classroom support methodologies based on Information and Communication Technologies. It includes the objectives, the theoretical framework leading to the innovation, the methodology used and an assessment of the results from the point of view of the teachers and students involved in the project, which considers the advantages and disadvantages of the experience.

## General area of interest of this innovation

This innovative experience is of interest to university students and teaching staff in various knowledge areas: due to convergence with the European Higher Education Area, inclusion of the ICTs, student-focused learning, guided teaching and continuous assessment.

## 1. Objectives

The purpose of this project is to improve teaching, learning and assessment processes of the students' general and specific skills in the context of the European Space for Higher Education Area by using virtual learning files.

The following specific objectives were proposed:

1. To improve the students' performance and academic training in order to promote the development and assessment of transversal and specific skills that can be transferred to professional practice.
2. To introduce innovative teaching methodologies focused on the student's teaching and learning processes in the context of the European Higher Education Area.
3. To improve presence learning with the inclusion of distance support initiatives using new information and communication technologies.
4. To provide the university community with a guide to the implementation of the learning files in various subjects and knowledge areas.

## 2. Description of the work

The idea for this project arose in a work session organised as part of the Teaching Training Plan of the Group for Teaching Innovation in Higher Education (IDES) at the Universitat Autònoma de Barcelona (UAB) in 2006, at which a number of teachers from many highly varied disciplines and contexts (Computer Science, Veterinary Science, Social Sciences Teaching and English Philology) decided to undertake a project to improve the development and assessment of student's skills in the context of the European Higher Education Area (EHEA), using virtual learning files (VLFs) in various knowledge areas and using Information and Communication Technologies (ICTs) to improve the quality of teaching.

Both teachers and students are experiencing a process of profound change in the education system, which focuses on students and their learning (learning to learn). In this new scenario, the concepts of teaching and learning, their relationship with the skills to be developed and continuous assessment raise questions that encourage teamwork and interdisciplinary reflection by those involved, who are concerned to improve the quality of teaching.

It is this interest in the students' learning that has led them to share the experience in order to encourage teaching innovation and to facilitate the development of transversal and specific skills among students, in both presence and distance learning contexts.

Virtuality also encourages the gathering of evidence by teaching staff, constant feedback for improved management of teaching and continuous assessment of students throughout the teaching-learning process.

### 3. Methodology

#### 3.1. Brief framework of reference

The learning file is one of many methods that can be used in higher education to assess students' learning, as it can be easily adapted to the needs of the context and situations in question. We feel that it is a method that is highly focused on the students' learning. It is a useful tool that enables the vast amount of evidence that illustrates the efforts and progress made by a student during the training process to be gathered.

Recently, the most specialised literature on learning files as an assessment method (Barberà, 2005; Colén, Giné and Imbermón, 2006; Gimeno, 2004; Klenowski, 2004; Zubizarreta, 2004; et al.) considers some of the objectives that facilitate its implementation in the teaching-learning process in higher education.

The Objectives of the Learning File in Higher Education are:

1. To observe the progress and process followed during learning, by both the teacher and the student.
2. To involve the student in his/her own assessment, as the student knows the objectives and assessment criteria and maintains a constant dialogue with the teacher about his/her own learning.
3. To demonstrate the level of competence and degree of in-depth learning and to validate teaching methods and techniques to facilitate and promote them.

To provide the teacher with more diversified information on learning and assessment and from different perspectives. By using learning files, subjects can become a path in which there is a permanent dialogue between group and individual work, and between reading and reflection. The course structure is that of a network in which the various activities on offer are the points of anchorage for the content structuring the programme. During the semester, the students construct the links between the various contents and consider them in depth, in order to have an overall view of the course by the end, and an overview of each of the contents and the relationships established between them. That is why assessment becomes an further factor in the teaching-learning process. It is considered as a process that gives information on the learning acquired by the student and helps to certify that the objectives have been achieved. Assessment by learning files becomes a tool that helps to analyse both the process and progress and the end result of learning.

#### 3.2. Actions, means and resources used for the Teaching Innovation

Three instruments were designed and used for the introduction of the higher education virtual learning files (VLFs). Each of these had a different objective and therefore was used at a different point in the Teaching Innovation. The first instrument designed was the «initial questionnaire». This questionnaire consisted of 12 questions, organised in two blocs. Only students who had used a learning file previously

had to answer the first bloc. Those who had not used a file before had to answer the second bloc. The objectives of this questionnaire were basically:

1. To discover how many students had used a Higher Education Learning File (HELP), and how many had not.
2. To find out whether this file had been supported by the ICTs (virtual file — VLFs).
3. To find out how much weight the various HELP-VLFs had had in the final assessment.
4. To assess the experience of having used HELP-VLFs (positive/negative, advantages/disadvantages).

The aim of this questionnaire was to enable students to draw a general map of their knowledge and use of the learning file and of how they subsequently valued the experience.

The second instrument was the construction of a learning file index for each subject and the design of the Virtual Campus space. Decisions were taken depending on the theoretical framework briefly described above, i.e. the working dynamic and contributions from other members of the GI-HELP group and joint considerations with the UAB's Autonomous Interactive Teacher's Office (AITO) on improvement of the UAB's Virtual Campus.

The third and last instrument used in this teaching innovation was an adaptation of the Student Experience of Education Questionnaire (SEEQ). The blocs in which this questionnaire is organised were retained, and some new ones were added, which were linked to virtuality and the use of assessment systems other than final examinations, such as the learning file.

These three instruments, produced jointly by all the teachers involved in the innovation and assessed by experts in the field, and the collection of the process and students' progress, their productions and assessments, should enable:

1. A review and assessment of the design and construction of VLFs.
2. Proposals to be made for improvement of each of the subjects where the innovation has been carried out.
3. Encouragement of the student as the key player in the learning process based on reflection, self-assessment and metacognition.

The range of initiatives in this project has been an emerging, gradual and flexible process, which is the result of interaction between constructed theory and observed and analysed practice. The ongoing dialogue between the two guided the design of the working plan, the review of the teaching plans in each of the subjects involved, the production of the criteria for the construction of the file indexes, the implementation of the innovation in classrooms, and the constant and permanent reconstruction of the process.

## 4. Results

The Teaching Innovation was implemented in the following subjects:

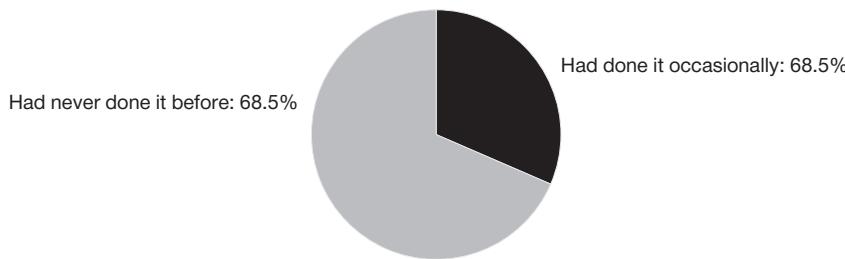
- Teaching Practice II. Teaching Diploma (Primary Education).
- Evolutionary and Educational Psychology. Teaching Diploma (Special Education).
- English language. Teaching Degree Course.
- Equine Clinical Training Veterinary Science Degree Course.
- Software Engineering II. Computer Engineering.
- The platform which supported the project was the UAB Virtual Campus.

### 4.1. The students

#### 4.1.1. Starting point

The initial questionnaire was answered by a total of 124 students, 39 of whom (31.5 %) had used HELF before and 85 (68.5 %) had never done so. The majority (85 %) of those that had used the files thought that HELF helped with learning and rated them positively. The main criticism was that they require a great deal of work and are difficult for use in group work. Only 35 % of the students who had never used HELF had never heard of them before and in general, they described them as a collection of work during the course.

Graph 1. Experience of students in HELF use



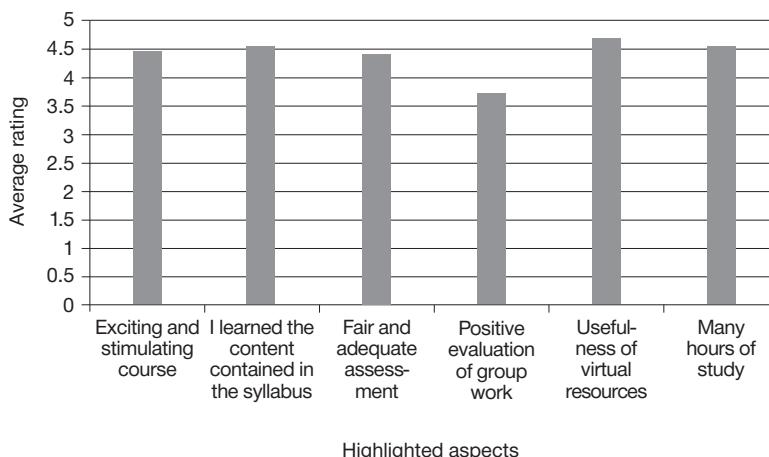
The starting point was therefore a group of students with little experience with HELF and a very limited concept of learning files.

#### 4.1.2. General contributions to students

The final questionnaire was completed by 158 students. As regards learning (Graph 2), most students felt that the course had been intellectually engaging and stimulating (average satisfaction 3.9/5) and they had learnt and understood the contents of the subjects (average satisfaction 4.1/5). They considered the assessment methods to be fair and appropriate (average satisfaction 3.8/5). As regards virtuality, group work

and use of the virtual campus, the majority of students expressed high levels of satisfaction with all the issues raised (3.71-4.36/5). Finally, the majority of students felt that they had spent more time working on that specific subject than on others (average satisfaction 4.1/5).

Graph 2. Student assessment of the experience



In overall terms, the general level of satisfaction among students with the teaching innovation used is high, despite the fact that they require a significant amount of work.

#### 4.1.3. The students' voices

As well as quantitative assessment using the questionnaires, the students' qualitative assessment of what learning by files entails and its advantages and disadvantages was also obtained after the experience. In general, the students displayed a very high level of knowledge of the concept of HELF, with comments on the reflection involved in learning with files and how this exercise facilitates their autonomy and helps them to internalise knowledge and develop their own criteria. They also felt that the innovation enabled them to organise their tasks better and encouraged them to participate in the course, improved their motivation and dialogue with teaching staff. The only disadvantage mentioned by the students was that the HELF required more work than other learning systems.

#### 4.1.4. The teaching staff

The level of satisfaction among the teaching staff involved in this teaching innovation was very high. In general, the VLFs promoted autonomous learning and metacog-

nition among students, enabled assessment of the various types of skills with a single instrument, encouraged participation and involvement by the students and reciprocal feedback, ensured continuous assessment and facilitated the students' awareness of what they learn and how they learn. The perception of the teacher as a member of the help and support group rather than an authority figure also increases students' commitment and helps them to become the centre of the learning process. Virtuality made the exchange of information more fluid and functional, and facilitated the organisation of and access to materials. Being able to access the files at any time and from anywhere is a clear advantage for both the students and the teaching staff.

The main disadvantages were the greater amount of time than that required for traditional teaching approaches and some technical problems arising from the use of the VC as a platform for the VLFs.

The results of the two questionnaires, direct observation, the students' files and the joint reflections of the group enabled the teaching staff to adapt the production of the files to conditions in each group of students and to consider improvements in the subjects for the future.

The integration of the teaching staff involved in this project in the GI-HELP group as a platform for exchanging experiences and seeking information was very enriching and facilitated the attainment of the fourth objective, which was the publication of a guide to the HELP (Blanch et. al., in press).

## 5. Conclusions

This publication is complemented with the consolidation of an interdisciplinary working group in order to share innovative teaching experiences linked to learning files and to promote co-ordination among teaching staff (GI-HELP), the «Student File» workshop that we provide as part of the IDEAS-UAB training activities, and participation in the Themed Network «*Electronic Portfolios*» (*e-portfolios*) financed by the Ministry of Education and Science, the R+D+I National Plan [European Regional Development Funds (ERDF) and the General State Budget (PGE)] (SEJ2006-27543-E/EDUC and SEJ2007-30284-E/EDUC) in which 14 Spanish universities participate.

1. The assessment by the students and the teaching staff involved in this experience confirms that the objectives set were met, and we therefore feel that the HELP—and the VLFs in particular—are useful tools for improving students' performance and training.
2. Among teachers, the VLFs involved a reformulation of teaching methodology which entailed a great deal of reflection on educational philosophy, and led to a substantial improvement in teaching practice.
3. The increase in the time spent by both teaching staff and students due to the VLFs means that it is important to focus attention on designing the indexes and main-

taining fluid communication with teachers of other subjects in order to avoid the advantages of the experience being diluted by an excessive workload

4. The UAB Virtual Campus can be used to work with VLFs, despite having some technical limitations that must be resolved in order to for it to be an optimum platform.
5. The publication produced by the GI-HELP group of the IDES provides access to a guide that facilitates the implementation of this tool by the entire university community.

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