University Formation and Education: The Spanish University System in theEuropean Frame of Higher Education.

Raquel GILAR *

Abstract

The reform of Spanish University System occurs for allow that the universities to board the needs derived from the new kinds of knowledge generation and transmission. The university's objective is the formation of professionals capable of taking, analysing and elaborating the big quantity of information that exists in our society, and capable of transforming this information in knowledge. The changes that involve this reform, affects the methodology of the University Formation too. To do this, it is necessary to the curricula and to include in it new methodologies. New curricula must include new pedagogical and didactic approaches that provide the acquisition of practice knowledge, competences and skills for communicating, critical analysis, independent reflection and cooperative work. Based on that, we present the work that we are developing in the University of Alicante through *Networks of Research in the European Frame of Higher Education Program*. This Network Program tries to encourage the work of professors networks on implementing both teaching-learning strategies and evaluation models according to European Frame of Higher Education. In addition to this general frame of work, we present the research that we are carrying out in the Faculty of Education on Curricula Design and Teaching Methods, according to the European Frame of Higher Education.

Key Words: Educational Reform; Reformulating the Curricula; New Pedagogical and Didactic Approaches; Teaching-learning Strategies; Evaluation Models.

Our current society requires professionals adapted to changes, who are able to constantly update their knowledge, and are able to adapt themselves to the demands of our changing society in both a dynamic and effective way.

As a response to this situation, a set of educational perspectives aimed to improve the quality of education has been developed, which shall eventually lead to an improvement of learning results. It is necessary to design and implement training methods different from those applied previously. Homogenous training approaches should be abandoned in order to obtain a type of education which focuses on the particular features of each discipline, on the students learning those disciplines, and of course, on the demands of society for each knowledge area.

The reform of the Spanish University System is therefore proposed on the basis of this briefly described situation, "in order to let Universities deal with the challenges derived from innovation in the form of generation and transmission of knowledge, in the

framework of the information and knowledge society" (Act 6/2001, 21st December, of Universities, L. O. U. Act).

Three challenges should be particularly highlighted from those arising from the new Spanish University System, since they are especially relevant in order to attain the objective of training professionals prepared to obtain knowledge throughout their lives, which shall let them acquire, analyse and elaborate the vast amount of information available in our current society, by transforming it into knowledge. Such challenges are as follows: promoting research, which is essential for cultural, political, economical and social development; increasing teachers and students' mobility both inside the Spanish system and inside the European and even international systems, which shall greatly lead to the enrichment of training; and in the third place, the development of programs of evaluation and improvement of quality which guarantee such quality in all the components of our University System, both in education and research, in teaching activities, in management and services.

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* Ph.D. University of Alicante.Spain

As for the structure of the degrees themselves, the proposal includes three-cycle degrees. A first undergraduate cycle is where the training objectives shall show a mainly professional orientation according to the national and European professional profile. In the first cycle the aim is that the student acquires both general basic knowledge and specific knowledge and abilities which let them enter the work market.

A second postgraduate cycle is aimed to the academic and professional specialization and to promote the initiation of research activities.

The third and last cycle, the Ph D, focuses on the training in research techniques and the application of the acquired knowledge to the preparation and presentation of a Doctoral Thesis, which entitles students to obtain the Ph D qualification.

Regarding the way of implementing change in the Teaching-Learning methodology involved in the Reform, in the University of Alicante is being developing *Networks of Research in the European Frame of Higher Education Program*. This Network Program tries to encourage the work of professors' networks on implementing both teaching-learning strategies and evaluation models according to European Frame of Higher Education.

The program tries to promote a culture of research based on collaboration, this being one essential component to improve the curricular situation (Martinez and Sauleda, 2006).

Inside this Network Program, we are carrying on research in the Faculty of Education on Curricula Design and Teaching Methods according to the European Frame of Higher Education.

Our proposal has the purpose of researching design and methodologies according to the directions of the European Frame of the Higher Education, and it is centred in the design of the didactic guides on different subjects pertaining to the Teacher Training Curriculum, in agreement with the process of convergence in the EEES.

Our work is based on diverse basic documents like the joint declarations of Sorbonne (1998), Bologna (1999), the Prague (2001), Berlin (2003) and Bergen (2005), White The Book entitled Degree in Teaching, Real Decree 1125/2003, of 5 of September of the Ministry of Education, Science and Sport, of Spain settles down the European system of credits and Lists of credits of university title of Degree of Teacher in Spain.

We left from the elaboration of the professional profile (general objectives and competences) that students must have our when finalizing their formation as future professors. The proposed professional profile is the following one:

GENERAL OBJECTIVES:

1. To be able to exert the educational and tutorial function as an active agent of socialization and alphabetization in socio-cultural integration and curricular experimentation.
2. To be expert in didactic competences, in the construction of models of projection, innovation and control of formative atmospheres.
3. To develop the capability of management, organization and planning of information, as well as of the educative centre and the classroom.
4. Ability to use the knowledge, the information, technology and language.
5. To develop interest by a permanent formation in the scientific, didactic and professional update.

COMPETENCES:

1. To understand the function, possibilities and limits of education in the present society and the fundamental competences that affect to the educative centres and its professionals.
2. To dominate the matters that they have to teach, the processes of knowledge construction and the corresponding didactic, as well as the interdisciplinary relation among them.
3. Solid scientific-cultural and technological formation.
4. To approach learning situations with effectiveness in multicultural and multilingual contexts.
5. To design, to plan and to evaluate educational processes in contexts of diversity that ensure the equality.

6. Capacity to promote independent and cooperative learning in the students, facilitating learning from a integrating perspective of the different dimensions: cognitive, emotional, psychomotor.
7. Capacity to organize education, within the framework of the epistemological paradigms of the areas, using integrated knowledge.
8. Capacity to prepare, to select or to construct didactic materials and to use them in the different disciplines.
9. To know and to apply the technologies of the information and the communication in the classroom.
10. To know models of quality management and their application in the educative centres to promote the quality of the contexts in which the educative process is developed, so that the well-being of the students is guaranteed.
11. Capacity to reflect on the classroom practices to improve the educational task and to use the evaluation like regulating and promotional element of the improvement of education, the learning and its own formation.
12. 12. To perform the tutorial functions and orientation of the students and their families.
13. To be able to participate in projects of investigation related to education and learning, introducing innovation directed to the improvement of the educative quality.
14. Capacity to relate, communication and leadership, as well as of emotional balance in the varied circumstances of professional activity.
15. To have habits and skills for the independent and cooperative learning for the improvement of professional activity.
16. To promote the participated construction of rules of democratic coexistence with the pupils and to contribute to the practical resolution of conflicts, as well as to stimulate and to value the effort and the personal discipline in the students.
17. To collaborate with the different sectors of the educative community and the social surroundings.
18. To have a realistic image of himself or herself, to assume responsibilities, to make decisions and to relativize the possible frustrations.
19. To assume the educative function and to foment the democratic education for an active citizenship, maintaining a critical and independent relation respect to knowledge, the social values and institutions, and valuing the individual and collective responsibility in the attainment of a sustainable future.
20. Commitment to harnessing the academic yield of the students and its scholastic progress, within the framework of an integral education facilitating the formation of habits, the acceptance of norms and the respect, and promoting the autonomy and the singularity of each student like factors of education of the emotions, the feelings and the values.
21. 23. To assume that the educational function requires update and continuous formation and it must be perfected and adapted to the scientific, pedagogical and social changes throughout life.

From this professional profile, we developed the didactic guides for each one of the subjects of first course of the program of teacher training. In each one of the didactic guides we indicate the objectives and competences to obtain, the requirements that we consider minimums to attend the subject, the content blocks, the proposed educational methodology for the attainment of your objective, the plan of work of the student, the bibliography and materials with which it can work the student, the used criteria of evaluation, as well as instruments and the evaluated competitions, and the proposal of accomplishment of the evaluation of the educational process:

1. **Objectives and Competences**. It can be conceptual, procedural and attitudinal.
2. **Pre-requirements.** It makes reference to the minimum requirements to attend the subject.
3. **Contents**. Blocks of contents of the subjects.

4. **Educational methodology.** The methods proposed for the attainment of the objectives are indicated.

We propose the application of two methodologies:
1. Face to face classes, where different issues shall be explained by the teacher, and discussions shall be developed to facilitate feedback among students.
2. Other kind of classes, which would be mainly devoted to the collection of materials by students to elaborate the contents, the development of practical activities, and to the self-evaluation of the learning process. They should also be used for *e-tutorials*, which allow students to consult the professor via e-mail.

Table 1. Outline of the proposed methodology.

METHODOLOGY				
Face to face classes			Other classes	
Theoretical Classes	Practical Classes	Tutorials	On-line tasks	e-tutorials

5. **Plan of work of the student.** It gathers, for example, the number of hours dedicated to actual education, nonactual education, the practices, the tutorial, etc.
6. **Bibliography and materials**. Where the basic bibliography, complementary bibliography and other resources are specified.
7. **Evaluation of learning**. With the evaluated competences, the used instruments and the evaluation criteria.
8. **Evaluation of educational process**. With the valuation of the student and the valuation of the teaching staff.

An essential aspect of the whole process, which shall not be disregarded, is the Evaluation. We propose three kinds of evaluation:
1. The so-called Evaluation of the subject, where we check the knowledge acquired by students through a tool (written test) which let us know if students are able to apply the acquired knowledge to specific situations of teaching-learning.
2. The continuous Evaluation, which takes place throughout the whole development of the subject. The objective of such evaluation is to guide students in attaining objectives and acquiring competences.
3. The Self-evaluation, developed through questions of the same format as that of the final evaluation test of the subject, so that students can gradually check their progress and problems.

One of the research approaches which is being developed in our Faculty of Education is referred to the features which methodologies used in University Education should present. One of the vital aspects when selecting this methodology is the instructional context and the learning environment considered necessary.

The results of our research show that instructional contexts supporting rich learning environments facilitate knowledge acquisition and competence development (Castejon & Gilar, 2006; Castejon Gilar & Perez, 2006; Gilar, 2003; Gilar, Martinez & Castejon, 2006). A rich learning environment is that in which different instructional strategies are combined, such as explanations by professors, independent learning, cooperative learning and practical activities on the subject.

The design of such rich learning environments is based both on the socio-cultural theory of situated learning (learning which takes place in a context and in a given situation, with a sense and meaning for students), and on the acquired knowledge of the acquisition of expert competence.

Our proposal is based on the application of computerized evaluation together with problem-based learning, which acts as a basis to set out a project proposal aimed to promote the development of abilities to solve complex problems through a design based on hypermedia. In this hypermedia-based design simulation is used as a way to create an environment of situated learning, oriented to the development of problem solving abilities in a particular domain by applying real learning tasks, which are significant and relevant in the real world. In problem-based learning, students are encouraged to take active part in the learning process and to construct their own knowledge through direct experience and interaction with the situation.

Our goal is to create a combined design of teaching-learning (with face to face and other type of classes), in which students can deal with real learning tasks. For this purpose we suggest the use of the Internet, which greatly suits the work we propose, since it permits students to collect, analyse, synthesise, understand, and transform information, consider, assess, create, publish, share new information, etc. and apply the knowledge acquired. Our objective shall be the creation of an environment where they can have access to resources, practical activities, etc… related to the domain of study content, combined with face to face classes.

We should prepare students to face and solve the demands of life and of the work market. For this purpose university education must gradually evolve and introduce innovations which can be very useful to improve education and learning.

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