

Students' Guide as a tool for adapting to European Higher Education Area (EHEA) challenges

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Abstract - Students' guide has become a basic tool of the European Credits Transfer System to achieve the objectives fixed by memberships of European Higher Education Area (EHEA) joining the Bologna declaration. The objective of this paper is to present the design of the model of the Students' Guide which is proposed by the Polytechnic University of Valencia (Spain), and the philosophy underlying it. A common format has been established to facilitate understanding for students as well as to allow comparison and coordination between different subjects. For this reason this paper shows a comparison between students' guides for two subjects of the first course of Technical Architect degree, Fundamentals of Physics and Graphic Expression. Both documents have been carried out under the Project for Adaptation and European Convergence Program in which the High Technical School of Building Management is involved. The basis for this Project has been the professional competences, which have been defined through the Spanish "White Book" of the degree. One of the most important conclusions reached when teachers of different knowledge areas have been working together is that in these guides, methodological, evaluation and conversion to the European Credits Transfer System differences have been clearly shown.

Index Terms - Competences, ECTS, Students' Guide.

INTRODUCTION

The Bologna declaration (1999) and the subsequent communiqués of Prague (2001), Berlin (2003) and Bergen (2005) have given way to the construction of the European Higher Education Area (EHEA) in which almost all European universities are concerned. All these processes want to be the response of European higher education to two challenges for the 21st century: to build an integrated continent and to connect universities to the knowledge and the information society [1].

Nowadays European universities are carrying out reforms in their systems in order to achieve the purposes of the Bologna Process. These can be transformed in three primary targets: attracting foreign students, learning focused on employment and a clear system to show if the expected

results are reached, and mobility of staff and students.

One of the basic actions aimed to reform the educational system is that the European Credit Transfer and Accumulation System (ECTS) be extensively used. The ECTS is a student-centered system based on the student workload required to achieve the goals of the program, goals preferably specified in terms of the learning outcomes and competences. Therefore, this credit system is a useful code that provides the necessary tools to guarantee transparency because it facilitates academic recognition and mobility, making European higher education more attractive for students from abroad.

Within this frame, a key in the convergence project is the use of normalized documents that makes easy for all students, local and foreign, to read and compare study programs. Among these documents are: The Students' Guide that provides information about the institution, programs, subjects and their correspondent credits and the Transcript of Records with the student's results transformed in ECTS grades.

OBJECTIVES

The elaboration of the Students' Guide becomes necessary in the fulfillment of the commitments acquired in the convergence plan since, as it has been said previously, it supposes a planning document that serves as a base in any accreditation process of the quality. For that reason, the Students' Guide must be a public document that gathers the commitment of professors which teach a certain subject, being useful to the students since it facilitates the information on the contents and directs them in their process of learning.

In this work, in the first place, we shall examine the model of design of the Students' Guide of the Polytechnic University of Valencia and its underlying philosophy, and secondly, we shall show a comparison between Students' Guide that have been made by two subjects of the first course of Technical Architecture: Physical Foundations of the Technical Architecture and Graphical Expression Applied to the Construction.

The model of Students' Guide arises from the analysis of

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the models presented by different universities. The Polytechnic University of Valencia, through its Plan of Actions for the European Convergence (in ahead, PACE) is developing different actions being one, the establishment of criteria to write the Students' Guide and the implementation from a platform that allows to have computerized Students' Guide [2].

DEVELOPMENT

The utility of Students' Guide as planning element that helps us to advance towards the European convergence is evident, but in addition it plays an important role as an element to improve the quality of the learning-teaching process.

Until now, the teaching staff had the commitment to only write up a program that gathered the contents of the subject, and in the best one of cases, these programs included the methodology, evaluation and bibliography. However, with the introduction of the Students' Guide this planning must go beyond if we consider that the intervention of the professor is framed in a wider context that includes the curriculum, the competences of the future professional, the organization in the credit system, the characteristics of the students, etc. Expressed in other terms, we might say that the Students' Guide has to place us inside an integrated and coherent educative plan and should provide a global vision of a project that has a formalization of which there is written testimony, and that is public. Therefore, teachers have a obligation whose purpose is to obtain improvements in people that are involved.

In the Document - frame on the Integration of the University Spanish System in the European Space of Higher Education (MECD, 2003) it is exposed that: "The formative aims of degrees of the official educations will have, with general character, a professional orientation. That is to say, they will have to provide a university formation that integrates harmonically the generic competences, the cross-sectional competences related to the integral formation of the people and the more specific competences that make possible a professional direction, facilitating the integration of graduates in the work market". And it continues saying later on: "these qualifications will have to be designed depending on professional profiles with national and European perspective and with objectives that must express mention of the generic, transverse and specific competences that they try to reach".

In the last years, the concept of competence, as we see, has a wide space in the university curriculum reflections [3]. The demand of a formation based on competences is expressed through the insistence in the need to plan from the perspective of learning, giving an approach of the professional profile. Thus, the formative contents that have to shape the academic itinerary are selected so that they guarantee that the student acquires the competences needed in the profile of his/her future occupation.

From the competences point of view, the higher education should design curricular actions with a methodology that promote the conceptual knowledge, the development of

attitudes and the acquisition of skills and it should approach students to the contexts that will constitute their scope of professional and social performance.

On the other hand, using ECTS as a tool to design the curriculum does not mean to apply a rule (to multiply for $\frac{60}{75}=0.8$), but a change of educational model from teachers to

students. This change of polarization, which involves a new mentality in teachers as much as in students, is slow and results in questioning what is it that we want the students to learn, for what and how. The answers to these questions are found through the search of alternative methodologies and systems to evaluate processes and results that are coherent with the new expectations.

As has been mentioned above, from the Polytechnic University of Valencia a common format to all the guides has been established, so that it is more understandable for the student and in addition, facilitates the comparison and coordination between different subjects [3]. Indeed, in relation to this last one, here it is shown the comparison between Students' Guide that have been made for two subjects of the first course of Technical Architecture: Physical Foundations of the Technical Architecture and Graphical Expression Applied to the Construction. Both documents have been written within the frame of PACE and being based on the competences indicated in the White Book of the Degree, published some years ago. In the guides the differences in methodology, in evaluation and in the conversion to system ECTS are shown.

The model for Students' Guide elaborated by the Polytechnic University to be completed by the different subjects contains the following items:

- **Data of the subject:** subject code, year of study, character, period, department to which it belongs, number of credits ECTS, name of lecturers, class schedule and the timetable for teachers office hours.
- **Description of the subject:** the generic and specific competences of the profession that have connection with this particular subject are enumerate, so that students are able to understand the importance of the subject in a wider context, knowing the utility of the knowledge that they are going to learn from this subject to confront their professional future.
- **Prerequisites:** the student must know what knowledge they must have acquired previously, and without this knowledge it will be very difficult for him to attend the subject.
- **Subject contents:** In this section the different Didactic Units that compose the program are exposed, specifying from each one of them: their title, the learning objectives (expressed in terms of learning outcomes and competences), the previous knowledge, the support material that the student can use (class notes, bibliography, attendance to conferences...), the activities that the student will have to do to obtain the proposed objectives. That is, the students have to know, without ambiguities, their tasks and the level that they have to reach. Finally, in this section it is exposed,

briefly and concisely, the most important points of the Didactic Units, as well as a recommended bibliography and, if possible, commented on. This bibliography should be short and very specific.

- **Teaching methods:** Here the didactic strategies that are going to be used to reach the proposed objectives are exposed: theory (of classroom or seminary), practices (of classroom, computer science, of laboratory or field), works, activities or any other actions that can improve and optimize the learning process.
- **Evaluation methods:** where the type of evaluation that is going to be used by the teacher is explained: summative or formative.
- **Attribution of load ECTS:** The professor should calculate the time that it takes to develop the educational strategies chosen and the corresponding evaluation. The total time will give the number of credits ECTS needed to obtain the subject specific objectives by being in agreement with the professional competences.
- **Resources and basic bibliography:** in this paragraph the bibliography is specified, which has to be short but carefully chosen and overall, related to the contents of the subject. It is also specified the resources that students can or must use to overcome the subject.
- **Chronogram of the subject:** In a table it is specified the activities that will be carried out in each of 28 weeks of the course.
- **Summary of the subject:** the goals of each Didactic Unit, with the technique that is going to be used, and the activities to be done by students and professors during the course are related. The technique of evaluation with its qualification (summative or formative) and the class hours and the hours of autonomous work used in each unit are explained.

The Students' Guide, therefore, has two clear purposes. On the one hand, it favors the coordination between the teachers at the moment of realizing a new program more according to the new requirements and for other one, provides to the student a complete and rigorous information about the subject.

Regarding the subject "Graphical Expression Applied to the Construction", the development of the Students' Guide has given place to new focuses in the contents, in the activities and in the practices. Nevertheless, in the subject of "Physical Foundations of the Technical Architecture", though the development of the guide has supposed a great reflection, the contents and the practices have not suffered notable changes, but it has been added new activities that emphasize the student's autonomous work.

The analysis of the competences of the "White Book" allows to set general and specific goals according to each of the two subjects. In Graphical Expression, the goals have placed in three groups: goals with regard to the learning of the perception, with regard to the learning of the knowledge and interpretation of the architectural object and with regard to the learning of the representation. In Physical Foundations the goals are grouped in two levels: those that correspond to the category of knowing and those that correspond to know

how to do, where emphasis is put in the learning of the skills that are implicit to the scientific reasoning.

The objectives are reflected and developed by means of the organization in Didactic Units. In the case of Graphical Expression the program has been structured in twelve units and in the case of Physical Foundations the program has been structured in eleven units. But, while in Graphical Expression the content and characteristics of each unit have a different weight, using different strategies in each unit, in Physical Foundations the Didactic Units are homogenous in duration, difficulty and workload, which allows to use similar didactic strategies in all the units.

Both subjects share their eminently practical character so that their educative goals are directed to the learning of skills. It is for that reason that in both cases it becomes necessary to increase the number of hours (credits) dedicated to the practices and the directed activities with respect to the theoretical classes.

In the next table is shown a comparison, in some aspects, between the two subject: the current credits (1), the class hours (2), hours dedicated to the autonomous work (3) and the total hours or ECTS hours (4), Percentage of the final evaluation corresponding to the formative evaluation (5), Percentage of the final evaluation corresponding to the summative evaluation (6).

Subject	(1)	(2)	(3)	(4)	(5)	(6)
EG	9	106	186	292	70	30
FF	7.5	71	129	200	80	20

As it can be observed in the table, both subjects have proposed that the hours of autonomous work should be approximately 1.8 times the working hours in class and as for the method of evaluation, for the two subjects, it is a combination between the formative and the summative one, being their weight very similar.

CONCLUSIONS

Writing the Students' Guide has led us to the following conclusions:

It has served as an improvement of our teaching model and it has also served to know a bit more the complex process of the European convergence and to be aware of the role that it has to play the higher education.

It compels us to do a reflection not only with the teachers that share the same subject, but also with those of other subjects, favoring the horizontal coordination so much as vertical coordination.

To estimate the students' workload in every subject and therefore, for one course, is not an easy task. In this respect, writing the Students' Guide has contributed a lot in reference to rationalization of the work required to overcome a subject, so that the living together of the subjects of the same course is guaranteed.

It has shown the necessities of the professor regarding

knowledge of technologies that can do the work simpler and faster, and knowledge about sources of information and its management.

The comparison between the work done by the team of teachers from each one of the subjects studied in the present work, seemingly so different, has allowed us to find points of convergence regarding objectives aimed at skills-learning and as for as the need to increase the educational practical load, with regard to the established one for theoretical classes.

Finally, making the guides is not any more than the beginning of the process of adjustment (or of transformation) to EEES, of which we still have much left to look over.

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