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The European Higher Education Area. Spanish Engineering Education

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The European Higher Education Area principles were formulated soon after the Bologna Declaration, and for more than a decade their developments have been a common task of European governments. The shaping of the EHEA has been carried out by them according to common principles but not following common procedures, and as a result today there is a wide range of perspectives with national peculiarities.

The change in Higher Education in Spain has not been either quick or easy, and the new system still keeps many defects of the traditional one. First, the process was initiated later than in most European countries, since basic legislation was not in force until October 2007 [1], after several unsuccessful attempts that were later discarded. As a consequence, in most of Spanish Universities the first promotions of students according to Bologna guidelines will not have their Degrees until July 2014.

In spite of all, the change of Higher Education in Spain is taking place. In this presentation, we will try to outline the main characteristics of the Spanish educational landscape with reference to Engineering Education. A review of the system is carried out, with special reference to the so called Industrial Engineering Degrees (Mechanical, Electrical, Chemistry ...). First of all, changes of content and structure of curricula are discussed, and also their influence on the acquisition of competences of students [2]. In this process, as Engineering is a regulated profession and the Degrees grant the access to engineering practice, their curricula have to follow legal requirements defined by the central government. These re-

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quirements were presented as a list of competences to be achieved by those graduating, and they have implied a tight framework on the contents of new curricula.

On the other hand, the introduction of innovative teaching and learning methods, as required by the new regulation, is considered as well as the attitudes of both students and teachers towards them [3]. Finally, some comments on how to overcome present situation for putting Spanish engineering Curricula on an innovative path are also outlined.

It is recommended a revision of content and methodology of new engineering curricula after the first years of their application, once the new promotions of graduates leave the universities. A proper account of their innovative aspects has to be done in that revision. In particular, the relative weight of optional subjects and a proper attention to practical training must be analyzed first.

On the other hand, we have to remark the negative effects of successive cuts applied to budgets in Higher Education Institutions, with no pedagogical criteria, and aiming only at reducing cuts. Master lessons and bigger groups both for lectures and practical sessions are being presented as new paradigms. Financial cuts have also supposed a big reduction in courses for teachers training and for innovative projects. Those cuts together with more teaching hours for lecturers, higher registration fees, fewer and shorter grants for students, are creating a double segregation in Higher Education in Spain: inside, for more deprived students, and in the EHEA with respect to other well off countries. ■

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