Papel de las plataformas de e-learning en el reto de la convergencia europea

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Abstract: El proceso que la convergencia hacia la Área de Educación Superior Europea implica un proceso multi-nivel que va desde leyes nacionales hasta metodologías pedagógicas. En este artículo, describiremos algunas experiencias de adaptación de los planes educativos del nuevo papel de los maestros como guías en el proceso de aprendizaje del estudiante y el aumento del trabajo autónomo que los estudiantes tendrán que hacer usando plataformas de e-learning. Describiremos el proyecto Aulario Virtual, hecho para una universidad presencial (la Universidad Pública de Navarra) y el proyecto que se ha hecho para converger todo el ofrecimiento académico en el Campus Virtual de la Asociación de Universidades Españolas hacia el modelo pedagógico de la Área de Educación Superior Europea.

Keywords: Modelo Pedagógico, Plan Educacional, Plataforma de e-learning, Universidad Face-to-Face, Campus Virtual

1. Introducción

Las Universidades Españolas están experimentando un proceso de reforma con el objetivo de adaptarse a la Área de Educación Superior Europea (EHEA), que fue formalmente definida después de la Declaración de Bologna. Una parte importante de ese proceso significa que debemos hacer cambios organizacionales. Sin embargo, también implica el suministro de recursos técnicos y humanos para la enseñanza y el aprendizaje. Al adaptarse a la EHEA, requiere llevar a cabo cambios en el diseño de los estudios universitarios, también necesitamos cambiar la metodología en el plan educativo de cada asignatura y una buena coordinación entre ellas. El diseño de los planes educativos ha jugado un papel central en el trabajo diario de la profesorado. Teniendo en cuenta la relación profunda entre los planes educativos y la calidad del nivel educativo, la manera en que se introducen los cambios metodológicos en ellos es de gran importancia para que la Educación Superior siga el camino correcto hacia la excelencia.

Las Tecnologías de la Información y la Comunicación (TIC) facilitan muchos de los cambios que requiere la EHEA. En particular, las TIC permiten el uso de plataformas de e-learning, que incluyen herramientas de comunicación y una amplia gama de recursos que pueden ser administrados por el profesorado. Como veremos en este artículo, las TIC representan una forma natural de transformar la metodología actual de enseñanza y aprendizaje en la que la EHEA sustenta.

En este artículo, presentamos la experiencia de la Universidad Pública de Navarra y el Grupo 9 (G9) de Universidades, que es la mayor asociación de universidades en
Spain. We focus on the use of the e-learning platforms as a way to improve the teaching and learning processes. These platforms also let the Teaching Staff follow training courses and have a virtual space for collaborative work. We analyze the role of the e-learning platforms within a classical face-to-face university (the Public University of Navarre) and in a virtual campus shared by several universities (the G9 Campus).

The paper is organised as follows. Section 2 presents some of the organizational changes that European universities must compulsorily implement during the convergence process. Some of the methodological changes to be introduced in the educational plans driven by this process will be then compiled. We highlight here those aspects that, due to their importance, are key points to get a net improvement of the quality of the European Higher Education system.

Section 3 is devoted to the role to be played by the e-learning platforms for the change of the educational plans in face-to-face universities. We present the project "Aulario Virtual" (Lecture Room Virtual Building) carried out by the Centre for Innovative Higher Education in the Public University of Navarre. This project was conceived to encourage the Teaching Staff to use an e-learning platform as a complement to traditional face-to-face teaching. We also describe those tasks within the Aulario Virtual project proposed to promote the technical competence of the Teaching Staff in the use of the e-learning platforms as well as the pedagogical competence in the methodological changes that the EHEA means in the educational plans. An example of how the educational plan of a real subject has been adapted to the EHEA is finally described.

The Spanish G9 of Universities is carrying out another project to adapt all the virtual subjects in its academic offer to the EHEA. Since these are subjects where no face-to-face interaction is possible at all, we think that the changes introduced in the educational plans deserve a special discussion in Section 4. As a result of this project, 20% of the subjects in this virtual campus will follow new educational plans in the next academic year, and we foresee that a growing number of the remaining subjects will progressively join the EHEA educational plans. The Spanish G9 of Universities pursues to have its subjects adapted to the EHEA pedagogical model as soon as possible to easily extend its academic offer within a broader European Virtual Campus. The main guidelines of the educational plans in this project will also be presented in Section 4. Section 5 will give some final conclusions on the paper.

2. Several levels of the convergence process

European Universities undergo a reform process, which, in fact, comprises several processes in parallel. European Universities look for the convergence on a unique European Higher Education Area, which was formally defined after the Bologna Declaration (followed by the Prague'01, Berlin'03, and Bergen'05 Statements) of the European Ministers responsible for their national Higher Education systems [Bergen 05a]. The EHEA should be comparable with the Higher Education systems in USA or Japan in terms of diversity of studies and employability. It should improve the exchange of students between European universities and provide means to easily compare equivalent degrees in different universities.
As it was stated in Section 1, the convergence process requires macro-level organizational changes to be made: how the degrees are organised or which mechanisms have to used to compare equivalent degrees in different universities, just to name a few, are some of the questions that have to be solved at this level. These matters fall to the national or regional governments where the university carries out its duties as well as to the university government itself. However, the convergence process also imposes micro-level changes: the educational plan of every subject in the academic offer must be adapted to a new pedagogical model, where, as we will see, the role of the teacher shifts from the information transmitter to the information manager.

At the macro level, one of the main issues is a joint degree structure and qualification system [Reichert 05, Bergen 05b, Qualifications 04]. The cycle-based degree system is one of the main contributions of the Bologna agreements in European Higher Education. Promoting the attractiveness of the European Higher Education Area would be easier if the transparency and comparability of European Higher Education degrees were real, for instance by means of a common framework of qualifications (competences, skills, etc...). In this sense, the Berlin Communiqué (2003) states: “Ministers encourage the member states to elaborate frameworks of comparable and compatible qualifications for their Higher Education systems, which should seek to describe qualifications in terms of workload, level, learning outcomes, competences and profile”. In the EHEA, the student is progressively made responsible for his/her own Higher Education, allowing him/her to progressively have more flexibility to configure his/her academic curriculum. In the EHEA, other non-academic learning activities are also recognised within the university: "Ministers furthermore call those working on qualifications frameworks for the European Higher Education Area to encompass the wide range of flexible learning paths, opportunities and techniques and to make appropriate use of ECTS credits." Finally, European universities should be increasingly aware of the importance of improving the quality of their activities that should be accredited either by internal or external offices, and either by regional or national or European accreditation offices.

Establishing the EHEA by 2010 is a joint endeavour of governments and institutions but also of teachers and students. At a micro level, teachers and students do play a very active role and should make significant contributions to change the European Higher Education system. From the point of view of teachers and students, the EHEA will be characterised by the two following sets of descriptors:

- Students will do more autonomous work. They will have, though, a closer guidance from their teachers. There will be also more student-to-student interaction. Teachers will have a deep corporate feeling: they will share the skills and competences to be worked with the students; they will prepare altogether their educational plans; they all will have in mind the type of graduate that they want in the end, etc.

- Learning outcomes should be enough for the current labour market. The learning process should also mould the students' attitude to be active citizens for our European democratic societies. It should be valuable for the students as a personal self-fulfilment process also, and provide a solid cultural background useful for their lives.
3. The role of e-learning platforms in face-to-face Universities

3.1 e-learning platforms

Technological progress has arrived at our lives to modify every single aspect, including teaching and learning. It is not a matter of how much technologically sophisticated are the new devices or procedures used while teaching or learning but what is their potential to modify the way in which we usually teach or learn. None of the techniques we knew before the Internet Age (slides, video presentations, etc.) have had such a great importance from the point of view of pedagogical change.

Teachers' role is transforming. Nowadays, students may have access to the same information that their teachers use. Teachers are no longer either exclusive owners of knowledge or transmitters of information. In the learning process, students had compulsory to refer to their teachers' explanations in class in the past. Today, students may have often access to better information web resources than their teachers' explanations. However, the students don't have the criteria to discriminate good information from bad information so they usually waste their time reading superfluous contents and don't pay attention to what they need for the subject. Tell your students to do for homework a short essay of any particular aspect of your subject: they will find a lot of documents and data in many different websites; unfortunately, in many cases, they will be misleading documents from the teacher's point of view. In fact, when the students meet the information without any other guidelines, they don’t know what to do with it, how to decode the data to incorporate the new knowledge into their minds. Hence, teachers' role should partially shift from the information transmitter to the information manager. Students would find this information in their teachers' explanations in class or in the lab, but also in the web, databases, etc. Since students may have available very good information and information transmission systems (interactive web resources including audio and video, for instance), the teachers may use their time for other higher-level activities like individual or group mentoring.

The Australian Graduate School of Management in the report "Managing the Introduction of Technology in the Delivery and Administration of Higher Education" says that the so-called Information Technologies in our universities should bring, among others, the following benefits: 1) more interaction between students and teachers (e-mail messages, posts in a forum, chats and audio- and video-conferences) that should allow the teachers to closely follow their students' learning through fluent and constant mentoring; 2) intense interaction between students, which should make it easier for the students to work together and for the teachers to check the groups’ progress. Students might also participate in discussion groups chaired by the teacher and compare easily their learning progress with others; 3) computer simulation as an unbeatable learning and teaching tool; 4) virtual research labs where students may have access to experiments not available otherwise; 5) self-assessment; 6) access to a wide range of learning resources recommended or even created by the teacher. However, technology doesn't guarantee any pedagogical changes. Many web courses of some face-to-face universities and distance learning institutions have changed the supporting media but haven't taken advantage of the real possibilities of the new technologies. They are more than a way to distribute the slides that we all use in class, since virtual material doesn't mean any additional intellectual challenges in this case with respect to hard-copies. New
technologies allow the teacher to use different codes at the same time (text, simulations, video, etc.) to reinforce learning, add links to related topics, ask for the student's contribution, know the student's progress through these contributions, check work groups, discussion groups, etc.

The number of students in class has been increasing in the last decade. The fact is that teachers have a huge number of students in their subjects. Following the learning progress of every single student in class has been made an impossible task to fulfil. Preparing the class, giving the daily lectures and assessing the students (usually through a single exam at the end of the term) are the only academic activities we can do in the time we have available. Realising this situation, during the last Portuguese presidency of the European Union the "Report on Quality of School Education: sixteen qualify indicators" encourages the educational institutions teaching the students how to do an autonomous learning. Provided the students are guided through good learning resources, created by the teacher or accessible through the web, teachers would have more time for the above mentioned high-level activities. This intense teachers' guidance may be made through the subject learning guide where the student would find not only the technical contents he/she needs to know at the end, but also suggestions on activities, usual technical problems or learning problems within this subject and ways to solve them, self-assessment questionnaires, complementary material for those interested, computer simulation examples, etc. These guides don’t have to be necessarily in an electronic format, although that would be preferred to take benefit from the Information Technologies as described in the last paragraph. Students may attend some face-to-face lessons at the beginning of the term, where the main objectives in the subject may be described, and some others to supervise the course progress and to draw conclusions at the end, for instance. Between these face-to-face lessons, students should do their autonomous but guided learning. So that in the end, he/she has the subject's learning guide and his/her teacher's mentoring and, hopefully, virtual assistance. In distance learning, the importance of the subject's learning guide and the teacher's mentoring and supervision has to be reinforced. Learning guides should be more detailed and teacher-student interaction as well as student-student interaction strengthened through ad-hoc activities to help the students to solve their problems and to help the teacher monitor the students' progress.

3.2 The Aulario Virtual project in the Public University of Navarre

At the beginning of 2004, we started the so-called Aulario Virtual project with the Centre for Innovative Higher Education in the Public University of Navarre, http://csie.unavarra.es/. The main objective in this project was to promote the work of the teachers to adapt their subjects to the new pedagogical model of the EHEA. The Aulario Virtual website at http://aulariovirtual.unavarra.es provides a pool of electronic tools that teachers may use to create virtual complements to the traditional face-to-face activities. Every subject in the academic offer from the university was joined to the Aulario Virtual website as a different virtual course, which includes chat, e-mail, forums, several modules to add contents in any format, etc. This virtual complement is ready to be used by the teacher and the students who enrolled for the course. Teachers may simply add contents in .doc or .pdf format or, preferably, create more useful virtual scenarios, which would demand from the students to both acquire new knowledge and process it through an encouraging interactive work. More than 2300 subjects, 680
teachers and 9690 students are now present in the Aulario Virtual running WebCT 4.1 Campus Edition.

This is, to the best of our knowledge, the first experience in a Spanish university to make accessible through its webpage the whole set of subjects of which a teacher is the academic coordinator or for which a student enrols. Although the availability of the virtual complements of the subjects doesn't guarantee their use by the teacher and/or the students, our experience is that the real use of the virtual courses has been made 10 times larger in only one academic year. However, even if all the virtual courses had been used, this wouldn't automatically mean that methodological changes would have been carried out in the subjects, as we commented previously. Nevertheless, during the 2004/05 academic year we have begun to see innovative teaching experiences propelled by a virtual space that helps the teacher find a new role, which is naturally more in accordance with the EHEA. The kind of educational plan followed by one of these subjects and the use that it makes of the virtual complement in the Aulario Virtual will be described below.

The Aulario Virtual project was supported by an intense advertising campaign among the teachers in the Campus. Along with the e-mail message every newcomer (teacher or student) receives at the beginning of the academic year indicating the username and password to log onto the Aulario Virtual website, the responsible for the Innovative Higher Education Centre organised a series of informative sessions for the teachers in the different Faculties and Centres of the university. Teachers also received hard-copies of a WebCT user's manual for beginners.

In spite of all this, many teachers didn't use the Aulario Virtual. Some of them didn't have enough training in Information Technologies. Many others were well informed and had enough technical competences, but decided not to use the Aulario Virtual anyway. From their point of view, an e-learning platform didn't contribute anything new to their teaching work. Many of them are suspicious about the e-learning platforms because they think that they are just a way to reduce institutional investments, for instance in the teaching staff. In favour of the Aulario Virtual, we must say that internal training courses on Information Technologies were undoubtedly on great demand. It also encouraged many teachers to successfully test the EHEA methodology of teaching and learning.

The Innovative Higher Education Centre organised during the academic year several activities about Technical Innovation and Pedagogical Innovation in Higher Education: face-to-face courses in WebCT, tools for multimedia contents, etc were offered to the teachers and conferences on the EHEA educational plans were also organised.

All teachers on the Campus had also access to two on-line courses at the Aulario Virtual website: a) "Formación para el Aulario Virtual" (Training for the Aulario Virtual) is an on-line course in WebCT and in other software tools. It was designed and created by computer programmers with the Innovative Higher Education Centre. They were also in charge of answering the teachers' questions in the course. b) "Espacio Europeo de Educación Superior" (European Higher Education Area) is an on-line course in macro and micro-levels of the convergence process. In addition to all the documents related to the convergence (European Ministers' statements, Spanish Royal Decrees after the Bologna Declaration, etc.), it gives the teachers a virtual space for collaborative work in
many aspects of the convergence including the educational plans of the university academic offer. The first phase of this course included all teachers, researches, students and people in administrative positions in the university as well as future students (high schools). Personal usernames were given to all these people except for current students and future students, who received a username to be shared by everyone in the same degree or high school respectively. Some other political authorities in the regional government and observers (G9 of universities) were also invited to join the course. During the second phase, social partners (employers and unions) might also have access to the course to let them express their own opinions and take part in the different work groups. Another activity in this course was the collaborative work from the researchers involved in the project that will be described in Section 4. Adapting the entire academic offer on the virtual campus of the Spanish G9 of universities meant a work at various levels, as we will see. Teachers created and shared educational plans according to the EHEA methodology and worked in documents with guidelines for future EHEA educational plans.

3.3 Example of the EHEA educational plan of a subject in the Public University of Navarre

The methodology of combined face-to-face and guided learning is currently being followed in Optical Networks, a last-year option in the degree of Telecommunication Engineering at the Public University of Navarre, Spain. This degree is a two-cycle degree (half of the European students of Higher Education are already enrolled in this kind of two-cycle degree system as the Bergen Communiqué stated in May 2005) but it is far from complete convergence. European Credit Transfer System (ECTS) has not been adopted yet, nor the diploma supplement, qualification system or the description of cycles and subjects based on learning outcomes and competences. A student of Telecommunication Engineering at the Public University of Navarre gets his/her diploma after 3+2 years of annual or more frequently 4-month subjects and typically 9 to 12 months of a full-time final project, which must be supervised by a teacher of the university. The final project is usually done at the teacher's research laboratories or at a company where he/she has personal contacts.

There are many things an individual teacher simply cannot decide on his/her own regarding the European convergence process as it encourages a corporate feeling among all people working in the same degree. There is left, though, a huge and very attractive place to work where every teacher can do it his/her own way: the subjects for which he/she is responsible. That's what we decided to do with Optical Networks as a singular experience in the degree. We were aware that a last-year subject is probably a better scenario to start working on than a subject with students beginning their Higher Education, for instance. It is also true that the experience, carried out during the last few years with 25 to 30 students per year, is not statistically representative. However, this subject is an encouraging example on how teachers have begun to understand the shift in our role in the students' learning process. While the vast majority of the subjects that the students attend in this particular degree are thought to be unidirectional (from the teacher to the students) subjects, consisting of a set of informative lectures where students take notes of the explanations of the teachers who, at the most, may have previously distributed the slides electronically or in hard-copies on which they will assess the students using a single final exam, Optical Networks reduces the amount of
informative lectures, it offers different kinds of activities in class and reinforces the importance of the teachers as guides in the learning process. Every single student's progress is continuously monitored and the feedback used to help him/her solve his/her problems and let him/her continue learning. Since many contents are accessible through the web, autonomous learning can be made by the students and, hence, this subject's teachers have more time to meet the students in their offices or at the website (forums, chat, e-mail), to carefully read the students' reports, to help them with their group work, look for any materials that a particular group of students may need, etc.

The following activities which both the teachers and students devote their time while teaching and learning in this subject:

- Teachers plan the activities in this subject during the term, from the end of February to the end of May. This includes the time that students should devote to autonomous work. Each theme in the subject is given a certain number of activities that the students must do: writing reports, working with simulation software, visiting their teachers, attending an expert's conference, etc. These activities are distributed throughout the weeks in a calendar. Both the teachers and the students comply with this calendar during the course.

- The subject learning guide is completely accessible via the Aulario Virtual website and teachers work on it continuously adding new capabilities. It includes all the materials that the students may need to learn in this subject: explanatory technical documents used in class or for autonomous work, experimental exercises that students do in the lab assisted by the teachers, simulation exercises that students solve online, databases of the optical instrumentation used during the work in the lab, glossary, links, self-assessment questionnaires, the calendar of activities of the course, etc. Teachers are currently working on a Frequently-Asked Questions (FAQ) section, where students may look for usual points in the subject that they usually find problematical and what teachers suggest to do to overcome them. In a HTML document, teachers specify for every theme in the subject, its objectives, related activities and methodology (writing reports through group work, for instance), links to the materials used in the theme, and links to complement modules that teachers may think that some students might need. This is a way to implement in a web the guidance role that teachers must play. There's also a section for students who decided to continue working on the subject once they passed it, in order to do their final project. The teachers ask these research students to periodically upload some of their results to the learning guide website; then, the teachers may use these research students' experiments to empirically show concepts that otherwise may sound quite abstract. So that, teaching emphasises the importance of research and research provides results that are used while teaching. (See the main page of the learning guide website in Fig. 1)
• One additional advantage of having the learning guide online for the students' autonomous work is that it may be integrated within the platform where intense teacher-student interaction and also student-student interaction takes place: email, forums, chat, virtual folders for the group works, etc. This teacher-student virtual interaction complements mentoring in the teachers' offices and it is a powerful mechanism to follow the student's daily activities (which contents he/she visits in the learning guide, the exercises he/she completes, etc.) and also a quick way to solve his/her problems with the subject (using, for instance, the email, scheduled chats, etc.).

• Some themes have been prepared as case studies and they include conferences of people working in companies where students might be employed when they get their diplomas. This allows the students to hear real needs of a real company, while companies are aware of the technical and personal training that their potential employees are receiving. Teachers might also detect mismatches between what their students learn and what the companies expect them to learn and adjust the course programme as required.

• In this subject, continuous assessment is used. This doesn't mean that students have to go continuously through several exams or have to submit a lot of individual and group projects, which would overburden both students and teachers. In fact, this is nowadays a usual mistake. By continuous assessment we mean a continuous monitoring of the learning progress of each student, adapting continuously the work programme to his/her circumstances, and adding, if necessary, extra activities to catch his/her colleagues up or to extend his/her knowledge further. Assessment is therefore used for accreditation but also to get feedback from the learning process followed by our students and to modify it if needed.
• Quality is a major concern of the teachers. Students are required to judge several aspects in the subject (quality of the learning guide for autonomous work, real number of hours in the different activities and those expected in the teachers' calendar, usefulness of the simulation examples or the visits to the teachers' offices, etc.) Students' assessment not only works as an accreditation mechanism and as a way for the teachers to know how the students follow their learning process and to get valuable feedback information about it. It is also something that teachers may use to know what aspects of their programmes may need to be reviewed: for instance, the students might usually fail to answer questions about certain topics or have problems handling certain simulation tools; teachers should consider, among other things, if the timed schedule for these topics was enough or if the simulation tools would require some other technical competences to be acquired first.

• Work in group is an important transversal competence that any engineer should have. Many teachers usually tell their students to work in group. Only a few of them, however, follow how their students actually work in group. If teachers don't know how their students work in group, then they cannot help them if, in the end, students do it badly, which frequently happens. In this subject, students are asked to work collaboratively using the forums. Teachers may supervise how the students organise their work and divide the tasks, and they may help the students if they have problems setting the calendar for instance. Teachers may also help provide adequate information resources for each work group, either requested by the students or on their own free will.

• Some technical competences that any Telecommunication Engineer should have are worked in this subject: the use of professional optical instrumentation through intense work in the lab (at least one-third of the time that the students devote to this subject is in the lab), the reading and writing of technical data sheets of optical fibre instruments, the design of optical fibre links and optical fibre networks taking into account real instrument features, etc. Students usually find this information at the suppliers' websites so that some other transversal competences, like a critical search of information based on technical performance, are also worked.

4. The experience of the Spanish Group 9 of Universities: EHEA in a full virtual context

4.1 The Spanish G9 of Universities

The Group 9 of Universities, http://www.uni-g9.net/, is a non-profit association of the public universities of the following Spanish autonomous regions: Cantabria, La Mancha, Extremadura, the Balearic Islands, La Rioja, Navarre, Asturias (University of Oviedo), Aragon (University of Saragossa), and the Basque Country. This association was set up by an agreement signed on May 16th, 1997, and it is the largest partnership of universities in Spain.

The Spanish G9 of Universities share common social objectives, which are written on the articles of association, and they promote collaboration between all the universities in the group in the areas of Teaching and Research as well as in Management.
Figure 2 shows a map of the seventeen Autonomous Regions in Spain, nine of which (in blue) have public universities belonging to the G9. Near 250,000 students study at the G9 public universities and 55 different subjects (69 in the next academic year) are in its joint academic offer. In the last academic year, around 1% of the students in the G9 enrolled in one or more of these subjects, which must be followed as distance learning courses through the e-learning platform of the offering universities (WebCT typically). All subjects in the G9 joint academic offer make up the so-called G9 Campus Virtual Compartido (CVC) or G9 Joint Virtual Campus, whose number of students has evolved with time as shown in Fig. 3.

**Figure 2.** Spanish Universities belonging to the so-called Group 9 or G9. The G9 is a non-profit association of the public universities of the Autonomous Regions in blue: Cantabria, La Mancha, Extremadura, the Balearic Islands, La Rioja, Navarre, Asturias (University of Oviedo), Aragon (University of Saragossa), and the Basque Country

### 4.2 The Joint Virtual Campus of the G9

The subjects in the G9 CVC are all subjects that G9 students voluntarily decide to enrol in, making use of their right to freely configure part of their academic curricula. These subjects are distance learning courses: students follow the subjects through the e-learning platform of the offering university and teachers guide the students' learning progress and propose the activities and the calendar. Undoubtedly, this Joint Virtual Campus is the flagship of all G9 activities and it's worth commenting the CVC project in this paper.
In the beginning of the academic year, any teacher of any G9 university may offer a subject to be included in the CVC. After the revision process, the subject might be accepted if the G9 committee for teaching matters to be consided that it is well adapted and it has a suitable content for a wide-ranging body of students to be followed by e-learning platforms. If some prerequisites are needed for the subject to be followed, this is the time to make it clear along with how long the subject lasts, i.e., number of (non-ECTS) credits. Once the subject is being read, the resources and costs of maintenance of the CVC are shared by the nine universities in the G9. Teachers see how their teaching activity is computed in the same way as for local face-to-face students and the subject number of credits are added to the student's academic curriculum.

Subjects are grouped into three different itineraries: Information Technologies in the Companies, Information Technologies and Education, and Environment and Sustainable Development. If a student courses all the subjects in the itinerary, he/she receives a G9 Diploma. Not every subject in the G9 academic offer belongs to one of these three itineraries. The next academic year, a new 60 ECTS-credit (2-year) Master of Learning Environments and Information Technologies will start (see Fig. 4). The educational plans of every learning module in the Master are organised according to the EHEA.

**Figure 3.** Evolution of the number of students with time in the G9 Joint Virtual Campus, taking also into account the home region of the students

**Figure 4.** Logos: left, Master of Learning Environments and Information Technologies; right, Group 9 of Universities
Joint doctorate courses and joint teaching by video-conference have already been put into practice and plans are being elaborated in order to increase further the collaboration within the group, looking for a higher administrative status for the G9 as well as transnational partners to extend the G9 academic offer within a broader European Virtual Campus.

4.3 Educational plans in virtual contexts

In November 2004, several G9 teachers and administrative agents met in Bilbao to join the G9 Conference on "E-learning and European Higher Education Area", [http://cv.ehu.es/g9cvc/htm/jornadas.htm](http://cv.ehu.es/g9cvc/htm/jornadas.htm). Three groups discussed the pedagogical model in the CVC, the role of the e-learning platforms in the EHEA, and current and future plans for the CVC for several days. One of the conclusions drawn by these work groups was that the development of new educational plans is as a key point to adapt the G9 academic offer to the EHEA pedagogical model. Some of those present at this conference decided to start a pilot scheme whose main objective would be to have some of the subjects in the G9 offer already adapted to the EHEA in order to encourage the remaining subjects to join them as quickly as possible. With the goal of developing the EHEA educational plans of the participating subjects. In March 2005, the Spanish Ministry of Science and Education decided to fund this project.

Figure 5 clearly shows that some of the members in the research group are experts in European convergence issues, while others are experts in e-learning or teachers in any of the G9 universities. Experts in convergence and e-learning are advising the teachers during this project, which will conclude next October and whose deliverables will be the EHEA educational plans of some of the subjects in the CVC offer as well as the guidelines for the future adaptation of other virtual courses in the G9 to the EHEA.

In April 2005, representatives of these three experts' groups drafted out the main documents that should guide the teachers to prepare EHEA educational plans within G9. In particular, the new educational plans should provide: outcomes in terms of technical,
transversal, and personal competences, main objectives in each of the modules in the course and description of the activities to achieve them, the calendar for these activities along with an indication of the student's workload in number of hours per activity, assessment, etc. This group of experts asked the teachers to clearly state in their educational plan where the students might find difficulties. The teacher's role as a guide is his/her primary role in the EHEA, this must be reinforced in completely virtual contexts, where the student can feel lost easier. Taking into account that people from different degrees enrol in the same G9 subjects, the teacher should also provide complementary modules where the students might be referred to in order to catch other students up. These documents were discussed within the three work groups of experts in Fig. 5 using a virtual course in the Aulario Virtual of the Public University of Navarre, as we saw in Section 3.

From April to June 2005, teachers have been adapting their current educational plans into new EHEA educational plans making use of the documents in the previous phase. By October 2005, all of them will be ready for final editing and the project report should be ready for publication by the end of 2005.

5. Conclusions

The European Higher Education Area implies several changes to be made in the European universities at several levels. In this paper, the micro-level implications have been seen in two real scenarios: a) a typical face-to-face university (the Public University of Navarre), and b) a virtual campus (the Joint Virtual Campus of the Spanish G9 of Universities). In the opinion of these authors, e-learning platforms allow the teachers to shift from their current informative role to a guidance role. Students would develop more autonomous work and teachers would have more time available for other high-level teaching activities like mentoring. This is in accordance with the EHEA pedagogical model. This guidance role should be further reinforced in completely virtual contexts where no face-to-face activities are possible at all since the students may be easily tempted to give up the subject the first time they find a problem.

The Aulario Virtual project in the Public University of Navarre has been described in detail. All the subjects in the university academic offer were automatically registered to have their own virtual complement, even when the teacher hadn't applied for it. This virtual complement included communication tools and content modules ready to be used by teachers and students. This made the real use of the e-learning platform 10 times larger in only one academic year, and it was a way for some teachers to naturally find their new role as guides in the students' learning process. One real experience in the Telecommunication Engineering degree was described. The Aulario Virtual project also includes face-to-face and virtual courses to reinforce the technical competence of the teachers in e-learning platforms and related software as well as their pedagogical competence in the EHEA methodology.

Finally, the EHEA has been considered in a completely virtual campus like the CVC. It has been described a project that seeks to have prepared the educational plans of all the subjects in the CVC academic offer in accordance with the EHEA methodology. This academic year, 20% of the CVC subjects had new educational plans and the remaining subjects will have them in the next one. Once the total convergence is achieved, the Joint Virtual Campus of the Group 9 of Universities will be ready to be merged with any other European Virtual Campuses to widen their respective teaching and research
activities looking for the excellence and making it available to a larger number of European citizens.

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References


