Instructional Technology at the Spanish Universities

Antonio R. Bartolome

Cited as:

It is not easy to describe so different situations in so few pages. I am going to show the framework, remarking that we do not reflect the situation of one specific university. The quick changes do not help to this description. However, in these lines you will find the big lines of how media are being used in the Spanish Universities. This text has been checked and commented by Manuel Cebrian (Universidad de Malaga), Joan Ferres (Universitat Pompeu Fabra), Francisco Martinez (Universidad de Murcia) and Jesus Salinas (Universitat de les Illes Balears). They are not responsible for included appraisals that I personally assume.

1. Media and Methodology

The availability of resources at the Spanish University is enough to answer the needs of professors: there are overhead projectors, VCRs and TV-monitors, slides projectors... as well as computers rooms, individual video-watching posts, special audiovisual equipped rooms, etc. The most or every university has resources center, and sometimes these centers are equipped to produce video programmes at Broadcast level (Sevilla, Málaga, Murcia, UNED, Barcelona,...). Some universities have problems as the difficulty to obscure classrooms, no video-production availability, small number of computers... In my Faculty the ratio computer (Pentium or PowerMac)/student is approximately 1/25.

The situation is different for the methodology applied to these resources.

2. The use of resources by professors: showing and lecturing.

The most of professors, specially these ones that work with large groups in initials courses, use to act as traditional lecturers. The students scarcely participate. So, the blackboard (or white board) is widely used, no badly but not enough well, and in different ways in Physics or Humanities, e.g. solving problems, transcribing mathematical processes, reproducing graphics to help to understand intuitively concepts, spelling names or difficult words,... Every classroom had usually included some kind of slate.

In this context the overhead projector has been introduced in the universities as a massive resource with a high level of acceptation by the professors. The equipment is now to be enough powered but the screens do not use to be more than 150 cm. of width for groups of more than 100 students. Although the resource is widely used, the methodology is not so positive. Some professors elaborate their slides with quality but others use to make photographic copies of printed or typed pages: in these cases, the text is scarcely legible because the small size. It is not frequent the use of selected symbols that help to structure the contents, of pictures, or of different presentation techniques as switching off the light or covering partially the slide.

The situation changes in upper and in graduated courses, where the small size of groups solves the legibility problems and it facilitates a more participative methodology.

The 35 mm. slides are progressively less frequent, substituted by video, computer presentation or overhead slides; they have been or are being used in Biology, History of Art, ... The classrooms used to present problems related to screen size (less than 8H rule), or the luminous environments.

From the end of 80's computer presentations are usual in some lectures, generally with LCD and overhead projectors, despite that recently the use of videoprojectors is more frequently. This equipment is required usually when the professor needs to show some software as statistics program, Data Bases, access to Internet and, of course, in courses directly referred to Computers. The initial problems related with illumination and legibility are fewer progressively.

After blackboard and overhead projector, video is the third resource more used -excluding the professor. In several cases video programmes reproduce the non-participative methodologies; in a few cases, some professors use long programmes as substitute of their own activity without previous presentation and/or posterior discussion. By the other end, some professors have recourse to video with a participative methodology, using short sequences as support to oral description or to stimulate the dialogue.

There is other widely used resource: printed materials. Several professors distribute between their students some sheets with the contents or the program of the course, plus bibliography, etc. Others prepare notes that the students reproduce and sell directly or through the specialized services of the University. More frequently than desired these notes include reproductions of articles or part of books not respectfully with author rights. The cause could be found in the high number of students (e.g. 1000 divided in 6 groups) and a reproductive education conception that offers to every student (e.g. 200 students) to read the same text during the same period -because no discussion between different approaches are considered.

Of course, printed materials are used also in a more creative way, and, in several courses, students are required to prepare their own text and graphic works.

CCTV, Radio, TV, audiotapes, ... are not usual. Internet related resources as electronic tutoring, web information distribution and collecting, discussion groups,... are used in a few courses but they are extending very quickly, specially in humanities.

3. Media Centers

What help do professors find for using instructional resources? There is a tradition of people and groups that have stimulated and supported the use of media in the Spanish universities. During 70's this work was assumed by ICEs (Educational Sciences Institutes) in each university, and resources centers linked to ICEs. Some of these centers acquired a big importance, and, with the influence fall of these institutions (ICE) some centers have passed to depend directly of central services.

As more professors have accustomed their self to use these resources, the centers have incremented their work but they have rarely assumed the whole coordination of the use of

media in a university. Frequently, more than one center offer these services in the same university, well because organization needs, well because different professors have searched individual solutions to their problems in this issue.

However, if we must to give a global idea, in the most of Spanish Universities there are efficient centers with different equipment levels, e.g. usually a professor will find help to produce a video programme or some slides, but only some universities can to offer Broadcast level for video production.

In some universities, these big centers offer also the distribution of equipment for class sessions, but this is usually a task assumed by department or centers. The size of the Institution and its geographic distribution determines these aspects. In the last years different endowments have let to universities to acquire the needed equipment -e.g. the most of the classrooms have video and slides-overhead projection availability.

4. Media Center Staff

The media centers use to be directed by people linked to educational more than technological world. The average staff is low but the collaboration of students (with scholarships) help to surpass the budget limits.

The most of the Directors of Media Center in Spanish Universities have been connected through the "Seminario Permanente de Tecnologia Eductiva" (Educational Technology Permanent Seminary), some kind of forum with a long history that at this moment lacks of a stable structure, e.g. rooms, budget... The human relations between these people have been a key point to maintain a high and positive level of communication. The universities use to collaborate in joint projects.

5. Best samples of technology application

It is difficult to speak of best sample because the lack of information: Spain is a country with more than 40 millions of people and a high ratio of university students. In every university and center there are several professors that do research and innovations with great attention to the instruction techniques. We are going to refer some samples in the University of Barcelona because its proximity.

 Educational Technology Course. During the last three years, the students work in learning experiences powered environments, with a high level of technology support, e.g. video and film programmes analysis units, edition units, computers rooms,... The palette of situations is complemented with visits, lectures, multimedia equipment,... The most interesting is the absolute appropriation of technology by students: media are used a support for a symmetrical communication. By other way, this use is naturally introduced in the framework of a new instructional design that power the development of communicative skills, searching-selecting-assessing-structuring the information, taking decisions.

 Design and production of Educational Video programmes.
During the last two years, these students have produced in high level PowerMacintosh Digital Edition Units. The more relevant is the obvious sophisticated equipment, but the possibilities that students have found: the can to play with the medium until finding the best combination

in editing tapes: learning by trial and error in an open environment. In fact, these students have got the prize that every year decide the university for video productions.

Students of different levels from different universities across Spain have participate in a telematics discussion as an integrated element of their curriculum. This kind of discussion has been imitated by other professors. More than the use of Internet, the key aspect is cross-university conception of curriculum, the virtual dimension of this course.

Graduate students develop web documents on educational possibilities of Internet, including samples. Several professors are using the web in Spain to distribute their materials, but I would like to note the participation of students in the production of materials.

In the University of Balears Islands they are experimenting with virtual classrooms based in width band emissions. In this way, the students that reside in small islands do not need to move to the biggest every day. It is not usual this kind of technology in Spanish Universities, but it is logical because the configuration of our cities and our life style that gives great importance to personal contact and group meeting.

6. The University of Barcelona

I have tried of presenting the big traits of the situation in Spain. The University of Barcelona plays a leader role in the introduction of technology in Higher Education. During the last years the GAIU (cabinet for evaluation and innovation at the University) has promoted the improvement of teaching methods, including the use of technology, supporting projects suggested from professors and generating its own projects; between others it has been developed an own authoring environment named Metode. Also it has promoted the use of telematics and, specifically, Internet by professors and students.

At this moment, the University has launched an ambitious project: the Teaching Enhanced by Technology programme. Briefly, these are its key points:
. To power the introduction of resources but always in the context of innovative instructional designs. To work in the educational methodology and, only in this framework, in the technological resources.
. To promote the collaboration with other Institutions and Universities. To promote the development of transnational products. To promote the development of commercial products.
. To pass from experimental phases to operative work over whole faculty activities.
. Do not create new production center but to improve the existing.
. To run in a virtual mode over the different campus of this university -80.000 undergraduate and 20.000 graduate students.

We have found multiply similarities between our programme and the ideas exposed by Susan Awbrey (Awbrey, 1996) in Educational Technology Review.

You can to consider this paper as an invitation to other institutions that would want to begin new collaboration ways with us.

==========
Awbrey, S. (1996). Successfully Integrating New Technologies into the Higher Education Curriculum. Educational Technology Review, 5, 7-9.