The role of teachers in rich technological environments

Discussion about intensive use of laptop computers by non technological students: trials and effects

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Abstract

In 1995 University Fernando Pessoa set, as a requirement for admission, that every first year student should have a laptop computer. The University offers courses in areas such as social sciences, psychology, management, literature, advertising, and engineering, and wanted its students to acquire the basic skills to use, interact and survive a information sea similar to the one that they will encounter in a information society environment.

In 1998 figures, half of the university population and 40% of the staff have their own laptops and a 400 "plug-in" network to support then. The laptop initiative his now a two years and half project. This paper discusses the impact of this kind of environment in the teachers' role in and out classroom. The discussion is centered in learning activities and in the potential impact on the students caused by teachers.

The experience

This paper is based on considerations that arise from a particularly experience that we conducted. The experience consists of using the university Intranet to base the majority of the project supporting materials in a web homepage where students can access. The student access is made to select the most adequate elements for their projects, assigments and establish class learning rhythm which the homepage is designed to support.

All the students can have access to the network via Web services at the university from Classrooms, Labs, and Library. Outside the University, via an Internet Service Provider, the way to communicate with the students was via publish the information and wait for their individual reaction to that. The project proposals are post on line as the clues to use them. The lecture time is used to conduct several simple tasks in order to introduce the web environment and introduce face to face topic discussions that leads to the need to conduct search, browsing and information structuring.

The class selected is Information Systems and was chosen in order to test the potential of the Intranet facilities (most of them accessed from a web browser), to soften the theoretical and descriptive bias of this content subject. Also, the courses selected belong to non-technical related student type, with little knowledge in the use of networks or Internet/intranet services.

This experiment has several goals in mind:

- promote the use of the intranet services and internet potential among students;
- training students to be more active and test their individual capacity to collect, browse search, and understand information;

- force students to manage their project submissions and impose time restrictions to present them;
- evaluate the amount of teachers work to support and maintain a homepage;
- evaluate alternate place/time to interact with the professor (in a classroom context).

The discussion will be conducted based on the following question: Can the presence teaching transforming itself, when using web based facilities, to meet some ODL requirements?

The results

Student side

The impact of this particular use of Intranet facilities was significant. Students involvement as been higher than the one from other equivalent classes. It also creates expectations for the use of their laptops in other University context from simple Intranet use to the use of hypertext as a better way to make general assigments and even answer exam questions (with the laptop help).

As a result of using Intranet facilities, students tend to classify their work in information systems as a practical one and to discuss concepts in a deeper way, comparing with other similar classes where these experiments aren't done.

The experiment has also some effect in the way students see their laptop computers, since they invest in memory upgrades to get the most of their computers and start to incorporate them in their activity as students (not just as word processing and simulation tools).

Teacher side

Some changes can be expected in classroom teacher's role. These changes can be stated as a general effect of more informed students, with more information available and more difficulties to them structure it. This can be seem as a great opportunity to teachers help students, organising the students own results and (as an important factor) by their demand. However, our class experience states that the more oriented approaches (like case studies or oriented tasks) seem to have less impact than open proposals to gather information and report results. This leads to the following question that requires further study: can the laptop use in classroom turn possible the increasing success in the making of active learning projects?

However, since each student has now his own available path to organise and operate his learning activity and use laptop in class on his own way, several problems may arise. These problems can result in new forms of amusement, classroom confusion, and dispersion. One funny effect is that new forms of noise communication between students arise (by the using of chat and network communication facilities! - extremely difficult to the teacher monitor without appropriate network tools).

What bring students attention from Internet services like chat, gaming and information, not necessary useful or dequate for the classroom purposes, to information activities topic and quality oriented. One can expect to involve students using some group techniques, collaboration and competitive tasks to coordinate activity in classrooms. What are the most useful computer tools to support that? Do we need to specify new computer tools to classroom use? Is the computer use possible in a natural way in face to face collaborative situations? Are the specifications for presence support learning electronic tools really different from the found in the ODL environments (where, how and why)? All this seems to be valuable research lines.

Classroom environment changes as teacher is no longer the single attention focus. Laptop and student interactivity with direct manipulation information resources brings new alternative focus that compete with the one provide by the teacher. We can pose an original and not usual question: can the teacher compete with the pedagogic tools that use in classroom?

This can be stated as the result of interactive computing with large amounts of accessible digital information resources freely accessed that need to be balanced with traditional forms of on class teaching activities. What this means in terms of teachers work to prepare their classroom activity?

This last point leaves to the need to alternative ways of organizing classes where the teacher needs to propose an agenda rather a mere list of exercises and activities. It seems that act as a coach is no longer sufficient to provide the best attitude when each student have their own laptops in classroom.

Our experience tell us that most teachers who use web facilities tend to post information as an complement to the more traditional media, because this means to learn other competences and, most important, this represents an enormous time investment, not normally considered as a pay work to the institution.

In that way, we consider the laptops use in classroom as a gradual evolution force to the teaching activities, but just in the long run. The need for better tools to support information and teaching materials as some form of technological scripts similar to the ones encountered in textbooks to the traditional classroom teaching is needed. Before the use of "*compubooks*" or "*digitalToolBooks*" (or Interbook, from Carnegie Mellon University) be seem as a potential resource to the teachers activities, some specialized work force (like publishers do in books) need to produce specific materials.

Its seems that still a point stays the same: the teachers are largely facilitators and performers, not creators, nor there this quality seems to be the most important one, in classroom.

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