

Assessing the Effects of Computers on the Teaching-Learning Process

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Introduction

In Mexico, during the last ten years, at least, a coalition of politicians, educators, parents and vendors have been pushing the idea of creating more access to new technologies (computers) in schools at all levels.

The arguments supporting the idea varies according to the groups; for example, politicians committed to social justice want to ensure that the new technologies will permit to offer education for all; specially for poor and marginal populations of children and young people in the country. Some educators see in the Web-based education a radical change in the teaching and learning process. Parents do not want their children to be out of the trend of the information technology revolution and vendors seek to profit, of course, from selling computers and software to the school market.

The result of this movement is that accesses to computers in schools have increased dramatically during the last ten years and the trend seems irreversible. And this is especially true in higher education institutions.

Underlying the arguments of all groups seems to be the belief that if computers and Web-based education are introduced in the schooling system, they are going to be used and if they were used, they would transform the quality of education. But, to what extent is that belief true?. Are teachers and professors using the new technologies for pedagogical purposes?. Are computers and Web-based education having a positive effect on the teaching and learning process?

This paper will try to give a preliminary answer to those questions, focussing mainly in higher education institutions, by examining some specific but

representative cases in Mexico. The cases will show the experience of those institutions in the use of new technologies on campus and on distance education programs.

The On Campus Experience

Today, it would be safe to say that students and professors, in most universities in Mexico, have access to computers. It would also be true that private universities have much more computers available than public ones. And among the private institutions the Tecnológico de Monterrey (Tec) and Universidad de las Americas, Puebla (UDLA) are the two institutions with the most computer equipment on campus.

Being this is the situation, it would be reasonable to look into these two institutions in order to find out the impact of computers on the teaching-learning process because no other institution in Mexico is offering such a universal access to students and professors.

The preliminary results of this study, however, are sort of disappointing. In one institution (UDLA) most of the professors and students use the computer 85 percent of the time as a word processing machine; to write papers and sometimes to prepare materials (hand outs and exams) for their courses. The other 15 percent of the time the use is for e-mailing, power point presentations and entertainment.

And yet, some intents have been made to use computers for pedagogical purposes. At UDLA, there is a kind of a close circuit system in which a professor teaches from a cabin (small room with cameras) and his image is send to two or three big classrooms full of computers. Students receive the image and sound of the professor's class and navigate in the Web

whenever the professor asks them to do it. The original idea of the project was to introduce students to the information technologies as learning tools. The students opinion, however, is that the system is too boring, specially because they know that the professor is right there on campus and they don't interact with him in person.

Another handful of professors at UDLA are using the computer to provide students with information of their courses; the objectives, the program of the course, the expected readings, the grades and homework; but nothing beyond that. And finally, those few that use the e-mail to answer students' questions.

In the other institution, (Tec) the results are more illustrating of the professors' resistance to use computers as learning tools because at the beginning, the institution provided incentives to professors to use the computers for pedagogical purposes but given that very few of the professors wanted to do it, the authorities decided to do it mandatory for all. Therefore now most of the courses that are taught on campus are also available on the Web as supporting material. Furthermore, students and professors are required to use a Forum and Chats to communicate among them. The result is that professors spend an average of 6 hours a week answering students' questions in addition to the time spent in class and preparing for it. Neither students nor professors are happy with the system.

The Off-campus experience.

Without any doubt, the "Tec" is the institution in Mexico with the most experience in Distance Education. They started about 15 years ago with Video and Satellite Dish to different parts of the

country and later on to Latin America. Then they experienced with Internet and Multimedia. This versatility of media might be one the factors to explain the success of this university with Distance Education.

Another factor is the different populations they served with their system; they have 39 undergraduate courses to offer in the different campuses in the country; so far, more than 5000 students have finished graduate programs, they offer isolated courses for teachers in basic education, employees in companies, government officials and general public. And they offer their Virtual University programs to 17 Latin-American countries.

One more factor that might explain their success is economics, most of their programs are affordable for most of the population they serve; for example, basic education teachers pay 30 dollars per course and the government pays another 30 dollars.

In short, this university has been very successful in quantitative terms. The pedagogical aspect, however, is definitely traditional in spite of the fact that the university announces a "constructivist approach".

Finally, the other university (UDLA) just started (two months ago) a graduate program via internet; a very modest one because it is basically text oriented, and with a traditional pedagogical approach. It is still too early to see results but the program already have problems of students and professors' complains; the former because of the boring pedagogical approach, the latter because of the time consuming answering students' questions.

Summing up, judging by the experience in the two Mexican universities, computers are far from the expected revolution impact on the teaching and learning process; if it ever happens to be.