WebCT: A Tool for Proselytism!

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Abstract

This short paper presents arguments to use TIC for teaching and learning. It starts with an overview of the environment that the education sector is currently facing, and then describes an experimentation with an actual Internet-based learning environment: WebCT. This research offers theoretical and practical foundations to promote this use.

Keywords: Internet-based learning environment, society, education, learning, WebCT, Technologies of information and communication (TIC).

1. Introduction

For quite some time, people in education have been tremendously interested in using the facilities provided by the technologies of information and communication (TIC). However, many teachers, as well as education and political leaders, do not seem completely convinced that software solutions may help them to meet their educational goals. On the other hand, we happen to have conducted a research experimentation with an actual Internet-based learning environment (IBLE): WebCT. This research tried to offer theoretical and practical foundations to promote the use of the TIC for educational purposes.

As a partial result of this research, this paper presents arguments to use TIC for learning. It starts with a presentation of the socio-economic and technological contexts in which the education sector is presently immersed. Then, it presents some existing links between education and TIC, and identifies tools and functionalities which, when present, should strengthen the capacity of an IBLE to meet educational expectations. Finally, this paper presents a broad outline of an experimentation with WebCT that we have conducted to identify its most important characteristics regarding key education-related needs.

2. Context in using the TIC

Many factors have an effect upon the use of TIC for education and training. Educational, social, economic, and technological contexts form the changing environment in which decisions about computerization of learning are made. The various aspects of this environment have been known and discussed for some time now, and we do not present them further in this short paper. Let us simply conclude that the new educational and most broadly social situation, but also economic imperatives and technological breakthroughs are major aspects of the present context for using the TIC in education. These aspects build an environment, which, we believe, is more than encouraging for experimenting with TIC as a part of the solution to education’s challenges.

3. Evolution of Education vs. the TIC

Many models were constructed to describe, explain, and understand teaching and learning. Among them, the exploratory approach, based on constructivism [1], can be adopted. In this model, the teacher is a facilitator, helping the student in his learning. Training is then developed in small groups, where students and the teacher are determining together the teaching content and rhythm, as well as the classroom procedures and the evaluation modes. Exchange and discussion are key notions in this model.

In this context, the TIC, particularly with innovations brought in by Internet, offer medias consistent with this approach. Now, to benefit from the characteristics and advantages of TIC, and mostly of the Internet, education and training must review their teaching styles. Indeed, learners now have access to other knowledge sources, and they want more interactions with their teachers. The latter must then adapt to this new pedagogy integrating TIC everyday [2].

However, this adaptation can stumble over many obstacles. To avoid this risk, teachers should be enticed to learn new Internet tools, to overcome resistance to technological changes, and to put an added value on their changing roles.

4. Tools and capabilities supporting the education process

To promote the use of IBLEs, human factors in software are as important as tools and technological functionalities or characteristics. Basically, we need the following tools and functionalities, reported by the French Education Ministry, depending on each wide user category.

To the teacher, the product should give ways to:
- develop pedagogic content and stream;
- individualize his or her teaching;
- incorporate pedagogic multimedia resources;
- monitor the students’ learning activities.

To the students, the software should provide:
• on-line or off-line (by download) access to contents;
• ways to organize and visualize their work progress;
• self-paced exercises, auto-evaluation and transmission of their work to be corrected.

To the teacher and students, the product should give interactive exchange capabilities via:
• student-to-student and student-to-teacher communication;
• the creation of discussion forums (e.g. theme-based);
• collaboration between students to common projects.

The software should also account for the needs of the technological administrator:
• ease of installation and maintenance;
• management of access rights;
• communication with the institution information systems: registrar, libraries, etc.

At last, three musts of this technology are of use to all:
• to be based on Internet technologies;
• to be accessed through the standard telephone network;
• to avoid the installation of any specific software on the student’s workstation.

Many commercial softwares abide by these characteristics [3]. WebCT, a leading software on the market, is our preferred choice. It allows teachers, with or without technological know-how, to create courses using Internet functionalities and protocols. It takes in charge various roles (a role is a set of functionalities that a user can access), like: teacher-conceptor, student, guest, tutor, and technological administrator. Depending on to these people’s respective responsibilities, WebCT can offer functionalities related to: content development, pedagogy, supervision of learner’s participation and progress, learning, planning, and student–teacher–student(s) interactions.

The teacher-designer of the course uses a Web browser-like interface to connect to a WebCT server, on which his or her course is thus made available. This course content can make use of all medias supported by Internet standard protocols, and its visualization is made using existing Web browsers. Once a course has been developed and made available on the WebCT server, students can access it using their preferred Web browser.

According to WebCT Inc., the software was used by more than 3.6 millions students in September 1999, for 97000 courses offered by more than 800 colleges and universities spread in more than 40 countries.

5 . Outline of our experiments with WebCT

In our research work, we have conducted a few experiments with WebCT. In order to do so, we installed the software on a Linux workstation, and we created a first typical training set of about ten Web pages.

Results

This first experiment showed us that:
• reusing existing digital educational material is easy;
• directive and explorative pedagogical approaches can be tried, in line with students’ and teachers’ expectations;
• the student’s responsibility toward his or her learning is increased, because (s)he must be effectively involved to exploit the WebCT capabilities;
• the teacher can become a guide, thus escaping from the traditional master to students relationship.

These advantages do not cost too much! It took us:
• for software installation: one hour and a half;
• for the creation of a typical training set (10 Web pages) from artefacts existing as HTML pages: three hours;
• for the WebCT creation of accounts for three test students: half an hour.

Discussion

For the teacher-designer, the pedagogical utility of WebCT, in our opinion, is multiple.
• Experimentation with different modes for preparing typical training sets (alone, in a team of teachers, etc.) is facilitated by the digitalisation of pedagogic contents.
• Easy browsing, by fellow teachers, of the content made available on WebCT facilitates professional exchanges.
• A product like WebCT contributes in developing the students’ capacity for autonomous learning.

For the learner, we think the didactic pertinence of this software is of utmost importance.
• The student’s personal development is effected not only with knowledge (knowledge acquisition), but also with know-how (application of that knowledge, in particular to problem solving) and with know-how-to-be (via interactions with other students and with teacher) using appropriate WebCT tools or functionalities.
• The learner develops his/her capacity to use adequately and efficiently the available computerized research tools.

6 . Conclusion

Still today, many teachers, education and politic leaders, do not seem to be fully convinced about the educational advantages of TIC. That is why our intent was to present arguments to promote using these technologies for educational purposes. To do so, we covered theoretical and practical arguments. Besides, the first results of our experiments with WebCT have revealed many advantages that teachers and learners could grasp from using TIC for learning. By its installation like by its operation, WebCT could contribute to lower the reluctance sometimes encountered in the education domain.

6 . References


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