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WHAT STUDENTS THINK ABOUT AND DO ON THE WEB?
AN ANALYSIS OF THEIR ATTITUDES, THEIR BEHAVIOUR AND THEIR INTERACTION ON THE WEB

In recent years Information and Communication Technologies (ICT) have become very important in Distance Education and Training. This fact has raised new interests and frontiers for some classical theoretic approaches of developmental psychology. If the educational software was a fertile subject for the behaviouristic paradigm (e.g. researches in the field of *Computer Assisted Instruction* and *Computer Based Training*) and the cognitivistic paradigm (particularly in regard of *Human Information Processing* and the research field of *General Problem Solvers* and *Expert Systems*), the Web technologies represent a new interesting subject for the piagetian constructivism, for the vygotskian socio-cultural constructivism and zone of proximal development, for the collaborative learning and for a fascinating revisiting of the activity theory formulated in the first half of the previous century by Vygotsky and Leont'ev (Kaptelinin, 1996; Engeström, Miettinen, Punamäki, 1999).

In this field, the researches have concerned mainly & al. people's attitudes and opinions in regard of technologies, the interaction on the Web, and the aspects of pertextual navigation that support knowledge transmission. Unfortunately, very little space has been devoted to the activity during the navigation on the Web systems proposed for their formation, the analysis of the Web resources they have used, and to the frequency of use of these resources. Some obstacles for analysing these aspects are the intrinsic limits of the survey methods adopted. The principal methods used by researchers have been the observation, the interview and the questionnaire (e.g. the researches by Light & Light 1999 and by Perret & al. 1998).

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Observation allows an accurate description of the subject activity, but this method is invasive and hardly usable with large population groups. The interview and, particularly, the questionnaire allows to collect data from large groups of subjects, but there are many doubt about the correlation between the remarks of the subjects and their actual behaviours.

A tool that could overcome these problems is the Server's Log File, typically used in Information environments for analysing and managing the Web systems. Unfortunately, also this method proposes some problems that seem not very simple to solve (Carugati, Mazzoni, 2002): data about the use of a Web system are not complete and so it is difficult, if not impossible, interpret the subject behaviour. How to solve this problem?

The present research has been conducted at the Faculty of Psychology of University of Bologna and concerned the students of the academic course of Developmental Psychology in two different years (2000-2001 and 2001-2002).

At first, all the students have answered a questionnaire on their attitudes about Web technologies and, particularly, the use of these technologies for learning and training. Their answers will be analysed with regard to their auto-evaluation of expertise with computer and Web technologies. In a previous research, Warschauer (1996) showed that the expertise level perceived, together with the competence with some informatics software, had an influence on the attitudes about these technologies.

The author concluded underlining the need of investigating and verifying what their research illustrated. The first aim of this research starts from here, so we want to verify that the expertise auto-evaluation with some informatics software and Web technologies have a significant role in determining the attitudes of the students about this technologies and their will to utilise during their studies.

Secondly, we want to observe if there is some correlation between this attitudes and purposes and actual behaviours. For this, we have constructed a Web site, which has a lot of learning and training resources for the students of the academic course of "Developmental Psychology" at the Bologna University. For this purpose, we have defined some usability heuristics for a usable Web site, principally for facilitating the students' netsurfing. The learning and training resources proposed to the students are:

– *DevelopmentalWeave*, a service via e-mail for informing the students

about the news of the course and of the contents in the Web site;
- *Course's Notes*, the notes of the course and the slides showed during the lessons, with links to other Web sites prestige the theories and authors proposed;
- *A Question to the Prof.*, a service of F.A.Q. (Frequently Asked Questions) with the answers of the professor;
- *BiblioWeb*, presentation of a lot of Web sites concerning the developmental Psychology;
- *ScriWeb*, an on-line discussion forum for the students.

Starting from the functioning principle of the Log File, we have attempted to eliminate their imperfections and we have elaborated a solution that, by an appropriate construction of Web pages, allow us to obtain an exhaustive and reliable photo-gram of the resources that students have accessed during their netsurfing on the Developmental Psychology site Web. The data collected concern usage frequency, times and modality of all the resources proposed in the Web site, by reflecting the netsurfing made by every student. This data, organized in a database and associated with the other coming from the Log File, allows a deep analysis about the students netsurfing and usage of an educational Web system and a fast and simply transformation in SPSS electronic datasheets on which it is possible to make a statistical analysis.

Another aim of this research is the analysis of the students' interactions on ScriWeb, the on-line discussion forum. This analysis will be both quantitative (number of messages) and qualitative (typology and contents of messages). In this case, we are interested in the influence that different conditions have on the on-line interaction. In fact, for the forums of the two years we have considered three different conditions:
- period in which the forum place (end of the course vs. start of the course);
- reinforcement by virtual students vs. not reinforcement;
- Active interventions of the moderator vs. only control.

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