Two-year use of WebQuest at the university to foster the Bologna process

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Abstract: As it is well known the current Bologna process, which targets at convergence of European university teaching, proposes a new methodological approach. It converts a teaching-based education system into one based on learning. WebQuest is one of the activities that makes an effective use of Information and Communication Technologies and that may favour the starting up of the Bologna process. This paper analyzes the use of WebQuest to jump-start the methodological change that the European convergence process implies, specifically self-regulated student learning. It is analyzed from this perspective the results from a university experience undertaken during two academic years (05-06 and 06-07) in the "Instructional Design" course (1st year Education studies). First, methodology and results from the study are presented. Second, the most important conclusions from the use of WebQuest to foster student autonomy, active methodologies, and the professor's role as creator of learning environments are analyzed.

Introduction

The current European convergence process sets up a new methodological approach, which transforms a teaching-based education system into a learning-based education system. The Information and Communication Technologies (ICTs) may become a useful resource to foster the student's autonomous work beyond the mere elaboration of class notes during a lecture. WebQuest is one of the activities that makes an effective use of ICTs and that may favour the starting up of the Bologna process (Dodge, 1995). The framework proposed by WebQuest has been classified by their authors as one of structured research. It is precisely the structure and guidance that define this methodology what aids and supports the student's autonomous work. It may be said that this methodology assumes the hypothesis of self-regulated learning, as well as the processes that govern it (Zimmerman and Schunk, 1989; Pintrich, 2000; García Manzano, 2005). In order to foster this type of learning, it is necessary to supply guides or scaffolding, so that the student works in an autonomous way (Torrano and González-Torres, 2004). As some studies point out, scaffolding is an essential element in a WebQuest (March, 1998; Dodge, 2001; Angeli and Valaindes, 2004; Ge and Land, 2004; MacGregor and Lou, 2004).

Goals

This paper analyzes the use of WebQuest to jump-start the methodological change that the European convergence process implies: an education system based more on student learning more than on teaching by the professor. According to the Spanish Ministry of Education and Science (MEC, 2005), this convergence process is based on three principles: a) greater student implication and autonomy; b) use of more active methodologies (case studies, work in groups, tutoring, seminars, use of Information and Communication Technologies); and c) the role of the professor as creator of learning environments that stimulate students. From this perspective, results from a university experience undertaken during three academic years (04-05, 05-06, and 06-07) in the "Instructional Design" course (1st year Education studies) are analyzed.

Method

Description

During the first semester of the 04-05 academic year, a WebQuest was created to guide students in the "Instructional Design" course (1st year Education) in the elaboration of a Instructional Planning. During this course no student opinions were systematically collected, although the experience was useful to improve some points for the 05-06 and 06-07 years. Specifically: a) move the WebQuest from Intranet to the Internet so that it was off-campus accessible, b) add in the "resources" part of the WebQuest output from previous years, and c) elaborate an evaluation ques-

tionnaire to collect student opinions in a systematic way, as well as time devoted to the elaboration of the planning.

The WebQuest is named "Learning to make a Instructional Planning" and it is divided into the following three parts: Introduction, Task, Process, Resources, Evaluation, Conclusion, and Didactic guide [http://www.unav.es/educacion/didactica2/TRABAJO/PlanificacioNDidacticA.html]
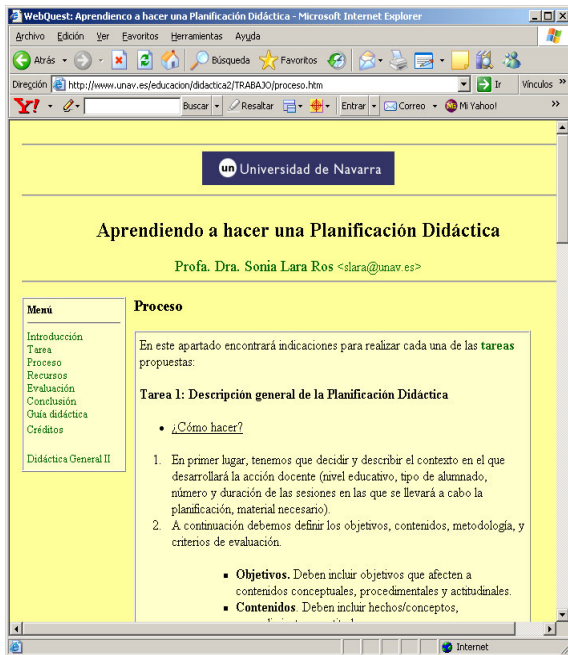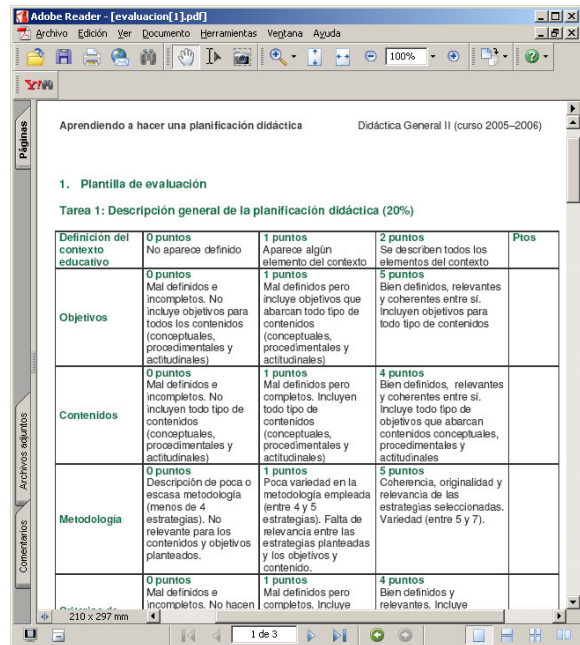

Image 1: Process Section

Image 2: Evaluation form

Applying WebQuest

The WebQuest is presented to the students in class, during the study of the making of a Instructional Planning. Students are told that they have to prepare a planning for several topics within a course to choose from the Primary or Secondary curricula. The task must be performed in groups of two to four students, and turned in two weeks before the end of the course. Those students that wish to may attend tutoring sessions with the professor on specified dates. The purpose is to work in a progressive way and to avoid procrastination. In total, opinions from 18 students in the 05-06 year and 16 students in the 06-07 year are collected. All the groups, in both years, perform the task in a progressive way and attend the voluntary tutoring sessions.

Measurement

We employed a questionnaire initially elaborated to evaluate the effectiveness of WebQuest in Secondary school, and adapted to the needs and characteristics of the present study (Lara and Repáraz, 2005, 2007). It is divided into three parts that included questions on a five-point scale. The first part analyzes some features of cooperative work. The second part analyzes the overall evaluation that students give regarding working in groups and with the aid of the WebQuest. The third part collects the valuation of the WebQuest made by students. Reliability (Cronbach's Alpha) is 0.75.

Results

The WebQuest was applied in the same way throughout the 04-05, 05-06, and 06-07 years. The difference is that in the latter two years student opinions were collected by means of a questionnaire. We summarize the results obtained in the last two academic years. More detail about 05-06 year in Lara (2007).

Features of cooperative work

Overall, and analyzing the results, it could be stated that students have the perception of having worked in a cooperative way. No significant differences have been found in the answers given by students in the two years, although, as it may be seen in question 9, the average has improved (see table 1). At the same time, most students answer the questions saying that they have always or frequently worked in this way (see figures 1 and 2).

Preguntas/Respuestas	Curso 05-06			Curso 06-07		
	n	$\overline{X}$	SD	n	$\overline{X}$	SD
1. I listen to, and respect, the ideas of others	18	4,61	0,50	16	4,44	0,73
2. I share the load of the work	18	4,22	0,54	16	4,5	0,73
3. I value the contributions of the others members of the group	18	4,61	0,50	16	4,5	0,63
4. I help in seeking solutions; I make suggestions	18	4,06	0,63	16	4,19	0,75
5. I share my information and take into account the information of others	18	4,61	0,69	16	4,62	0,62
6. I have good ideas; I am constructive	18	4,11	0,67	16	3,87	0,72
7. I resolve conflicts in a positive manner	18	4,17	0,70	16	4	0,97
8. I contribute towards making each member of my group do his set piece of work	18	4,06	0,93	16	4,12	1,02
9. I help the group find errors and/or mistakes	18	3,83	0,78	16	4,37	0,96
10.I have made positive contributions to the group	18	4,11	0,67	16	3,93	1
11.I am happy about the success of the group	18	4,61	0,85	16	4,5	0,89

Table 1: "Features of coopearative work" during the 05-06 and 06-07 years
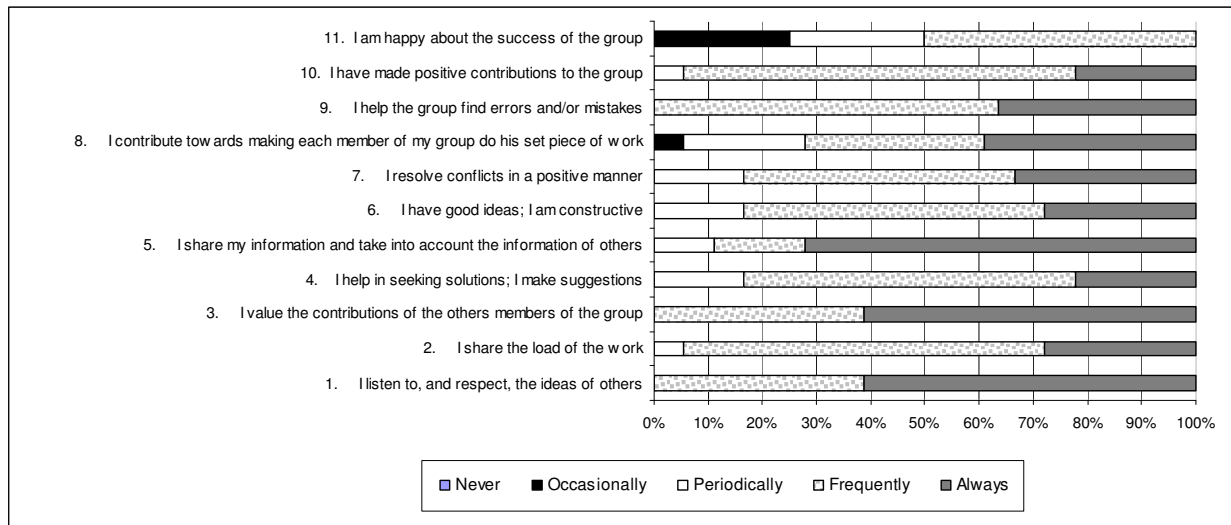

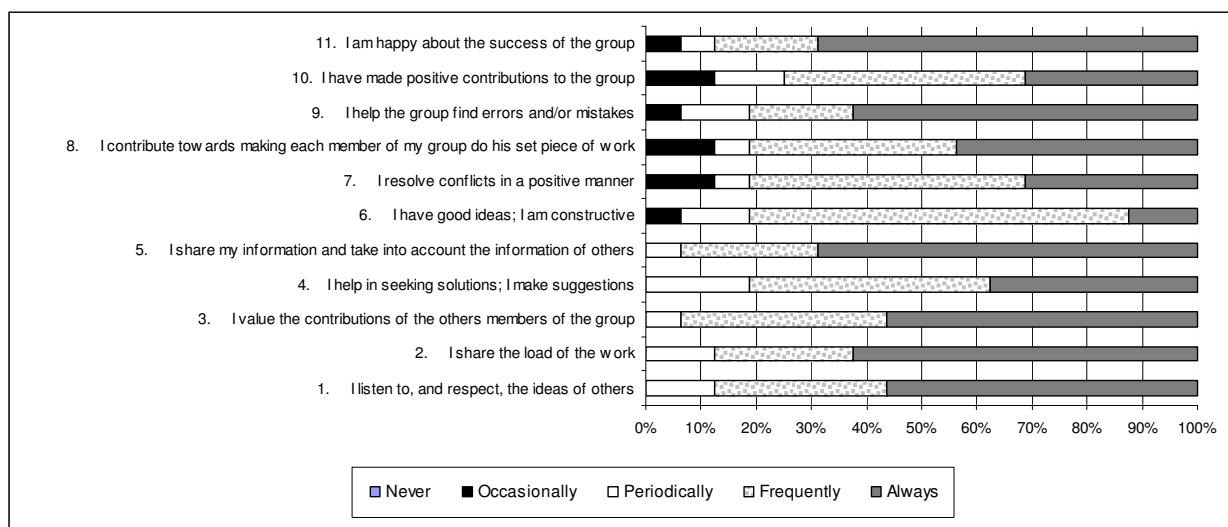**Figure 1:** "Features of coopearative work" during the 05-06

Figure 1: "Features of coopearative work" during the 06-07

Overall evaluation

It may be said, from the results obtained in the two years, that students give a positive evaluation of the work carried out to understand what is a instructional planning (question 15), as well as the voluntary tutoring sessions to answer questions (question 16), see Table 2. No significant differences were found regarding answers given by students, although it looks like in the 06-07 year students did not give such a positive evaluation for group work as in the 05-06 year (question 14).

	Year 05-06			Year 06-07		
	n	$\overline{X}$	SD	n	$\overline{X}$	SD
12. The realization of my role in the group has been	18	3,44	0,61	16	3,5	0,82
13. My contribution toward the group's success has been	18	3,44	0,78	16	3,5	0,73
14. This way of learning in group, as opposed to individua work, is	18	4,11	0,75	16	3,5	1,09
15. This way of learning has helped me to understand what is a Instructional Planning	18	4,22	0,73	16	4,25	0,68
16. The tutoring sessions has been	18	4,28	0,66	16	4,31	0,79
17. The instructions given in the web has been	18	4,33	0,68	16	3,87	0,71

Table 2: "Overall evaluation" during the 05-06 and 06-07 years

Evaluation of the WebQuest

Every section in the WebQuest has been positively evaluated, in the neighborhood of 4, "very good" (see table 3). No significant differences in the answers given in the two academic years have been found.

	Year 05-06			Year 06-07		
	n	$\overline{X}$	SD	n	$\overline{X}$	SD
Process	18	4,06	0,72	16	4,06	0,77
Rubrics (Evaluation)	18	4,17	0,61	16	3,81	0,98
Resources: Works done in former years	18	4,39	0,85	16	4,06	1,18

Table 3: "Evaluation of the WebQuest" during the 05-06 and 06-07 years

Figure 3: "Evaluation of the WebQuest" during the 05-06

Figure 4: "Evaluation of the WebQuest" during the 06-07

Conclusions

It was pointed out at the beginning of this paper that the Spanish Ministry of Education and Science (MEC, 2005) maintains that the convergence process is based on three principles: a) greater student implication and autonomy; b) use of more active methodologies (case studies, work in groups, tutoring, seminars, use of Information and Communication Technologies); and c) the role of the professor as creator of learning environments that stimulate students. Taking into account these necessary principles and our two-year experience using WebQuest, we may advance that:

1. The WebQuest, through the guides offered in the "process" and "evaluation" sections helps students to work in a more autonomous and active way. Student perceptions seem to suggest this, since they state, on the one hand, that they work well in groups, and on the other, when they make a positive evaluation of help provided by the WebQuest. This perception is shared by the professor when comparing the way students worked in the last three academic years with previous years. Both the quality and the autonomy and efficacy of student work has been significantly increased.

2. The use of the WebQuest has implied –although this was not an initial goal- offering better tutoring, which was useful and valuable for student learning. Students went to office hours given that evaluation forms (rubrics) and procedures posted on the WebQuest. With this information at hand, students asked about anything they were not able to figure out. This way, students took advantage of the opportunity of solving problems in a precise and concise way, leaving no room for vagueness. Furthermore, the WebQuest has been useful to make students learn part of course goals and competences, since they perceived that this procedure help them to learn what instructional planning was about.

3. The WebQuest methodology demands a very good elaboration of this material. The most difficult part to prepare was the evaluation form (rubric), which ended up being of great help both for tutoring and for the final evaluation of students. The evaluation form was extremely useful for students to carry out the task, and for the professor, to make grading as objective as possible. Furthermore, it allowed for advising on works more focused on those facets that were not well developed.

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