WebQuest in the Classroom – Analysis of its Impact

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This work presents the great impact of the WebQuest technique in the classroom, based on the analysis of the evaluation questionnaires provided by the teachers who attended the on-line course "About WebQuest" developed in the frame of a Socrates Comenius 2.1 European Project. The paper emphasises some aspects related to the importance of the WebQuest technique for the teachers, the improvements gained in the teaching and learning process from the quality point of view, the obstacles met during the implementation process and some facts about time perspectives for implementing WebQuests in the classroom.

Keywords WebQuest; Impact; Teacher Training; Socrates Project; Comenius 2.1

1. Introduction

CFIE Valladolid II from the Consejería de Educación de la Junta de Castilla y León, and Science of Systems, Automatics and Informatics Department of Valahia University Targoviste are participant institutions in the Socrates Comenius 2.1 European Project called "Think, Construct and Communicate. ICT As a Virtual Learning Environment" -http://cfievalladolid2.net/thinkweb-, being the first one the designer and coordinating institution of the project. The main purpose of this project is to promote the cooperation between different European teaching and educational entities (Infant School, Secondary School, High School, Teacher Training and University) by means of the world wide web to produce and disseminate a WebQuest [1] based on-line course to train teachers (about 300 from different schools around Europe) with the objective of stimulating a didactic use of the Web. Eight institutions from five countries (Finland, Italy, Poland, Romania and Spain) participate in this three year project started in 2002.

The duration of the on-line course "About WebQuest" was approximately 40 hours, with initial and final face-to-face sessions for evaluation. Every activity of the course was combined with specific tasks. The participants solved those tasks and presented their solutions and results both on working in a cooperative way - in their own folders - and on the discussions initiated by the tutors. All the work was done through BSCW as a collaborative platform [2]. Finally, as the on-line course activities were achieved, the participants tried to develop and finalize a WebQuest Project in their specific area of teaching bearing in mind each National Education Curricula.

2. Materials and Methods

2.1 WebQuest and educational techniques

There are some important papers on Internet regarding WebQuests but Bernie Dodge, the parent of WebQuest, made the essential description of the technique. He defined a WebQuest as "an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet." [3].

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WebQuests are used to achieve the best use of learner's time, knowledge acquisition and integration and extending and refining knowledge. After working with a WebQuest, learners will have grappled with a significant amount of new information and made sense of it [3]. WebQuests help the participants in meeting standards concentrated on both critical-thinking and analysis skills. Based on ideas of inquiry and constructivism, WebQuests involve cooperative learning, students having to work on projects in groups. In addition, there is a strong connection between WebQuests and multimedia techniques, which leads to an important opportunity for using the Internet in education.

A series of web pages presents the technique and offers many examples. However, making a better documentation about WebQuest should start from the most popular web site oriented on the presentation of the technique – http://webquest.sdsu.edu/. Many examples can also be found here grouped in top and middling matrix on different areas and levels.

2.2 Organising of the on-line course "About WebQuest"

The on-line course "About WebQuest" developed in the Socrates Comenius 2.1 European Project entitled "Think, Construct and Communicate. ICT As a Virtual Learning Environment" has been created for the first time as a English version with a 30 hours duration. It was developed with teachers from primary, secondary and high schools and also with future teachers (students from universities). The English version of the on-line course was translated and adapted to the characteristic features of the educational system from each country involved in the project. This on-line course was held through the Basic Support for Cooperative Work platform (BSCW). Due to this reason, the partnership of the project decided to extend the duration of the on-line course in 10 hours, allocated to a short description about working on BSCW. The content of the on-line course comprised activities devoted to the introduction of the BSCW functions, WebQuest methodology and WebQuest structure: introduction, task, sources of information, process, evaluation and conclusion. In addition, initial and final evaluation questionnaires were included. To accomplish the on-line course objectives every teacher had to design an original WebQuest connected with his teaching area. The connection between tutors and learners was also held on the BSCW. The learners also had to solve specific tasks, to share their experience with the other participants, to discuss about specific topics through the e-learning platform.

3. Results and discussion

Every partner of the project developed two editions of the on-line course. In these two editions, 323 participants were involved but only 185 learners have reached the course objectives. The third edition of the course is also under development at this time in all the partner institutions. After the first edition, the on-line course syllabus was increased and for the third edition, a free platform version of the course was created.

Most of the teachers who attended the course implemented their WebQuest in the classroom and completed the Impact Form created by the partnership in the frame of the project. Statistic results of those Forms are presented below.

The implementation of the WebQuests in the classroom was made at all the levels of education: kindergarten, primary school, lower secondary school and upper secondary school. More than 3000 pupils were involved in this process.

Trying to express what the WebQuest technique means for each of them, the teachers had to quantify the WebQuest technique as a source of inspiration. The statistics resulted from the teachers' answers are presented in Figure 1 and reveal that 83% of the teachers found this technique a good and even an excellent source of inspiration. This huge percentage shows that the great number of WebQuest examples from different areas and for different levels of education presented as links in the on-line course units constituted a powerful database in which every teacher found ideas to develop new ways for teaching which are distinct from the traditional ones. At the same time 16% found this technique a satisfactory source of inspiration and just 1% of them were not satisfied by this technique.

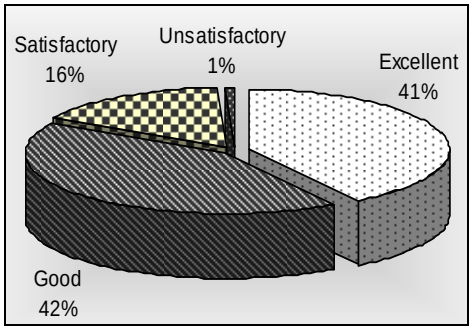

Fig. 1 Rates for WebQuest as a source of inspiration for the teachers

Figure 2 shows the teachers' opinions regarding the WebQuest technique as a learning and teaching method. It could be seen that the WebQuest technique is a very good learning method; most of the interviewed teachers (94%) declared this technique as giving excellent and good results. On the other hand, as a teaching method, WebQuest technique is seen in another way, just 13% of teachers declared this method as excellent and 40% of them found the new technique as a good learning method. Other 47% of teachers were just satisfied or unsatisfied by the new technique. These statistics may be performed in connection with the teachers' skills for managing the computers in the classroom. Some of them had heard about the e-learning methods but they are not very good in using computers and more, they are afraid of implementing new IT based methods in the classroom.

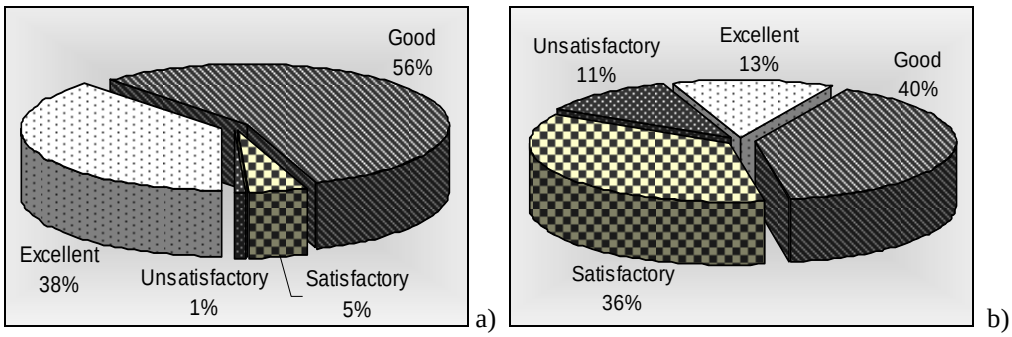

Fig. 2 Rates for WebQuest as a learning (a) / teaching (b) method

Analyses of the WebQuest as a method that integrates the Internet in the learning process and improves the pupils' learning skills are presented in the figure below. Figure 3.a. illustrates that 71% of the teachers considered this method as an excellent or good integrator of the Internet in the learning process. It is remarkable the fact that almost 50% of the interviewed teachers found WebQuest an excellent way to involve Internet in learning. In this way, pupils could discover Internet as an alternative source of information. However, especially at the primary level of education, Internet resources might be combined with books and other documents physically available in the learner's setting. On the other hand 29% of the teachers found the WebQuest just as a satisfactory method for the Internet integration in learning. This fact could be explained by the lack of the web resources, especially in some national languages (Romanian and Polish for example) related to the pupils' knowledge. At the same time, nobody found this technique as an unsatisfactory method for integrating Internet in the learning process.

Figure 3.b. presents that 86% of the teachers considered the WebQuest as an excellent or good method for improving the learning skills and just 16% as a satisfactory one. This statistic is correlated with the pupils' learning results and due to these good results most of the teachers found this technique as a good or excellent learning method (as it was presented in the Figure 2.a.)

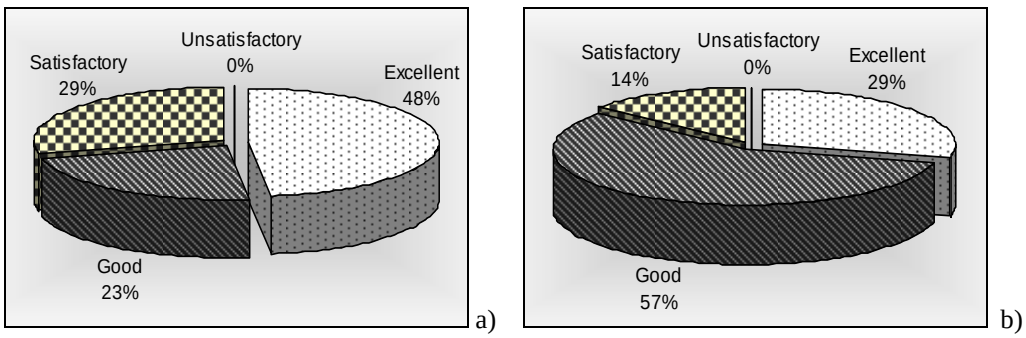

Fig. 3 Rates for WebQuest as a method for integrating Internet in the learning process (a) and for improving the learning skills of the pupils (b)

Regarding the improvement of the quality of some aspects as students' behaviour, teaching behaviour, classroom organisation, cooperative work, learning products and pupils' motivation, Figure 4 shows that the greatest gain of the WebQuest implementation was obtained in pupils' motivation and cooperative work. This fact is reasonably justified through the involvement of the pupils as actors in the learning process, assuming different roles in the team designed in the frame of the WebQuests. The results were seen, on the one hand, in the increasing of pupils' motivation and, on the other hand, in working as a team with a clear purpose - solving the group tasks. Pupils became enthusiastic playing a specific role and relaying on the group partners, learning easier in this way.

A good improvement is also observed at the level of students' behaviour, teaching behaviour and classroom organisation. At the same time, the teachers did not find any decrease in the quality of the mentioned aspects.

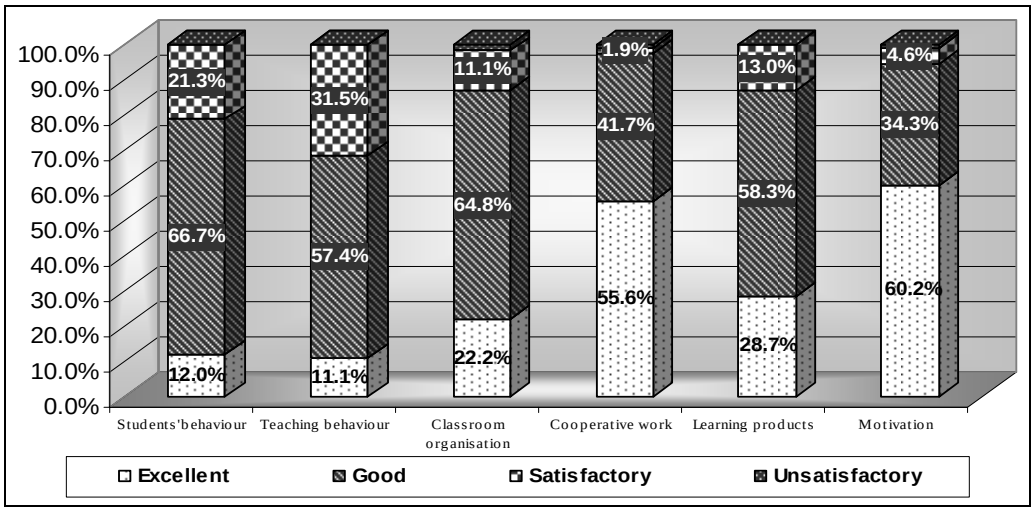

Fig. 4 Statistics on the quality improvement for different aspects through the implementation of the WebQuest in the classroom

During the implementation process, teachers had encountered few obstacles in class organisation, following activities, using resources, standards accomplishment, evaluation and management of the classroom. Figure 5 presents the frequency of those obstacles. Less than 10% of the teachers met some problems very often and almost 20% met them often. It is remarkable that about 80% of the teachers declared that they had not encountered any problems or they were just scarce. In any case, most of the obstacles were met related to the use of resources due to the Internet connection.

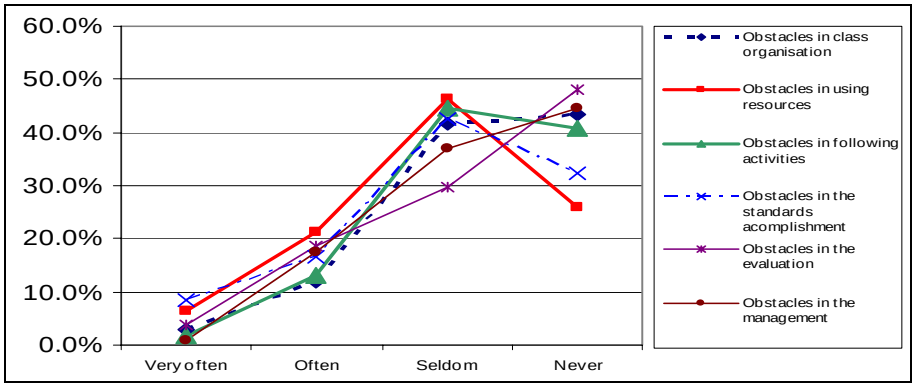

Fig. 5 The frequency of the obstacles met by teachers during the implementation of WebQuests in the classroom

Finally, Figure 6 illustrates the teachers' intentions regarding the frequency of using WebQuest in the future for teaching purposes. 10% of them think that they will use WebQuest once per year. This low percent is justified by the implementing of their long-term WebQuest (up to three months duration). The other 90% are split in three parts – almost equal – having the opinion that the WebQuest may be implemented once a semester, more often within a semester or as often as they find it necessary.

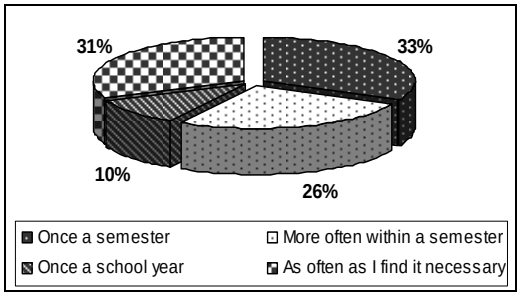

Fig. 6 Teachers' intentions concerning the frequency of using WebQuest in the classroom

4. Conclusions

The WebQuest technique involves cooperative learning and forces students to work on projects in groups. The results of its impact in the classroom proved that WebQuest is an important source of inspiration for the teachers, a suitable teaching and learning method and a way for integrating Internet in learning. One of the greatest gains of the WebQuest implementation was obtained in pupils' motivation and cooperative work. Only very few obstacles were met by the teachers in the implementation process. Due to all these advantages most of the teachers decided to extend the use of WebQuest in the future.

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