THE BSCW SYSTEM – A REAL SUPPORT
FOR THE FISTE PROJECT ACTIVITIES

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Abstract: BSCW (Basic Support for Cooperative Work) system is an extension of a standard Web server through the server CGI Application Programming Interface that can manage a number of shared workspaces for different groups of users. The system was chosen and used as a working platform by the partnership of the Comenius 2.1 European Project FISTE (“A Future Way for In-Service Teacher Training Across Europe”). This paper presents different rates on using the BSCW platform during the whole life period (three years) of the FISTE Project (between January 2005 and December 2007).

Keywords: BSCW, cooperative platforms, Comenius 2.1. European Project.

1. INTRODUCTION

The BSCW Platform is a WWW based groupware system developed at GMD's Institute for Applied Information Technology (FIT) which proposes a system of "shared workspaces" where a group of distant partners can share information with the aid of a standard web browser. The meaning of the acronym was changed recently to Be Smart - Cooperate Worldwide, as a global recognition of its power and facilities.

Using the World-Wide Web as its infrastructure, BSCW supports synchronous and asynchronous cooperation in workgroups. Groups may be established ad hoc, with members distributed geographically, coming from different organizations and using different types of computer systems. Based on the concept of Shared Workspaces, BSCW provides core functionality for (BSCW - EduTech Wiki Webpage [1]):

- jointly creating, managing and sharing documents within a group;
- real time or deferred awareness;
- preparing and initiating synchronous cooperation.

Due to its generic and flexible approach BSCW has been successfully applied in different settings. In the educational arena, BSCW has been widely used for promoting group work among students. Project-based learning is an immediate application of BSCW in educational environments because encourages and facilitates interactions among participants (Lopez et all [2]). BSCW has become popular in university education, in particular to support blended learning. More than that, BSCW is known as a good instrument used for supporting collaboration in the educational projects. There are several educational projects that embraced this platform and reported good results and benefits.

2. THE FISTE PROJECT

The Project “FISTE - A Future Way for In-Service Teacher Training Across Europe” (118766-CP-1-2004-1-RO-COMENIUS-C21- http://fiste.ssai.valahia.ro) was coordinated by Valahia University of Targoviste, Romania and involved 7 educational institutions from 5 different European countries (Romania, Spain, Finland, Iceland and Latvia). It started on the 1st of October 2004 and finished on the 31st of December 2007.

The overall aim of the project was focusing on finding new ways of how to teach in-service teachers in their long-life training programs and how the teachers themselves can learn and upgrade their knowledge and teaching methods by using ICT. The attainment of this aim involved the achieving of the following specific objectives (FISTE Project Webpage [3]):

- developing methods for integrating ICT tools with the face-to-face learning methods in the teachers’ daily work;
- applying methods for teaching in various learning environments (cooperative platform, Virtual Reality environment, Videoconference environment);
- improving in-service teachers’ using and understanding of ICT for supporting their own work in meaningful ways;
- developing the European cooperation and awareness;
- improving the research base of knowledge about how to integrate face-to-face learning with web-based learning in European initial and in-service teacher education;

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disseminating the results of the project at local, national and European level.

The target groups that the project was aimed at had the following structures:

- 245 initial and in-service teachers from the partner countries - who discovered new ways of working and using ICT with the view of integrating the presented technologies in traditional training (cooperative platforms, Multimedia techniques, Virtual Reality, videoconference). In this sense, they attended the on-line course “Integrating ICT in Traditional Training” which also guided the participants to construct their knowledge and become autonomous and creative in their learning;

- 57 European Educators from different countries of Europe (Bulgaria, Estonia, Finland, Iceland, Italy, France, Hungary, Latvia, Malta, Poland, Portugal, Romania, Spain, Sweden, Turkey) - who benefited from this experience by following the in-service teacher education course for European educators “ECSUT – Educational Challenges & Solutions in Using ICT”.

The methodology used for reaching the overall aim of the Project was based on emphasizing the social interaction, particularly on the cooperative and collaborative learning. The BSCW system assured the promotion of both types of learning, allowing the participants not only to attend the on-line courses but also to have the opportunity to work together with their colleagues to enhance communication and collaboration for an interactive learning experience.

3. FACTORS THAT INFLUENCE THE BSCW USING

Having as one of the Project objective to provide the cooperation among the partners with a shared workspace on the Internet, the partnership of the Project decided to install and use a BSCW shared platform on a dedicated server, at the coordinating institution. The BSCW system was set up in January 2005 and it ended its use for the project purposes in January 2008. With the view of obtaining the best results, the system that supports the platform application must be operative and stable in time. In this sense, it had to take into consideration a series of factors which influenced the use of the cooperative platform (Bizi et al [4]):

- **hardware architecture**: the server machine must have some capabilities to support the software required by the BSCW platform and the platform application itself. The number of users is an important aspect which has to be taken into account. In the frame of the FISTE Project, the hardware machine was an IBM xSeries 206 Server with Intel Pentium IV CPU, 1 GB RAM, three SCSI hard drives and one gigabit network interface. This hardware architecture was sufficient for the 300 users, allowed by the BSCW licence.

4. RESULTS AND DISCUSSIONS

All the transactions made on the BSCW platform, during the Project life, were recorded in the log files by the web server. In addition, the files were analyzed using a software program that generated graphical representations and HTML files which presented the web site activities. The resulted files are available for consultancy on the web, at the following address [http://usage.ssa.valahia.ro/webalizer/bscw/](http://usage.ssa.valahia.ro/webalizer/bscw/). The free software used to generate the mentioned statistic web pages is called Webalizer and can be downloaded at its homepage: [http://www.mrunix.net/webalizer/](http://www.mrunix.net/webalizer/).

In the following sections a series of statistic information regarding the using of the BSCW platform in the frame of the FISTE Project is presented. The representations cover the whole effective life of the project (January 2005 - December 2008).

4.1. Total visits per month
The number of visits represents a series of requests from the same uniquely identified client with a set timeout. A visit is expected to contain multiple hits (in log analysis) and page views. Figure 1 illustrates the graphical representation for the number of total visits per month.

It is evident that the number of visits runs high in time. The representation shows the related peaks and levels which correspond to the main activities of the Project: the preparation and running up of different editions of the national on-line courses: “Integrating ICT in Traditional Training” (June 2005 – October 2006) and of the single edition of the on-line course for European educators “ECSU – Educational Challenges & Solutions in Using ICT” (November 2006 – September 2007). Last three months were devoted especially to the management of the Platform with the view to a better organizing the common space for finalizing the Project activities.

### 4.2. Total hits per month

A request to a Web server for a file (image, HTML file, javascript or CSS etc) represents a “hit”. When a webpage is requested to a server the number of “hits” or “page hits”, this is equal to the number of files requested, therefore one loaded page does not always equal with one hit because often pages are made up of other images and other files which make up the number of hits counted. Knowing the number of the hits is useful to evaluate the requirements of the server. It should be considered the number and the size of the files which will be transferred for one request. The servers should be tested to make sure they meet throughput targets (they should be capable to process a certain amount of “hits” per second).

Figure 2 illustrates the total hits per month, the maximum number of hits being registered in December 2005 when the on-line course participants studied mainly the Technological Unit.
The participation to the activities related to the Technological Unit of the on-line course “Integrating ICT in Traditional Training” involved an intensive use of the BSCW Platform (files to be downloaded, solved tasks to be uploaded, special sessions for video-conferencing, participation to discussions etc.).

4.3. Total files opened on the server per month

Figure 3 shows the total files monthly opened on the server. The highest number of the files opened on the platform was registered in August 2007, at the time when the participants in the on-line course for European educators “ECSUT – Educational Challenges & Solutions in Using ICT” finalised their work together with the tutors. At the same time, in most of the cases, the participants in the on-line course “Integrating ICT in Traditional Training” polished their final projects and uploaded the requested files in their BSCW space.

4.4. Total traffic in Mbytes per month

Figure 4 illustrates the total traffic in Mbytes per month. It is easy to be seen the two major peaks traffic periods which correspond to the period of the mentioned on-line course running. Starting with October 2005 the number of BSCW platform users increased to 300, this fact justifying the significant raise of the traffic.

6. CONCLUSIONS

The BSCW system has proved its power entirely in the frame of the FISTE Project. The main used...
facilities were oriented on creating, managing and sharing documents as well as on preparing and initiating the synchronous cooperation.

During the life of the Project, the partnership and participants made an intensive activity on BSCW, most of them expressing the fact that the platform was extremely helpful for developing and sustaining the Project activities and also very suitable for on-line learning.


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REFERENCES


A relevant participation of the users on BSCW is shown mainly by the limited number of users’ accounts (300 accounts) and the small number of visits in correlation with the number of the hits and files opened on the server in the analyzed period.

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