

Bringing Dynamism to WebQuests

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Webquests are used as a technology support in teaching-learning processes, but the way webquests are used by teachers may differ in terms of expectations and learning outcomes. Thus, most teachers prepare static webquests to facilitate short-term or long-term projects. Realizing that previously created webquests are only static web pages, even don't having a navigation menu most of the time; this research study is designed to bring dynamism to webquest approach and implementation. In search for effectiveness in using the webquest idea, the purpose of this study is to design and develop a webquest which dynamic for both teachers and students by providing interactive utilities like creating a webquest, modifying an existing webquest page, evaluating students enrolled in a webquest, tracking published webquests and communicating via forum.

Keywords webquest, technology integration

1. Introduction

Webquests, where the original idea was developed by Bernie Dodge and Tom March in early 1995 at San Diego State University, can be defined as an inquiry-oriented activity in which some or all of the information that students interact with comes from resources on the Internet [1]. They have been used by many teachers and students for many years in the teaching-learning process from K-16. Webquests are designed to integrate technology in a constructivist manner to facilitate meaningful learning to classroom for several reasons. Webquests can; improve critical thinking skills, fosters knowledge application, enhances social skills and encourages scaffolded learning [2]. On the other hand, more research studies should be conducted in order to reveal the role of webquests on the students as an instructional and learning tool.

Generally, webquests are used as a technology support in teaching-learning processes, but the way webquests are used by teachers may differ in terms of expectations and learning outcomes. Thus, most teachers prepare static webquests to facilitate short-term or long-term projects. Realizing that previously created webquests are only static web pages, even don't having a navigation menu most of the time; this research study aims to bring dynamism to webquest approach and implementation. If the main goal of education is effective teaching, technology integration in teaching-learning processes is inevitable. Then, why not use the power of various technologies like authoring languages and databases in parallel with the web in order to create an interactive platform for webquests for both teachers and students.

2. Purpose of the Study

In search for effectiveness in using the webquest idea, the purpose of this study is to design and develop a dynamic webquest which is highly interactive for both teachers and students. Teachers may perform many tasks like the following:

- Create and modify a webquest page
- Evaluate the students enrolled in a webquest
- See published webquests
- Communicate via forum

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Here, especially the creation of a webquest page will be designed step by step that the teacher should provide detailed information for each basic stage (introduction, task, resources, process, evaluation and conclusion) like type of the task, preference for evaluation, rubric creation, and submission dates for each stage. Thus, when students use the system, they will be prompted timely tasks, so that they will not be able to pass the next stage before completing the required one. Also, teacher approval, if specified by the teacher, will be necessary for starting the next stage. Furthermore, students using this system will study in an organized way, receive timely feedbacks from their teachers and see the evaluation results.

3. Method

3.1 The WebQuest Site

The interactive webquest site will have two kinds of users as target, namely teachers and students. The webquest is designed and developed on top of two technologies: PHP and MySQL. These technologies will make the webquest environment interactive for both teachers and students. From a teachers' point of view, the flow in the system can be described as the following.

When a teacher opens the web site, he/she can read the purpose of the site, create a new account or login to the site. The navigation menu consists of eleven options: (1) Home Page (Figure 1), (2) Announcements, (3) Forum/Discussion, (4) About webquest, (5) Create a webquest, (6) Modify existing webquests, (7) Evaluate existing webquests, (8) List of active webquests, (9) Update personal information, (10) Help, and finally (11) Logout.

“Home page” is the page which the user meets first. Here, the user can make registration to the web site (Figure 2). “Announcements” are the part where teacher can make announcements related to webquest tasks and changes. Teachers and students can use the “Forum/Discussion” part in order to communicate ideas.

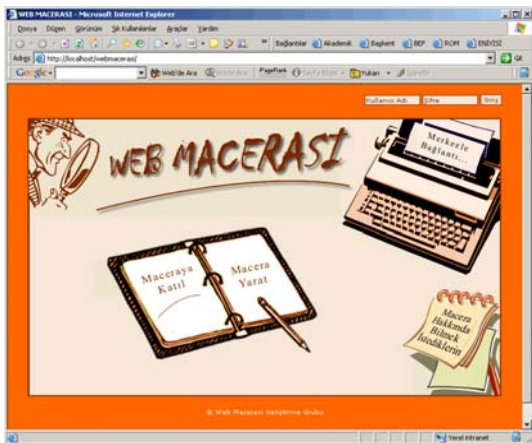


Figure 1 Screenshot for Home Page

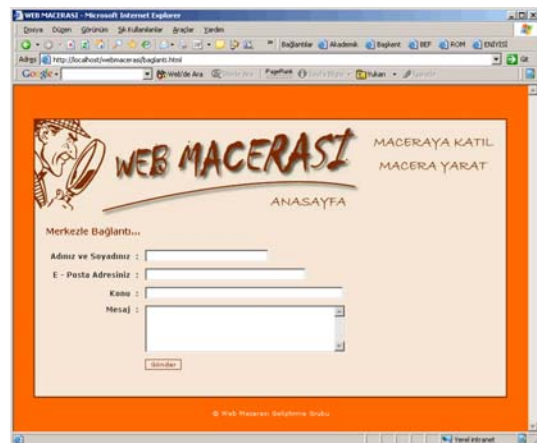


Figure 2 Screenshot for Registration

Teachers can find the definition of webquest, examples, papers and teaching materials under the option “About Webquest” (Figure 3). Furthermore, the necessary pages throughout the system will include links to related sources existing in this part, for accurate facilitation of the teachers. The most interesting and detailed part of the site will be the creation part. “Create a webquest” part is composed of several different stages for teachers (Figure 4). In the first step, the system will take demographic information like

course, level, topic and name of the webquest. In the second step, the system offers four design choices as navigation menu at the left or at the top and text only or graphics.

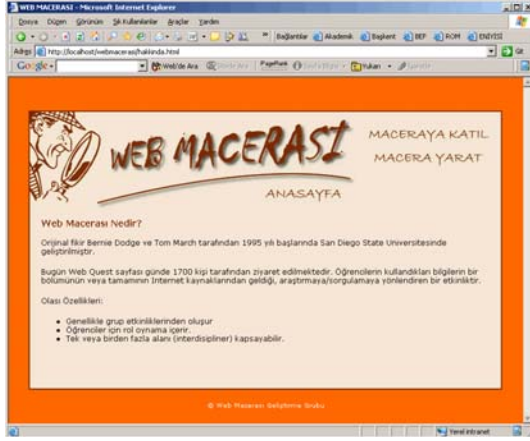


Figure 3 Screenshot for “About Webquest”

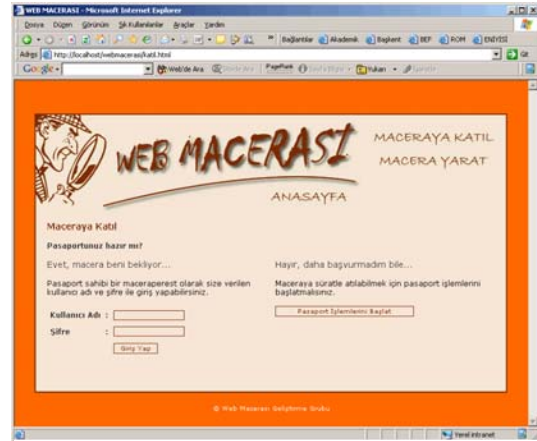


Figure 4 Screenshot for “Create a Webquest”

Third step in the webquest site is designed to inform teachers about the further six stages to provide information for students to engage in the tasks. These webquest stages are introduction, task, information resources, procedure, evaluation and conclusion [3, 4]. Each stage has link to a separate page which requires various detailed information. Besides, providing links to related pages, this screen also consist of informative knowledge about the purpose and content of each stage. In fact, this part of the site is the important one, since all the facilitation of any webquest project will be managed in this stage.

After providing data for “introduction” stage, teacher should go to “task” stage and select relevant choices which define the task. These choices are; retelling tasks, compilation tasks, mystery tasks, journalistic tasks, design tasks, creative product tasks, consensus building tasks, persuasion tasks, self-knowledge tasks, analytical tasks, judgment tasks and scientific tasks [5]. The choices made by the teacher will facilitate the system while creating evaluation rubric in a further stage. For the “information resources” stage, teacher is asked to provide related resources. These resources should especially cover Internet resources, but references for books, journals and multimedia files can also be supplied. The “procedure” stage should contain all the necessary processes that every student or group should perform to finalize the webquest project. The processes may be composed of design, decision, research, analyze, creation, prediction and the similar performances to complete the webquest project. Specifying each process one by one is important here, since the system will develop “procedure control list” which will be needed for evaluation purposes in the future. In the “evaluation” part, teacher is wanted to create a rubric for final evaluation. Hence, a rubric created according to the types of tasks specified by the teacher in the “task” stage is offered to teacher. This rubric can also be modified by teacher without any limitations. Finally, teacher can write the final words related with the project in the “conclusion” stage.

After submitting all the necessary data of each stage in the webquest project, a final stage is the “publication” stage. Here the teacher should provide the date and duration of each process specified in the procedure part. Moreover, teacher may choose some options which changes the flow of the webquest project. For example, “Is the conclusion part became visible after completion of the final process in the procedure part?”, “Is teacher approval necessary for each process?” and “Are process steps should follow each other linearly?”. Teacher can also arrange the student list here and make groups if necessary.

“Modify existing webquests” part gives the teacher opportunity to make some changes in the webquest project. Here, the teacher can go through all the six stages and publication stage similarly as in the “Create a webquest” part.

In the “Evaluate existing webquests” part, teacher has to select firstly the webquest project and student from existing lists firstly. Then, the system offers he/she the “procedure control list” and “rubric” with “grade” and “feedback” choices.

The teachers also can get the list of active webquests, update personal information, get help and logout from the system in a secure way. On the other hand, students will also login to the same system and use the system exactly in a similar way.

3.2 Data collection and Analysis

The interactive webquest site will be used as an evaluation option, like term-project, by faculty members and preservice teachers in a private university. After this pilot implementation, usability of the system together with the perceptions of teachers and students using the system will be gathered in order to improve the system. For evaluation of usability firstly a questionnaire will be used. Besides, scenario-based heuristic walkthrough evaluation method will be administered to randomly selected participants. For eliciting detailed information, focus group interviews will also be conducted. Thus, quantitative and qualitative measures will be used to analyze the collected data.

4. Implications

Design and development of such a system will make effective use of technology by both teachers and students, and will be a good example of technology integration which can be adapted in all levels and subjects fields in K-16. Besides, implementation of this dynamic webquest will expected to increase the collaboration between students, develop critical thinking skills, and give a chance for knowledge application and scaffolded learning in a constructivist manner [2, 4, 6].

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