WebQuest Projects: Inquiry-Oriented Projects Suitable for Science Education

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Outline

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Introduction

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- Within teaching practice, a number of alternatives to traditional teaching are emerging, most of them including ICT elements - many of them represent, at the same time, both learning and assessment methods…

- As alternative, the **Web** can be used successfully in facilitating and supporting cooperative activities.…

- **WebQuest projects** - useful model for students to achieve quick, easy and efficient individual tasks and group work…

Model

- **WebQuest** - fully exploit ICT facilities - was developed and implemented for the first time in 1995 in USA (Bernie Dodge and Tom March)

- Using specific Internet tools (WWW), WebQuest proposes a new working method, which has as its basis the constructivist idea of **making the personal effort for one's own knowledge development**, as an alternative to traditional learning methods. It is based on a model of searching on the Web, this also containing elements of cooperative learning.

Model

- Bernie Dodge said that *a teacher who wants to develop such a learning environment organized around Internet resources, may find this intent an impossible task, taking into account the complexity and multiple opportunities that can be addressed*.

- Specifying *WebQuest as an educational strategy*, Bernie Dodge (1997) offers a clear definition: **"WebQuest is an inquiry-centred learning activity through which students interact with information taken mainly from the Internet"**.
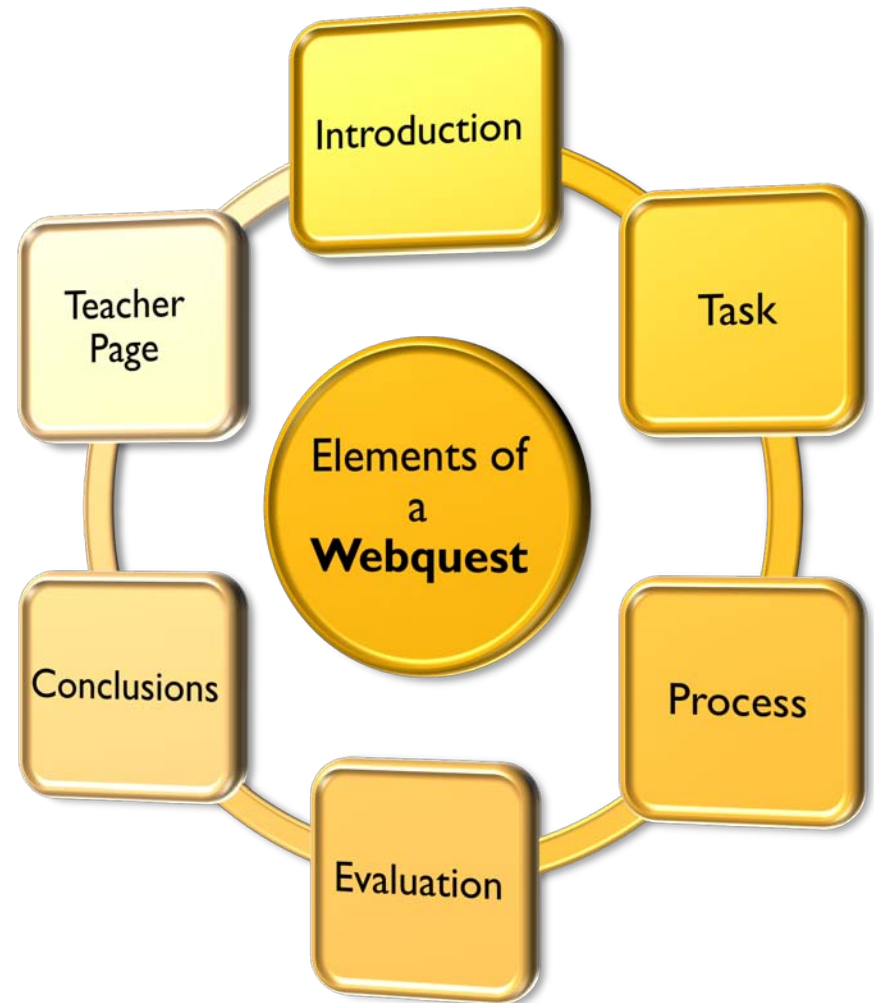
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Model

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- More recently the Web has integrated Web 2.0 social networking sites, blogs, wikis and podcasts. Therefore, the **WebQuest model** has also adapted to the existing trend, meaning *the need to define some methodological recommendations* which allow *student involvement in activities appropriate to Web 2.0 technologies*. These aspects bring, in turn, ***the increasing of students' knowledge*** (March, 2007).

- **WebQuest** is an educational activity focused on **investigation**, due to the fact that once accessed, all the information taken from various sources of information (indicated by the teacher) *are processed in order to create correlations and original learning products* that come like *an answer to a question, a solution to a problem, a response to a community need*, etc.

- The *process* and the *organization of the learning steps* are described by the ***teacher,*** together with the *evaluation criteria*.

Content

- **Six major parts** are included in a **WebQuest** (Blanco, 2003):

Elements of a **Webquest**

- Introduction
- Task
- Process
- Evaluation
- Conclusions
- Teacher Page

Content

Introduction

- This part provides **essential information** and **motivational support** for offering to the students' roles to play. The technique gives them the way to carry out a play. Some of them could be 'an inside volcano researcher' or 'a botanist that analyses the tropical plants'. This section also includes an overview of the learning goals to students.

- One of the **expectations of the introduction** is to make all the activity pleasant for students. If the projects are correlated to students' interests, ideas, experiences or future goals, they become more interesting. The motivational support makes the students engaged at the beginning of the WebQuest.

Content

Task

- The task is **a description of what students will have accomplished** by the end of the WebQuest. In the beginning, the teacher has to find some resources for a specific topic on the web and then, the teacher opens the activity to the students that includes information from the several sites. As Bernie Dodge mentioned, **the task should be doable and interesting**.

- A difficult matter is to develop the task. That's why the teacher can ask the students to publish all the information found on a website. Besides that, they can cooperate in a research effort with another website or institution, or create specific materials that define aspects of their work. **The task needs to be visible, with a global importance and of course, fun for the students.**

- It is recommended for the teacher to show a final project, or examples from previous projects. If a project is very good, it could be used by the teacher several times.

Content

Process

- The process is **a description of the steps that learners should go through** in accomplishing the task, with links embedded in each step. All the processes should be broken out into **clearly described steps**. In the case of *long-term projects*, it is better to have **a demonstration of each step**. The demonstration offers a step by step process and refreshes the written resources.

- In describing the learning process **a list of resources** (websites, printed resources) that the students will need to complete the task is usually inserted. At this moment, the WebQuests have the resources included in the Process part, in this way being accessed at the needed time. Beside the **web resources,** *the students can use* **non-web resources**: videos, audio cassettes, books, posters, maps, models etc.

Content

Evaluation

- The WebQuest needs a rubric for **evaluating students' work**. This rubric is **a set of criteria used to evaluate the student's performance**. The **requirements** need to be objective, related to the students' capacities, consistent and specific to the tasks. The **goals** have to be clear.

- *It is recommended* to exemplify three categories of students: exemplary, acceptable and unacceptable.

- The *difference between an exemplary and acceptable* activity is designed to have a positive aspect: *to make the students to work more* to achieve the first category. Anyway, an *explanation regarding the unsatisfactory* activity will establish *a minimum of standards* that all the students are expected to achieve. Finally, all the students need to have had *a good experience* in achieving the project.

Content

Conclusions

- This part **allows the students to reflect** and **teachers to make a summative evaluation**.
- This part needs also **time for discussions and pointing on various applications of the lesson**.
- In addition, the **students can learn different ways to improve their work**.
- There can be included also some rhetorical questions or additional links to encourage students to extend their thinking into other contents beyond the lesson.

Content

Teacher page

- The teacher's page is an optional component of a WebQuest, for **teachers' for teachers** who intend to use the WebQuest project in their class, either in its original form, or modifying it and adapting it to the context in which it will be applied.

- Possible **reuse of WebQuest products** involves publication on a website, or in a virtual library. Such collections can be created on the website of the educational institution, or can be published like web pages and included in different collections of WebQuest projects.

- Here can be included important information for implementing the proposed WebQuest: target learners, standards, notes for teaching the unit, and, in some cases, examples of student work.

Activity

- A) **Split in groups of 4 members**.

- B) **Start to consult** some **Science WebQuest examples** from the *QuestGarden* website: **http://questgarden.com/**

- or **see some examples** presented in the *BestWebQuest.com* matrix initiated by Tom March

- - proposed examples: *"Which Energy Source is Best?"* & *"Gravity and Newton's Laws of Motion with an Egg Drop Challenge"*

- http://questgarden.com/78/68/1/120913172423/index.htm

- http://questgarden.com/146/66/3/120730175158/index.htm

Activity

- C) **Try to develop, in a group, a model using the WebQuest template file**, called *WebQuest.doc* available in the working e-platform.

- The chosen theme should be linked to the specific national curriculum subjects. The *WebQuest.doc* template file contains a specific format developed for this activity.

  Necessarily, all parts of such a project will need to be developed: **introduction, task, process, evaluation, conclusions and teacher page**. These sections should be provided in separate pages.

Activity

- D) Since this is devised as **team work,** *each participant assumes one role of the team* and *tries to first solve the individual tasks*. In performing the assumed role, *it is necessary to search and select the needed resources from the Internet, suitable for the age and level of knowledge of students*.

- E) **Start to design the steps of the teaching/learning process** and **insert all the needed information resources inside this section**.

Activity

- F) **Design**, with colleagues, **the individual and group evaluation criteria**.

- G) **Emphasize one or few conclusions** that contain a summary of activities and knowledge / skills / abilities acquired by students during the project. Being designed for students, ***the findings need to be motivational for students and emphasize the students' success***. Also the *launching of other possible topics* for future investigation or *some questions for reflection* can be addressed to the students. Findings may include *rhetorical questions*, or *additional links* that may suggest that students are able to extend or transfer their knowledge to other content than those provided in the project.

Activity
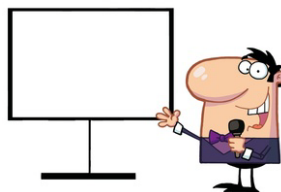
- H) At the end of the project, **start to develop a teaching guide** for other teachers who will try to use the WebQuest project in their classes, either in its original form, or modifying it and adapting it to another context.

- I) Using the model presented in the template file, *WebQuest.doc* - **save and load the created file as *Proiect_WebQuest_GroupX.doc***, and **upload it in the working e-platform**.

- J) **Choose a member of the team to present your WebQuest** to the other groups.

Activity
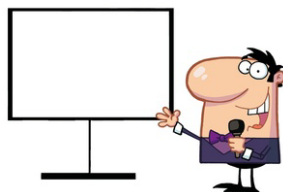
- The WebQuest Group Project (***Proiect_WebQuest_GroupX.doc***) is uploaded in the public space of the BSCW platform (https://public.bscw.de/pub/)

Activity

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Acknowledgements

THANK YOU & WELCOME TO OUR

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