

# Working with WebQuests

## Making the Web Accessible to Students with Disabilities

Rebecca Kelly

Searching the Internet is becoming an everyday practice for most students. Students with disabilities, however, are sometimes put at a disadvantage when attempting to complete this task. One practice that has become invaluable to me as a special education/inclusion teacher is the use of the WebQuest format. This article describes how students are boosting their learning through teacher-led lessons on the World Wide Web.

One such type of lesson, the WebQuest, is especially helpful in meeting the needs of students with disabilities within general education classrooms. Students with special needs sometimes experience information overload when first learning about computer programs; consequently, they need lists or steps to follow. According to research, independent activity—including well-defined search options—works best with specified steps that help reinforce these skills (Hawes, 1998). (See box, “What Is a WebQuest?”)

### Essential WebQuest Principles

The Center for Applied Special Technology (CAST) has suggested the following principles of universal design for learning: multiple representations of information, multiple means of expression, and multiple means of engagement (Orkwis & McLane, 1998; Stahl, 1999). These principles are met with the flexibility and design of the WebQuest

and can be incorporated in the creation stage of the lesson. With the special education teacher’s knowledge of his or her students’ needs, two of the IDEA requirements can also be met with regard to accommodations and access to the general education curriculum. First, teachers can address goals of the individualized education program (IEP) to focus on accommodations and modifications to support the child’s success in the general curriculum (Goldberg,

1999). Teachers can incorporate instructional support into the design of the WebQuest in the form of readability, larger text, and simpler directions. Also, because schools and teachers are required to help the child be involved in and progress within the general education curriculum, the WebQuest format offers the opportunity to incorporate basic skills with higher-order thinking skills and other enrichment activities with peers without disabilities.

### What Is a WebQuest?

The WebQuest is a teacher-created lesson plan in the form of a simple World Wide Web page with active, preselected Internet links and a specific purpose for students. It is designed to provide students with an independent or small-group activity that incorporates research, problem-solving, and application of basic skills. It can be created at no cost to the teacher and can be constructed on a computer with a minimum 486 processor that has Internet access. The lesson then provides guided research using the Internet while incorporating skills such as problem-solving skills.

The WebQuest is a lesson design originated by Bernie Dodge of San Diego State University (<http://edweb.sdsu.edu/webquest/webquest.html>). The design incorporates the combination of sequenced steps and preselected, linked Web sites to guide the student through the lesson. The original model includes six components—Introduction, Task, Process, Resources, Evaluation, Conclusion—that guide students through the lesson. The components may be renamed or rearranged to meet the needs of the students. The WebQuest can be used as preceding information for a unit, extension of an idea expressed within the unit, or a culminating project.

WebQuest received the 1999 Project IDEA (Identifying and Disseminating Educational Alternatives) award from the Delaware Department of Education and the Exceptional Children and Early Childhood Group.

*With the WebQuest, teachers can address IEP goals and focus on accommodations and modifications to support the child's success in the general curriculum.*

### Creating a Draft Web Page

The first step in designing a WebQuest is creating a draft of the Web page. This can be accomplished by the teacher alone or with the input of the students. The initial information should include the classroom objectives; in addition, IEP objectives and state standards should be identified at the initiation of the WebQuest. State standards (Table 1) shape the lesson and IEP goals and objectives fine-tune it.

Once the teacher has determined when in the course of the unit of study the students will use the WebQuest, the objectives are easier to determine. Although it does take time for the teacher to create this type of lesson, it pays off in the classroom with an engaging, cooperative lesson that flows smoothly and incorporates a variety of skills. (For further information, see box page 6, "Hints for Web Page Creation.")

**Collaborative problem-solving fits in nicely with the WebQuest lesson and is a proven way to identify barriers related to inclusion.**



Collaborative problem-solving fits in nicely with the WebQuest lesson and is a proven way to identify barriers related to inclusion and to create ways to overcome these barriers. The cooperative learning and adapted curriculum approaches of the WebQuest format tend to increase the success of inclusive classrooms (Hobbs & Westling, 1998).

### A WebQuest S.O.S.

One example is "S.O.S.—Salvaging One Sunken Ship," a WebQuest created in coordination with my eighth-grade students' American History, English, and Reading classes (<http://www.k12.de.us/delmar/school/projects/webquest/sos/sos.html>) (see Figure 1, pages 7 and 8). About half of the students in this class of 22 had reading and written-expression goals on their IEPs, with documented levels ranging from second grade to sixth grade. This group also included students identified with disabilities in the areas of expressive and receptive language, learning disabilities, hearing impairments, and mild mental retardation.

According to Holloway (1999), the major reasons for the lack of reading comprehension among remedial readers are poor motivation, lack of experience, and egocentricity. Teachers can help regain motivation and improve the students' reading performance by connecting reading activities with realistic experiences and real-life applications. In

**Table 1. Delaware State Standards Addressed by the WebQuest "S.O.S.—Salvaging One Sunken Ship"**

Subject	Standard
English/Lang. Arts.—Standard 1	Students will use written and oral English appropriate for various purposes and audiences.
English/Lang. Arts—Standard 2	Students will construct, examine, and extend the meaning of literary, informative, and technical texts through listening, reading, and viewing.
English/Lang. Arts—Standard 3	Students will gain access, organize, and evaluate information gained by listening, reading, and viewing.
Social Studies/History—Standard 2	Students will gather, examine, and analyze historical data.

### Hints for Web Page Creation

Once the teacher or the students have written the draft of a WebQuest page or other home page, the page creation begins. If you do not have a page editor that allows you to easily create Web pages, do not fear. Netscape Communicator has a component called Netscape Composer, a user-friendly page editor, that is downloadable and available at no cost (see below). Using the page editor, you can create the WebQuest page, beginning with headings, text, and even pictures. With a few simple steps, a URL address becomes an active link to the Internet. You can also create tables to present information in a neat, organized way.

Once you or the students have created the page in HTML format, you have two choices. First, the page can be placed into a folder on the computer, saved to a disk, and then uploaded via the school's server. The second choice involves saving the document to a classroom computer's hard drive. The links will still work the same, but that specific computer is the only machine that can access the file.

### How to Access Netscape Composer

Netscape Composer includes a What-You-See-Is-What-You-Get (WYSIWYG) document-creation tool, with drag-and-drop hyperlink and image capability. Its functions are similar to word-processing commands.

*Step 1.* Go to <http://home.netscape.com/download>

*Step 2.* If using Windows 95, follow appropriate directions to download Netscape 4.6 Communicator. Composer is one of its components.

*Step 3.* The file takes 32 MB memory. The file size is 14.6 MB.

*Step 4.* For instructions on how to use, the Composer NetHelp file can be downloaded or printed out (about 35 pages).

addition, the incorporation of self-directed activities, such as the WebQuest lessons, invites collaborative learning and allows for varied forms of self-expression (Holloway, 1999). When working with students in an inclusive classroom, teachers need to create a learning environment that accommodates the needs of the students with disabilities without bringing undue attention to those students.

Teamwork and cooperative learning are also important goals; but teachers

must still provide modifications, as stated in student IEPs. The teamwork is modeled for the students by the coordination between the general education teacher and the special education teacher. In the case of the S.O.S. WebQuest, I solicited the help of the reading specialist in the creation stage of the lesson. The reading specialist assisted with the selection of a relevant historical fiction book at a lower reading level; she also provided several Internet links regarding shipwrecks and the International Ice Patrol that she had collected over the past few years. With her material and my background in educational technology and special education, we proceeded forward with our integrated WebQuest.

### WebQuest Components

The integrated WebQuest unit usually takes about four to five class periods (about 50 minutes each) to complete. The unit usually has six components: Introduction, Task, Resources, Process, Evaluation, and Conclusion.

The first period should be used as an overview of the contents and usage of the WebQuest, with next two to three sessions involved in searching the Web sites linked to the WebQuest page. The final period or two can be spent working on the solution or problem-solving activity noted in the Task part of the lesson.

### Introduction

The WebQuest's Introduction provides an overview and essential background information of the lesson. In our S.O.S. WebQuest, it explained that the sinking of the *Lusitania* and the *Titanic* were different incidents but that they share some similarities. It also explained that students can gain a better understanding of the events by reading historical fiction, such as *Dark Crossing* by Joanne Suter. In the Planner (Figure 2, pages 9 to 11) that I created to help make effective WebQuests, this section is set up by the classroom teacher and should reflect the subject area standards, as well as any unit concepts the students should be aware of before starting the WebQuest.

### The Task

The next section of the WebQuest is the Task. It can also be referred to as the Problem because it states the student's role in solving a specific problem or situation. For example, the S.O.S. WebQuest states that the students assume the role of a deep sea salvager who has been awarded a grant to explore and possibly raise either the *Lusitania* or the *Titanic*. Part B of the Planner shows a checklist that teachers and students can use as a "brainstorming" exercise that helps them choose activities. The Planner also reinforces the five W's (who, what, when, where, and why), which serve to round out the activities.

In the S.O.S. example, students must research each location and the details of the ship and its sinking to help gain facts as they create an informed opinion. Students are then charged with writing a letter to the chairman of the grant committee, by providing a rationale for whichever ship the student selects to raise and by using persuasive



**Students can be helpful in creating various sections of the WebQuest, with the guidance of the teacher.**

**Figure 1. Text from Screenshot of WebQuest: S.O.S.—Salvaging One Sunken Ship (continued on page 8)**

Created by Rebecca Kelly and Dr. Joanne Czernick with the help of their eighth grade Reading class, Delmar Jr. High School, Delmar, Delaware, February 1999

**INTRODUCTION - TASK - RESOURCES - PROCESS - EVALUATION - CONCLUSION**

**INTRODUCTION**

The sinking of the Lusitania (1915) and the Titanic (1912) are different incidents which occurred in history; however, these events share some similarities. In addition to reviewing historical accounts, students may read fictional accounts such as “Dark Crossing” by Joanne Suter (Lusitania) to gain a better understanding of the events and how they reflect a historical era as well as affect it.

**TASK**

You are a deep sea salvager who is interested in finding the wrecks of famous ships that have sunk. You have been awarded a grant by the International Maritime Society (IMS) that will provide resources to explore, and possibly raise, only one sunken ship. You have narrowed your choice down to two ships: the Lusitania or the Titanic. You need to research each location and the details of each sinking to help you gain facts to create opinion.

You will write a letter to the chairman of the IMS, giving your rationale for raising the ship of your choice. You will need to persuade them that your efforts will be worthwhile.

**RESOURCES**

Use the following links to find your information.

**For the Lusitania**

[RMS Lusitania](#)

[Lusitania](#)

[Cunard Line’s Lusitania](#)

[RMS Lusitania](#)



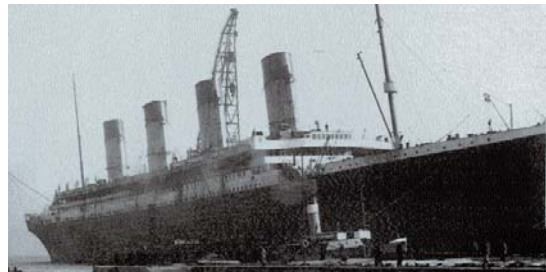
**For the Titanic**

[The Titanic Gallery](#)

[RMS Titanic—the Story Told](#)

[RMS Titanic’s Final Resting Place](#)

[The Titanic Information Site](#)



**THE PROCESS**

1. Within your small group of 2-4, label two sets of four large index cards with the following headings on the top left side of the card: Location, Time/Date of Incident, Historical Facts, and Questions Still Unanswered.
2. On the top right corner, label one set, “The Lusitania” and one set, “The Titanic.”
3. Using the links in the Resources section above, find the following information to put on the cards for both ships. (You may want to divide up the work within your group due to time limitations.)
  - Location: possible types of information include, but are not limited to: size of ship originally, size of wreckage, latitude and longitude.
  - Time/Date of Incident: possible information might include: time of day the ship sank, the season and weather conditions, what year it sank.
  - Historical Facts: include information such as: how many people aboard, how many survived, lifestyles of the people, importance of the ship, famous people aboard, significance of the actual sinking.
  - Questions still unanswered: this includes questions that historians, other researchers, and your group have after looking over the data.
4. After collecting all of the data, you must make your decision about which ship should be salvaged or raised. Make a list of supporting arguments on your own sheet of notebook paper.

**Figure 1. Text from Screenshot of WebQuest: S.O.S.—Salvaging One Sunken Ship (continued from page 7)**

5. Using the arguments you have listed, write a business letter to the Chairman of the IMS, 200 State Street, Washington, DC 10003, giving your rationale for raising the ship of your choice. You will need to persuade them that your efforts will be worthwhile. Hand this letter in to your teacher when you are finished.
- Extra Credit: While doing your research you found out about the International Ice Patrol. You may want to refer-ence in an extra paragraph about how the ICP can help you in your salvage operation. To go to the International Ice Patrol site, [click here](#).

**EVALUATION**

You will receive one grade on this Web Quest assignment—25% for your Lusitania research index cards, 25% for your Titanic research index cards, and 50% for your letter to the IMS. The letter will be graded according to the rubric used in English class for a letter. Remember, content, construction, and mechanics of the letter will all be taken into consideration.

**CONCLUSION**

With the completion of this WebQuest, I hope you have gained experience in doing research to gain facts and to construct a persuasive argument. It is also hoped that the information you found has given you a new or expanded insight about how events shape history. In addition, the letter writing part was meant to reinforce writing skills including persuasive writing, supporting details, and, of course, mechanics. Hopefully, it will encourage you to ask questions and seek out the answers.

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Special thanks to students in 2nd period Reading for their assistance in constructing this page: S. Hargrove, B. Harris, J. Horseman, J. LeKites, D. Timmons, S. Hopkins, D. Heath, M. Stewart, A. Bailey, K. Carey, A. Henry, M. Norman, T. Phippin, M. Waddler, M. Jones, and R. Niblett.

Based on a template from THE WEBQUEST PAGE

letter-writing style and language to prove a point. Because letter writing was a skill the students were familiar with, but needed to work on, the teachers agreed on the students' selection.

**Resources**

The third WebQuest section, Resources, consists of Internet links that the teacher preselects. Depending on the computer literacy level of the students, students may use this opportunity to search for relevant sites and record the information in the Planner. Compiling the Resources can take a lot of time; teachers may want to weed out any sites with extremely difficult readability or

organization of information. By having these links, students do not need to worry about typing in a cumbersome URL address to a Web site; they simply click on the hypertext link on the Resources page. This section can also be built in to the Process to aid students who have difficulties breaking the sequence of the steps to use the pre-selected links.

**Process**

Process, the fourth component of the WebQuest, consists of steps that guide the students toward reaching their goal. The S.O.S. WebQuest provided five steps clearly describing what the student was expected to do. Simplification of language due to low reading ability is very easy to incorporate in this stage. The steps can be broken down into as many as needed for the student to be successful. Students can also be helpful in creating this section with the guidance of the teacher in breaking down the sequence of the activity so that all students understand the task. If the Process steps are photocopied onto a

transparency, all students can join in the discussion of how to make the steps easier to understand. Again, ownership of the activity helps increase student participation and success. English class became the scene for the Process and final Evaluation components of the S.O.S. WebQuest.

**Evaluation**

The next step, the Evaluation, tells students how they will be graded on completion of the lesson. For example, the S.O.S. WebQuest Evaluation section states that students will receive a grade consisting of 25% for the *Lusitania* research index cards, 25% for the *Titanic* research index cards, and 50% for the letter to the grant committee. I have found that student input in the planning of this stage also helps reinforce the importance of each part of the activity. The letters were assessed based on a rubric that mirrors the state standards. Adherence to IEP goals and objectives was also measured and recorded at the appropriate times during the activity.

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*Initial drafts of the WebQuest online unit should include the classroom objectives, IEP objectives, and state standards of learning.*

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Figure 2. WebQuest Planner (1 of 3)

Topic \_\_\_\_\_

### Part A - Introduction (by teacher)

*\*To set up what material needs to be covered or known prior to the activity; also sets the stage for the activity and how it relates to content covered in the classroom*

### Part B – Task

Type of activity (check all that apply)

- Oral expression
  - Individual presentation
  - Group presentation
  - Skit or play
  - Other
- Written expression
  - Report format
    - Character essay
    - Narrative (like someone is telling a story)
    - Compare/contrast essay
    - Persuasive essay
    - Other
  - Article format
  - Letter
  - Poem
  - Diary entry(ies)
  - Other
- Artistic expression
  - Artwork (either on computer or to be scanned)
  - Photography (either digital or to be scanned)
  - Other

*Looking at the things you have checked above, think about a situation in which resources from the Internet could help you solve your problem or create a response. Include the following:*

**Who (what role will the student play) –**

**What (what duties will he/she have to do) –**

**When (either what era is this taking place or what time frame might you be working with)-**

**Why (what are you trying to accomplish) –**

Figure 2. WebQuest Planner (2 of 3)

### Part C - Resources

1. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

2. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

3. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

4. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

5. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

6. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

7. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

8. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

9. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

10. Title of site to be used for information: \_\_\_\_\_

URL address: http://\_\_\_\_\_

**Figure 2. WebQuest Planner (3 of 3)**

### **Part D - The Process**

List the directions of how to accomplish the task(s) listed in Part B.

1. \_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_

4. \_\_\_\_\_  
\_\_\_\_\_

5. \_\_\_\_\_  
\_\_\_\_\_

### **Part E – Evaluation**

How will the results be graded?

- By the teacher
- By the students
- By both teacher and students

*(rubric can be generic or specific, depending on the project or product created)*

### **Part F – Conclusion (by the teacher)**

*To show the purpose and connections of the activity to the state standards and to general IEP goals, if applicable*

### **Student Assignments**

**Part B**

**Part C**

**Part D**



**In an evaluation of our WebQuest project, the student writing samples showed deeper thought than previous letter-writing exercises in class; and student grade levels in reading showed dramatic increases.**

### Conclusion

The last part of a WebQuest is the teacher-written Conclusion. Here, the teacher states the cross-curricular objectives that the student has successfully accomplished with the completion of the activity. The Conclusion also revisits

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*Teachers can help regain motivation and improve students' reading performance by connecting reading activities with realistic experiences and real-life applications.*

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the academic standards that apply to the students' work.

### Standards and WebQuest

WebQuest lessons offer connections to the curriculum standards while maintaining flexibility necessary to meet students' special needs. Teaching to the content standards requires certain instructional approaches. New standards require students to apply, demonstrate, or use specific knowledge of skills, rather than just retain facts or demonstrate basic rote knowledge (e.g., see Table 1). Higher-order thinking and problem-solving skills are targeted, and more group projects and student collaborations seem to help in the instructional process (McLaughlin, Nolet, Phim, & Henderson, 1999). A one-computer

classroom can encourage the class to work together to solve the problem posed. On the other hand, a computer lab facilitates using the approach with small groups of two or three students or with individuals.

### Benefits to Students

We found many benefits to students from participating in the WebQuest. Homebound students with Internet access can be involved by including a link to the teacher's e-mail in case of questions concerning the lesson. In one case, a teacher sent the URL of the WebQuest to the mother of a student who requested information on missed assignments because of illness. The mother later said that she found the format easy to follow and that she had understood the directions and was able to help her son complete the activity. He returned to school the next week with his activity completed and was not behind in the classwork.

Positive feedback received from students stated that they not only enjoyed the Internet search part of the lesson, but asserted that the project was "something that made sense." Many students commented that even though "having to think is hard—filling in the blanks is easier." They agreed they understood the subject better after looking at it from a new perspective and that it was a type of lesson that they would like to do again.

In addition, the general education teachers involved liked the level of engagement and diversity the WebQuest offered. In the case of the S.O.S. WebQuest, the student writing samples showed deeper thought than previous letter-writing exercises in class. Student interest was also evident when some even offered to help type the WebQuest on Netscape Composer and helped find and save images from the Internet for inclusion into the Web page itself. Duration of the WebQuest is at the teacher's discretion and can last from a few days to a few weeks, depending on the class size, ability, and class time schedule.

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***The WebQuest Planner reinforces the five W's (who, what, when, where, and why) for students as they conduct their online research.***

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**Special Education/Inclusion Accommodations for WebQuest**

Both special and general education teachers can easily include accommodations and modifications in this type of lesson format. Because the WebQuest is text based, read-aloud programs such as the *Kurzweil 3000* allow the page contents to be read to students with visual or learning difficulties. In addition, the size of the type can be enlarged easily during the creation stage to promote easier readability. As previously noted, the author of the lesson can match the readability level with that of students with low reading levels. The lesson can also be adjusted to meet the reading and written expression goals of an IEP or to easily mirror state standards in a particular area. It is also a perfect vehicle to foster active participation in a project that spans several curricular areas. When using WebQuests in addition to other technology-based approaches, such as *PowerPoint*, my eighth-grade inclusion class improved their reading levels (Kelly, 1999). After comparing the reading levels as recorded on my students' IEPs from spring 1998 to spring 1999 with those of special education students in another eighth-grade inclusion class without the implementation of technological approaches, my group showed an average increase of 2.3 grade levels, whereas the other class showed an increase of 1.2 grade levels over the same time with the same general education teachers. The only variable that changed between the two groups was the implementation of creative technology-based approaches, such as the WebQuests, to improve and promote reading and written expression.

As a special education teacher in an inclusive classroom, I have observed the

engagement of all students in the learning process through the use of the WebQuest design—including students with visual impairments, hearing impairments, learning disabilities, and no disabilities. Each student brings his or her best to the lesson and is able to participate in class without watering down the content. The WebQuest is not only a *design*, it is a *device* through which participation without frustration makes learning fun, exciting, and accessible to all students—which is just as it should be.

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