

Introducing the New Portable Wireless Laptop Labs...



...While Searching for the "Best Quest"

Technology Integration Support Workshop #1

Presented by:

NAU College of Education's
Preparing Tomorrow's Teachers to Use Technology (PT3) Staff

Fall 2002

Introducing the New Portable Wireless Laptop Labs... ...While Searching for the "Best Quest"

This workshop provides you with an overview of the mobile computer lab resources available for the Fall 2002 semester. Resources and check-out procedures are presented following a "hands-on" demonstration of a typical in-class activity that applies some of the mobile laptop lab's resources.

This Workshop #1 packet includes the following resources:

- Workshop WebQuest Activity
- WebQuest Visual-Verbal Design Scoring Rubric
- WebQuest Component Scoring Rubric
- WebQuest Instructional Design Scoring Rubric
- National [& Other] Standards Resources

The *Preparing Tomorrow's Teachers to Use Technology* (PT3) program at NAU is a federally-funded initiative that is administered through the Arizona K-12 Center. This program is committed to helping education faculty integrate technology into their professional practices. Offering individual technology mentoring and support, helping with course redesign efforts, and providing technology resources represent the primary ways in which the PT3 staff can help with technology integration efforts during the Fall 2002 semester.

Currently, the PT3 staff at NAU includes two full-time personnel. Greg Sherman is an instructional technologist, specializing in the development of computer-supported instructional strategies to facilitate learning within a broad range of contexts. Paul Alley is an educational media developer, specializing in the creation of interactive Web-based material. Greg and Paul are housed in **Room 178** of the education building.

Contact information for NAU's PT3 program:

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An on-line version of this document can be found at:

<http://pt3.nau.edu/resources/workshops/>

In-Class Activity Sample

“The Task” Introduction

Suppose you want to spend time in class helping your students learn more about available Web-based instructional resources for a particular content area. You decide that one of the best ways to get the students to critically examine on-line material is to provide them with rubrics to be used as tools for evaluating the potential effectiveness of on-line educational experiences. You also decide that you want to expose your students to a specific type of on-line instructional context called “WebQuests,” and since you have more students in your class than computers, you decide to jigsaw the materials in an effort to get the most out of the in-class time.

You are going to spend about 30 minutes simulating this activity by locating and examining three content-specific WebQuest examples.

For a brief background on WebQuests, read the material presented at:

http://edweb.sdsu.edu/courses/edtec596/about_webquests.html

“The Task” Procedures

Step One: After the class has been arranged into groups of three, the person in each group who was born the farthest from Flagstaff will facilitate the assigning of each group member to one of the following roles:

Role	Description	Assigned Member
WebQuest Visual-Verbal Design Expert	This person is responsible for evaluating the manner in which the Web-based materials (pictures, text, navigation scheme etc.) were developed.	
WebQuest Component Expert	This person is responsible for evaluating the nature of the WebQuest components developed (the task description, introduction, process, resources, evaluation, and conclusion).	
WebQuest Instructional Design Expert	This person is responsible for evaluating such instructional design elements as context, motivation, collaboration strategies, scaffolds, opportunities for practice, and alignment with specific outcomes.	

Step Two: The group needs to decide on a specific content area before choosing the WebQuests to be evaluated. This content area may be as general as "Middle School Mathematics" or as specific as a few outcomes from the *National Principles and Standards for School Mathematics*. If you need help deciding on specific outcomes, you can navigate to the various national standards links included in this packet. Once you have decided on the content area, briefly describe it in the box below:

Step Three: Once your group has decided on the content area, you must now locate three different WebQuests on-line that appear to address the content in some way. Use the following sites to access archives of WebQuests:

Some Good WebQuest Archives

- <http://webquest.sdsu.edu/matrix.html>
- http://edweb.sdsu.edu/webquest/webquest_collections.htm
- <http://www.west.asu.edu/achristie/wqmatrix.html>
- <http://www.itdc.sbcss.k12.ca.us/curriculum/webquest.html>

Record your three WebQuest sites to be evaluated here:

	WebQuest Name	Location (URL)
1		
2		
3		

Step Four: Each of the group members will take their corresponding evaluation rubrics and study them to determine what they will be looking for in the WebQuest. Once each group member is comfortable with her or his rubric, select a WebQuest (from the three identifies) and examine it in detail. If you have more than one computer, then this task can be completed independently. If you have one computer, select a group member to be the primary navigator (perhaps the group member born closest to Flagstaff?).

As you navigate the material, score each of those WebQuest characteristics presented within your rubric according to the scale provided. Three separate scoring columns are included so that you can use the same rubric for each of the different WebQuests (and compare each WebQuest on the same characteristics). When you have completed your rubric scoring, tally the scores and record them in the spaces provided in the chart below.

WebQuest Site	Verbal-Visual Design Score	Component Score	Instructional Design Score	Total [64 Max]

Step Five: Discuss the following "Conclusion Questions" with your team members:

1. At first glance, did you think the site scoring the highest would "win" the competition?
2. Which scoring category (verbal-visual design, WebQuest component, instructional design) was the easiest to evaluate? Which was the most difficult? Why?
3. Discuss how you might be able to use WebQuests in your education classes.
4. What prerequisite skills and knowledge might your students need to successfully perform the tasks in this example within a typical in-class session?
5. How might this type of activity be extended beyond an in-class experience?

Reference

The WebQuest evaluation rubrics presented here are based on the original WebQuest rubric by developed by Bernie Dodge at San Diego State University. See the original rubrics at http://edweb.sdsu.edu/courses/edtec596/about_webquests.html.

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WebQuest Visual-Verbal Design Scoring Rubric

	Beginning	Developing	Accomplished	Site Scores		
				1	2	3
Overall Visual Appeal	<p>0 points</p> <p>There are few or no graphic elements. No variation in layout or typography.</p> <p>Color is garish and/or typographic variations are overused and legibility suffers. Background interferes with the readability.</p> <p>No use of headings and subheadings.</p>	<p>2 points</p> <p>Graphic elements sometimes, but not always, contribute to the understanding of concepts, ideas and relationships.</p> <p>Graphics are included, but they are too big and/or they stand alone and waste too much screen space.</p> <p>Little use of headings and subheading.</p>	<p>4 points</p> <p>Appropriate and thematic graphic elements are used to make visual connections that contribute to the understanding of concepts, ideas and relationships.</p> <p>Graphics and text are displayed side-by-side where appropriate.</p> <p>Headings and subheadings are clear.</p>			
Navigation: Scheme & Flow	<p>0 points</p> <p>Getting through the lesson is confusing and unconventional. Pages can't be found easily and/or the way back isn't clear.</p>	<p>2 points</p> <p>There are a few places where the learner can get lost and not know where to go next. Complex navigation schemes are not adequately explained.</p>	<p>4 points</p> <p>Navigation is seamless. It is always clear to the learner what all the pieces are and how to get to them.</p> <p>If the navigation scheme is somewhat complex, then it is explained to the learner.</p>			
Navigation: Mechanical Aspects	<p>0 points</p> <p>There are more than 5 broken links, misplaced or missing images, badly sized tables, misspellings and/or grammatical errors.</p>	<p>1 point</p> <p>There are some broken links, misplaced or missing images, badly sized tables, misspellings and/or grammatical errors.</p>	<p>2 points</p> <p>No mechanical problems noted.</p>			

Text Use	0 points	2 points	4 points			
	<p>Too many different types of fonts are used.</p> <p>Selected fonts are difficult to read.</p> <p>Text in tables exceeds 8 – 15 words per line.</p> <p>Paragraphs are too long, with no use of bulleted items.</p>	<p>There is some variation in type size, color, and layout.</p> <p>Fonts are easy to read (san serif for small font sizes).</p> <p>A little too much text, and minimal use of bulleted items.</p>	<p>Differences in type size and/or color are used well and consistently.</p> <p>Fonts are easy to read.</p> <p>Text is formatted and spaced well, with paragraphs limited to 8-15 words per line and spaces between paragraphs.</p>			
Total Score [14 points possible]:						

WebQuest Component Scoring Rubric

	Beginning	Developing	Accomplished	Site Scores		
				1	2	3
Introduction						
Motivational Effectiveness of Introduction	0 points The introduction is purely factual, with no appeal to relevance or social importance	1 point The introduction relates somewhat to the learner's interests and/or describes a compelling question or problem.	2 points The introduction draws the reader into the lesson by relating to the learner's interests or goals and/or engagingly describing a compelling question or problem.			
	OR The scenario posed is transparently bogus and doesn't respect the media literacy of today's learners.					
Task (The task is the end result of student efforts... not the steps involved in getting there.)						
Cognitive Level of the Task	0 points Task requires simply comprehending or retelling of information found on web pages and answering factual questions.	2 points Task is doable but is limited in its significance to students' lives. The task requires analysis of information and/or putting together information from several sources.	4 points Task is doable and engaging, and elicits thinking that goes beyond rote comprehension. The task requires synthesis of multiple sources of information, and/or taking a position, and/or going beyond the data given and making a generalization or creative product.			
Process (The process is the step-by-step description of how students will accomplish the task.)						
Clarity of Process	0 points Process is not clearly stated. Students would not know exactly what they were supposed to do just from reading this.	2 points Some directions are given, but there is missing information. Students might be confused.	4 points Every step is clearly stated. Most students would know exactly where they are at each step of the process and know what to do next.			
Richness of Process	0 points Few steps, no separate roles assigned.	1 point Some separate tasks or roles assigned. More complex activities required.	2 points Different roles are assigned to help students understand different perspectives and/or share responsibility in accomplishing the task.			

Resources (Note: you should evaluate all resources linked to the page, even if they are in sections other than the Process block. Also note that books, video and other off-line resources can and should be used where appropriate.)

Relevance & Quantity of Resources	0 points	2 point	4 points			
	Resources provided are not sufficient for students to accomplish the task. OR There are too many resources for learners to look at in a reasonable time.	There is some connection between the resources and the information needed for students to accomplish the task. Some resources don't add anything new.	There is a clear and meaningful connection between all the resources and the information needed for students to accomplish the task. Every resource carries its weight.			
Quality of Resources	0 points	2 points	4 points			
	Links are mundane. They lead to information that could be found in a classroom encyclopedia.	Some links carry information not ordinarily found in a classroom.	Links make excellent use of the Web's timeliness and colorfulness. Varied resources provide enough meaningful information for students to think deeply.			
Evaluation						
Clarity of Evaluation Criteria	0 points	1 points	2 points			
	Criteria for success are not described.	Criteria for success are at least partially described.	Criteria for success are clearly stated in the form of a rubric. Criteria include qualitative as well as quantitative descriptors. The evaluation instrument clearly measures what students must know and be able to do to accomplish the task.			
Total Score [22 points possible]:						

WebQuest Instructional Design Scoring Rubric

	Beginning	Developing	Accomplished	Site Scores		
				1	2	3
Introduction						
Instructional Context	<p>0 points</p> <p>The instructional context does not provide meaning or purpose for learning the intended skills.</p>	<p>2 points</p> <p>The instructional context provides some meaning and purpose for learning the intended skills, but the context is contrived and somewhat less-than-authentic.</p>	<p>4 points</p> <p>The context provides meaning and purpose to all the skills the WebQuest is designed to facilitate.</p>			
Cognitive Effectiveness of the Introduction	<p>0 points</p> <p>The introduction doesn't prepare the reader for what is to come, or build on what the learner already knows.</p>	<p>1 point</p> <p>The introduction makes some reference to learner's prior knowledge and previews to some extent what the lesson is about.</p>	<p>2 points</p> <p>The introduction provides opportunities for the learners to identify in some way those skills, knowledge, and attitudes already needed to succeed within the new learning environment.</p> <p>Opportunities are provided in for learners to relate what they will be learning (goals and objectives) to what they already know how to do.</p>			
Big Picture	<p>0 points</p> <p>No attempt is made to relate the WebQuest to a larger conceptual, intellectual, or social context.</p>	<p>1 points</p> <p>Information is provided that relates the WebQuest to a larger conceptual, intellectual, or social context, but the learners are not encouraged to reflect upon or create this "Big Picture"</p>	<p>2 points</p> <p>Learners are encouraged to create and/or reflect on a "Big Picture" that focuses attention on the bigger conceptual, intellectual, and/or social contexts in which the current instructional goals reside.</p>			

Role Definitions	0 points	1 point	2 points			
	The roles of the learners and instruction (instructor, resources) are not clearly defined.	If cooperative groups are encouraged, the roles of each group member are described, but mechanisms for individual accountability and/or interdependence are not clear. Also, the role of the instruction (the instructors and other support mechanisms) may not be clearly identified.	The introduction establishes clearly-perceived learner accountability, role(s) and task(s) within the learning environment, Clearly-perceived instructor role(s) and learner support mechanisms are also established			
Connection of Task to Standards	0 points	1 point	2 points			
	The task is not related to standards.	The task is referenced to standards but is not clearly connected to what students must know and be able to do to achieve proficiency of those standards.	The task is referenced to standards and is clearly connected to what students must know and be able to do to achieve proficiency of those standards.			
Activities						
Scaffolding of Process	0 points	2 points	4 points			
	The process lacks strategies and organizational tools needed for students to gain the knowledge needed to complete the task.	Strategies and organizational tools embedded in the process are insufficient to ensure that all students will gain the knowledge needed to complete the task.	Access to learning scaffolds is clearly identified, especially procedural scaffolds (guidance on how to utilize resources and tools, such as how-to sheets, peer tutors, guided tours, maps and overview diagrams, tables of content, search engines, etc.) The process provides students coming in at different entry levels with strategies and organizational tools to access and gain the knowledge needed to complete the task. Checks for understanding are built in to assess whether students are getting it.			

Relationships Between Separate Activities	<p>0 points</p> <p>Activities are of little significance to one another and/or to the accomplishment of the task.</p>	<p>1 point</p> <p>Some of the activities do not relate specifically to the accomplishment of the task.</p>	<p>2 points</p> <p>Activities are clearly related and designed to take the students from basic knowledge to higher level thinking (if applicable).</p>			
Instructional Strategies	<p>0 points</p> <p>No attempt is made to provide easy access to strategies that will help the learners acquire the skills that the WebQuest intends.</p>	<p>2 points</p> <p>Access to some specific instructional strategies is provided, but they may not be the most adequate for the type(s) of skills facilitated. For example:</p> <p>Examples are provided, but the WebQuest should provide more.</p> <p>The process of performing or applying rules is not broken down into steps for the learners.</p>	<p>4 points</p> <p>Access to appropriate instructional strategies is provided. For example, if the WebQuest is designed to help facilitate intellectual skills, then the following strategies should be available:</p> <p>Varied examples or instances of concepts and rule applications are presented. Nonexamples or noninstances of new concepts are also provided if they help clarify meaning.</p> <p>The process of performing or applying rules is broken down into steps, and the application of new rules are demonstrated (with access to expert performances whenever possible)</p>			

Practice & Feedback						
Practice and Feedback	0 points	2 points	4 points			
	No practice with adequate feedback is provided over the specific skills that the WebQuest is designed to facilitate.	Some practice over specific skills is provided, but feedback is inadequate. No strategies are employed to help facilitate individual practice when groups of learners are experiencing the WebQuest together.	Practice is provided over skills, knowledge and attitudes indicated within objectives (if objectives are stated). If groups are used, strategies are employed to ensure that all group members receive adequate practice/feedback over the intended instructional objectives. Group practice and consensus-building strategies are provided (if groups are used). Feedback is as immediate as possible.			
Review						
Review	0 points	1 point	2 points			
	No opportunities to review are included in the WebQuest.	Learners are directed to review the WebQuest experience, but the review only addresses some (not all) of the following elements: - Learners summarize key ideas - Learners identify how the new skills acquired fit into the "Big Picture" - The instruction restates the goal/objectives	Opportunities are provided for learners to summarize the key ideas emerging from the learning experience. Opportunities are provided for learners to reflect upon and articulate what they learned and how they personally learned it. Opportunities are provided for learners to identify how their newly-acquired skills, knowledge and attitudes fit into the "Big Picture" presented at the beginning of the experience. The instruction restates the instructional goal(s) and objectives.			
Total Score [28 points possible]:						

National [& Other] Standards Resources

http://pt3.nau.edu/resources/workshops/wkshp1/standards_menu.htm

Language Arts

National Council of Teachers of English
<http://www.ncte.org/standards/thelist.html>

Arts

National Standards for Art Education
http://artsedge.kennedy-center.org/professional_resources/standards/natstandards/index.html

Information Problem Solving

Big Six Skills for Information Problem Solving by Michael Eisenberg & Bob Berkowitz
<http://www.big6.com>

Science

Projec2061: Benchmarks for Scientific Literacy
American Association for the Advancement of Science
<http://www.project2061.org/tools/benchol/bolframe.htm>

National Science Education Standards
<http://www.nap.edu/html/nses/html/> <http://www.nap.edu/html/nses/html/>

Mathematics

Principles and Standards for School Mathematics
National Council of Teachers of Mathematics
<http://standards.nctm.org/>

History

National Center for History in the School's *National Standards for History Basic Edition (1996)*
<http://www.sscnet.ucla.edu/nchs/standards/>

Geography

National Geographic's 18 Geography Standards
<http://www.nationalgeographic.com/resources/ngo/education/standardslist.html>

Nutrition

United States Department of Agriculture's Dietary Guidelines for Americans
<http://www.dga2000training.usda.gov/>

Social Studies

National Council for the Social Studies
<http://www.socialstudies.org/standards/toc.html>

Technology

National Educational Technology Standards (NETS)
International Society for Technology in Education
<http://cnets.iste.org>

Thinking and Reasoning

Thinking and Reasoning Standards
Mid-Continent Regional Educational Laboratory
<http://www.mcrel.org/compendium/Standard.asp?SubjectID=21>

Working with Others

Working with Others Standards
Mid-Continent Regional Educational Laboratory
<http://www.mcrel.org/compendium/Standard.asp?SubjectID=22>