Is Nursing Ready for WebQuests?

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ABSTRACT

Based on an inquiry-oriented framework, WebQuests facilitate the construction of effective learning activities. Developed by Bernie Dodge and Tom March in 1995 at the San Diego State University, WebQuests have gained worldwide popularity among educators in the kindergarten through grade 12 educational sector. However, their application at the college and university levels is not well documented. WebQuests enhance and promote higher order-thinking skills, are consistent with Bloom’s Taxonomy, and reflect a learner-centered instructional methodology (constructivism). They are based on solid theoretical foundations and promote critical thinking, inquiry, and problem solving. There is a role for WebQuests in nursing education. A WebQuest example is described in this article.

WebQuests are innovative, inquiry-based learning activities that use computer technology to engage and prompt students, individually or collaboratively, to seek, analyze, and synthesize data in the construction of new knowledge or meaning. A learner-centered approach to teaching, WebQuests draw on many learning philosophies and strategies, including constructivist philosophy, authenticity and situated learning environments, scaffolding, cooperative learning, and motivation (Lamb & Tellehaimanot, 2005).

WebQuests, which were developed in 1995 by Bernie Dodge and Tom March, professors at San Diego State University, have gained worldwide popularity in the kindergarten through grade 12 educational environment. However, the notion of WebQuests migrating to colleges and universities is not evident in the literature. Now is an opportune time for the nursing profession to consider WebQuests’ pedagogical foundations, the educational principles they embody, the cognitive activities they stimulate in learners, and how they might be used in a nursing context.

Dodge (2001) defined a WebQuest as:

an inquiry-oriented activity in which most or all of the information used by learners is drawn from the Web. (p. 7)

According to Dodge (1995), there are six essential features of a WebQuest:

- An introduction that explains the activity and provides background information.
- A task that is feasible and interesting.
- A set of information sources needed to complete the task.
- A description of the process the learners should follow to complete the task.
- An outline of the evaluation criteria, known as rubrics or evaluation matrices.
- A conclusion that ends the quest.

Description

Usually, WebQuests are designed in hypertext markup language (HTML) by educators and posted on the Internet on course home pages or learning management systems such as WebCT® or Blackboard®. Most major word processing programs now allow users to save or convert their text into HTML. WebQuests may be used in face-to-face learning environments or in Web-based instruction. A WebQuest is essentially simple to construct. It begins with a creative idea, followed by the application of the six essential features. Resources on WebQuests abound on the Internet. The most enduring Web site on the topic is that of WebQuest co-creator Dr. Bernie Dodge (1995).

The Table describes a WebQuest designed for a course in a baccalaureate program for RNs at a western Canadian university. The WebQuest demonstrates some of the concepts that will be discussed in this article, including constructivism, inquiry, scaffolding, and critical thinking.

Congruency with Pedagogical Approaches

Constructivism

Twomey (2004) noted that:

constructivism seems to be accepted as a suitable theoretical framework for designing and delivering web-
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There are several examples of the use of constructivism in nursing curricula and nursing education, some applied in online environments (Ali, Hodson-Carlton, & Ryan, 2004; Jairath & Stair, 2004; Ryan, Hodson-Carlton, & Ali, 2005) and some in traditional classroom settings (Lickteig, 2004; Weeks, Lyne, Mosely, & Torrance, 2001). Educators can imbue constructivist principles in their courses by applying the WebQuest approach to prompt and enable students to engage in higher-order thinking skills, and then reconstruct data in new ways that have new meaning. Well-designed WebQuests expose students to a variety of contexts and perspectives and encourage them to think about the influence of that context on other criteria (Vidoni & Maddux, 2002).

Inquiry
Inquiry is the process of formulating questions, organizing ideas, exploring and evaluating information, analyzing and synthesizing data, and communicating findings and conclusions (Lamb & Teclerainot, 2005).

TABLE

Learning Styles WebQuest

<table>
<thead>
<tr>
<th>Introduction</th>
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<tbody>
<tr>
<td>We learn in different ways. Sometimes we define the way we learn as learning styles or learning preferences. Knowing our individual learning styles can help us learn and teach in more effective and efficient ways.</td>
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<tr>
<th>Task</th>
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<td>In this WebQuest, you and another student will visit a number of Web sites and participate in online tests that will help you identify your learning styles. Then you will assume the role of nurse educators and apply what you have learned by developing a lesson plan for a chosen scenario.</td>
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<th>Resources (Learning Styles Web Sites)</th>
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<tr>
<td>Paragon learning styles (<a href="http://www.calstatela.edu/faculty/jshindl/plsi/taketest.htm">http://www.calstatela.edu/faculty/jshindl/plsi/taketest.htm</a>)</td>
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<td>Multiple intelligences inventory (<a href="http://www.surfaquarium.com/MI/inventory.htm">http://www.surfaquarium.com/MI/inventory.htm</a>)</td>
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<tr>
<td>Vark learning styles (<a href="http://www.vark-learn.com/english/index.asp">http://www.vark-learn.com/english/index.asp</a>)</td>
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<td>Barsch inventory (<a href="http://ww2.nscc.edu/gerth_d/AAA0000000/barsch_inventory.htm">http://ww2.nscc.edu/gerth_d/AAA0000000/barsch_inventory.htm</a>)</td>
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<tr>
<td>Index of learning styles (<a href="http://www.engr.ncsu.edu/learningstyles/ilsweb.html">http://www.engr.ncsu.edu/learningstyles/ilsweb.html</a>)</td>
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<tr>
<td>Bloom’s Taxonomy (<a href="http://www.nwlink.com/%7Edonclark/hrd/bloom.html">http://www.nwlink.com/%7Edonclark/hrd/bloom.html</a>)</td>
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<th>Process</th>
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<tr>
<td>Step 1. Complete as many learning style online tests as you like, but choose two you feel work best for you or with which you would like to work. Provide rationale for your choices.</td>
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<tr>
<td>Step 2. Compare and contrast the results of your two chosen learning style tests.</td>
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<td>Step 3. Speculate on the meaning of similarities and differences.</td>
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<tr>
<td>Step 4. Briefly discuss something new you have learned about how you learn.</td>
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<tr>
<td>Step 5. Submit a two-part report.</td>
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</table>

1. Document your responses to steps 1 through 4 (2 page maximum).

2. Design a simple lesson plan (4 page maximum). Chose one of the scenarios listed below. You will assume that your students or colleagues have learning styles similar to the ones chosen in step 1. In your lesson plan, you will:
   - Write an introduction
   - Articulate three learning objectives. Referring to the Bloom’s Taxonomy Web site, you will write two learning objectives at the higher order level (analysis, synthesis, evaluation) from the cognitive domain using the keywords given and one learning objective at the affective or psychomotor domain, also at the higher-order level.
   - Briefly discuss four teaching strategies you would use. The strategies you choose must be congruent with the two learning styles tests you chose in step 1. Revisit the online learning styles test Web sites to determine which strategies are appropriate.
   - Develop three higher-order level questions that will stimulate student discussion. Based on Bloom’s Taxonomy (key words), articulate one question for each of the higher-order level domains. There are model questions at this site to help you get started.
   - Briefly discuss how your questions should stimulate critical thinking.
   - Select a reading from a book or journal that you will recommend to your students or colleagues. State your rationale for recommending this reading.

Based courses...and that constructivism can be an appropriate theory to promote the educational needs of registered nurses. (p. 455)
WebQuests lend themselves well to the nature of inquiry. Dodge, Molebash, Bell, Mason, and Irving (2002) contended that in terms of promoting student inquiry, WebQuests support learners’ thinking levels of analysis, synthesis, and evaluation, which are important components of inquiry-based learning.

Congruency with Cognitive Activities Related to Learning

The literature on WebQuests principally addresses how they exemplify or embody constructivist instructional principles and teaching-learning strategies as they apply to online learning environments. Some of the more important cognitive activities related to WebQuests include critical thinking, collaborative learning, scaffolding, and problem solving.

Critical Thinking

Nurse educators agree that critical thinking is integral to nursing practice and education (Leppa, 2004; Malloy & DeNatale, 2001) and that it is recognized by accrediting bodies as a significant outcome for graduates at the baccalaureate and master’s level (Ali, Bantz, & Sikthberg, 2005). WebQuests can be used to encourage and direct critical thinking. Crawford and Brown (2002) stated that WebQuests emphasize higher-order thinking skills, which correspond to the higher levels of Bloom’s Taxonomy, namely analysis, synthesis, and evaluation. In their discussion on a review of the nursing literature on critical thinking, Vidoni and Maddux (2002) suggested that WebQuests may be used to inspire critical thinking in students.

Collaborative Learning

Collaborative learning is a major pillar of the constructivist model used in online learning environments and traditional academic settings. It is a valued attribute in nursing education and practice (Chaffin & Maddux, 2004; DeBourgh, 2001; Thiele, Allen, & Stucky, 1999).

Compared with individual learning, online collaborative learning is a more effective strategy when teaching problem solving skills (Uribe, Klein, & Sullivan, 2003). Ali et al. (2004) found that students learned by reflection, introspection, interaction with faculty and other students, sharing information, and group dynamics. Nursing educators can use WebQuests to structure group activities, such as collaborative projects, that foster social interactions. There are a number of ways this can be done:

- Assignment of roles to play on a team during a debate on nursing’s role in community development.
- A professional conduct review committee that deliberates on a fictitious case of nursing incompetence.
- A nursing contingent of a Healthy Living/Healthy Kids Task Force.
- An investigative news crew responding to public concerns of long waiting lists for elective surgery.
- A team to implement primary health care in a rural community.
- An ethics review board that considers a research application for a study of the influence of secondhand smoke on the growth and development of preschool children.

Scaffolding

Scaffolding is a hallmark of WebQuest construction. Sharma and Hannafin (2004) wrote about the importance of scaffolding in promoting critical thinking in computer-mediated environments. In WebQuests, scaffolding is embedded in the design and may take the form of
an authentic task or problem to solve, assigned roles, and provision of resource links, outlines, templates, process guides, and evaluation rubrics.

**Problem Solving**

Gohagan (2000) noted that WebQuests enhance problem solving skills by allowing students to expand and refine their knowledge base and strengthen their skills for finding and integrating their new skills. In addition, WebQuests can be designed to have students work in cooperative learning groups, a technique that has proven successful for promoting problem solving skills (Wooster & Lemcool, 2003). The essence of a WebQuest is to have students complete a task or solve a problem using a variety of thinking skills such as comparing, classifying, and generalizing principles from observations or analysis, deduction, analysis of issues, and evaluation of their product.

**Future Research**

Most of the discourse in the literature on WebQuests has occurred in the kindergarten through grade 12 academic environment, and has focussed on its theoretical underpinnings and congruency with educational approaches and instructional strategies. More research on the implementation and evaluation of WebQuests at college and university levels needs to be conducted.

Most important, there is a need for research on WebQuests as they apply to a nursing context. Potential areas of study in nursing could include the application of WebQuests in basic, postdiploma, and graduate nursing programs, particularly in courses offered online. Research could also help identify approaches within WebQuests that increase student motivation and learning. As an instructional strategy, WebQuests can play a role in enhancing critical thinking in nursing students.

**Conclusion**

Nursing is ready for WebQuests, and there is a role for WebQuests in nurse educators’ repertoires of instructional strategies at the college or university levels. Gold (2001) suggested that from a constructivist point of view, learning is a search for meaning. Using WebQuests, nurse educators can help students find meaning by constructing learning, building in multiple perspectives, creating a context relevant to the learners’ previous knowledge, and developing an evaluation framework to guide the learners. Nurse educators can incorporate WebQuests into educational activities, with the knowledge that they are based on sound pedagogical approaches and are congruent with accepted learning principles.

**References**


