Constructing creative learning: The webquest

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Quality care is at the heart of nursing practice, and good nursing practice is fundamental to high-quality health care. Providing for the continued development of nursing staff is essential to nurse competency, nurse retention, and optimal patient outcomes. Nurses, as the largest group of providers of patient care in the world, must be offered the opportunity to continually grow and develop in their profession to achieve employment satisfaction and offer the quality, evidence-based care that is central to health care. Nurses are in a powerful position to improve and assure optimal outcomes of care at all levels. However, practicing nurses face a number of challenges. Higher-acuity patients require considerable time at the bedside as well as expert knowledge to assure maximum outcomes. Nurses must receive continuing education and staff development to ensure that this challenge will be met. Providing continuing education, academic education, and staff development has long been a way to prevent the loss and turnover of nursing staff. Continuing education is a motivator and benefit to practicing nurses. Nurses who feel valued and competent in their environment are more likely to be satisfied with their work and their ability to provide sound, evidence-based patient care.

Kotzer and Arellana (2008) suggested that there is an increasing need for highly skilled, educated nurses to care for acutely ill patients and noted that 30% of new graduate nurses leave the nursing profession within 1 year of employment. They also noted that 57% of nurses leave their first position within 2 years, often because they are overwhelmed and distressed, and lack essential knowledge to care safely and adequately for their patients. Buerhaus, Auerbach, and Staiger (2009) stated that although the current recession in the United States has eased the nursing shortage, its effect is likely to be temporary, and by 2025, an estimated 260,000 registered nurses will be needed to care for the aging population. The current economic environment, the number of unemployed and uninsured patients, and the number of nonpaying patients will affect the bottom line of reim-

Abstract

An exciting expansion of online educational opportunities is occurring in nursing. The use of a WebQuest as an inquiry-based learning activity can offer considerable opportunity for nurses to learn how to analyze and synthesize critical information. A WebQuest, as a constructivist, inquiry-oriented strategy, requires learners to use higher levels of thinking as a means to analyze and apply complex information, providing an exciting online teaching and learning strategy. A WebQuest is an inquiry-oriented lesson format in which most or all of the information learners work with comes from the web. This article provides an overview of the WebQuest as a teaching strategy and provides examples of its use.

bursary costs. Uncertainty about health care reform and the future of the health care system makes it imperative that health care organizations value and retain each nurse. Continuing education must be offered via a cost-effective model that allows nurses to master new knowledge as well as technological and clinical skills.

The cost to orient nurses and maintain current competencies can be high, as can the cost to refocus or transfer a nurse to a new patient care area. If the goal is to keep nurses at the bedside and not in a classroom, alternative educational models must be examined. Computers are readily available on most nursing units, and the Internet can provide relatively inexpensive instructional opportunities. This article discusses the use of the WebQuest, a comprehensive and inquiry-oriented strategy, as an alternative to traditional continuing education.

The technological revolution has created a new paradigm for the delivery of all types of education. In the recent past, the use of the World Wide Web has provided opportunities for learning new platforms to design online learning environments. Web-based education affords increased flexibility, allowing nurses to take classes at home or at work at any hour. Continuing education has long been a motivator and benefit for practicing nurses. Continuing education offered to all facility nurses may increase nurse satisfaction, decrease turnover, and improve the work environment, resulting in higher levels of patient satisfaction (Strachota, 2003).

The WebQuest, an inquiry-based learning tool, affords many opportunities for creative lifelong learning. Inquiry-based environments can easily assist learners to problem-solve and think critically in complex situations (WebQuest.org, 2007). As practicing professionals continue to appreciate the flexibility and convenience of the around-the-clock availability of online courses, the WebQuest learning activity will offer an additional opportunity for flexible learning. Use of the Internet for learning opportunities reduces the need for travel to continuing education offerings, thereby decreasing the need for personal time away from family, travel-related expenses, and time off from work (Billings, 2007; Suen, 2005). This in turn can save the facility a considerable amount of money.

Unit-based nursing and staff development educators, similar to educators in academia, are learning to design, teach, and evaluate learners within a new educational paradigm. Nursing recognizes that technological advances are dramatically increasing opportunities to improve the quality of and access to nursing education. The American Association of Colleges of Nursing (1999) reported that distance learning has historically increased access to education. The careful use of technology for continued education may enhance the profession’s ability to educate nurses for practice; prepare future nurse scholars, practitioners, and educators; and advance nursing science. Currently, the number of professional nurses, qualified nurse faculty, and nurse researchers is well below the national need.

WEBQUEST

WebQuest, developed by Dodge and March in 1995, provides a constructivist inquiry framework for learning (Dodge, 2007; WebQuest.org, 2007). The underlying premise of the constructivist theory is that individuals learn by constructing an understanding and knowledge of the world through experience and reflection. Constructivism requires that the learner explore problems or potential problems, ask questions, assess what is known, and develop a strategy to intervene (Concept to Classroom, 2008). Therefore, learners are active creators of their own knowledge. The WebQuest encourages learning at the highest level of achievement, according to Bloom’s Taxonomy, and offers educators and nurses the opportunity to direct and individualize learning in a number of creative ways. A WebQuest may also provide exceptional visual content, depending on the media and mechanisms used (Education World, 2008).

COMPONENTS OF A WEBQUEST

The development of a WebQuest is similar to the development of other learning activities. Learners are oriented, directed to an interesting and appropriate task, provided with resources and guidance, and told how they will be evaluated. Finally, the task is summarized with a conclusion (Internet for Classrooms, 2008). WebQuest design is creative and engaging and interesting to learners. The introduction component of the WebQuest is used to orient the learner to the task at hand. A quality introduction will be relevant to the learner’s experience and goals and will also be attractive, important, urgent, and fun (WebQuest.org, 2007). The introduction in a WebQuest sets the tone and stage for the activity and provides pertinent background information (Internet for Classrooms, 2008). The introduction should grab the learner’s attention, immerse the learner in an issue, establish the setting, and include the goal or purpose of the learning activity (WebQuest.org, 2007).

A well-designed WebQuest is developed around an engaging and enjoyable task that encourages and facilitates higher thinking. The task, probably the most important component, is not simply reciting information, but requires an application of information. The variety of tasks is limited only by the creativity of the designer.
Examples of tasks include development of brochures, PowerPoint presentations, posters, debates, reports, oral presentations, webcasts, podcasts, website reviews, and journals. The process component of the WebQuest is the step-by-step process the learner follows to complete the task. The designer sends learners to websites that answer questions or provide information so that learning can take place. Information may also be introduced during the process to help students complete a more focused WebQuest (WebQuest.org, 2007). Learners are provided with a description of the process to accomplish the task in distinct, easily understood steps (Marzano et al., 1991).

Evaluation of the WebQuest is necessary to assess the effectiveness of often complex and subjective criteria (Internet for Classrooms, 2008). A rubric is an assessment tool that is useful in WebQuest evaluation. Rubrics are designed for WebQuest evaluation based on the nature of the task to be completed. Rubrics for oral presentations would include content, timing, and delivery, whereas those for a multimedia presentation would include graphic design and user engagement. A rubric template can be downloaded (Pickett & Dodge, 2007). This rubric can be easily adapted to any WebQuest. The conclusion of the WebQuest is a summary of the activity and is intended to provide a time for learners to reflect on the experience. A brief conclusion reminds students of what they have learned, encourages them to extend the experience to other domains, and brings closure to the experience (WebQuest.org, 2007).

**EXAMPLES**

Nurses tend to develop highly specialized skills in their practice settings. When a nurse transfers from one hospital unit to another or changes health care settings altogether, there will most likely be a need for continuing education that focuses on specific prevalent practice issues. The following are examples of how a WebQuest can be used as an orientation activity in the acute care setting, addressing the prevention and treatment of pressure ulcers, and in the home health setting, as a means to understand the caregiver experience.

**Acute Care: Pressure Ulcer Prevention and Treatment**

*Introduction.* You are a nurse transferring from the emergency department to 5 West, a general medical-surgical unit. Your skills are excellent and you are considered a strong emergency department nurse, but it has been several years since you have cared for patients on a medical-surgical unit. You are having orientation today and will be working with another nurse in the care of her patients. Mr. Johnson is a 67-year-old man who until 1 week ago was active and living independently at home. He began to complain of dark red gastrointestinal bleeding and was diagnosed with esophageal varices and cirrhosis of the liver. He was admitted to the medical intensive care unit for 3 days of care that included beta blockers and variceal ligation. Today, on 5 West, he remains somewhat anemic, is disoriented to time, and has begun drinking clear liquids. He continues to be weak and requires full assistance with activities of daily living. You note that Mr. Johnson has limited mobility and possible nutritional deficits that put him at risk for the development of pressure ulcers. This WebQuest reviews current trends in pressure ulcer prevention and treatment and assists you to understand the significance of pressure ulcers and to plan appropriate care for Mr. Johnson.

**Task.** You will review current trends and standards, learn how to assess for pressure ulcers, and learn how to plan interventions to prevent their occurrence. After completing the evaluation of current recommendations and developing a plan of care, you will work with two other nurses from 5 West to develop a poster on pressure ulcer prevention and care. Each member of the team is to complete the WebQuest. The team will then meet to discuss the recommendations and choose what content and guidelines to include on the poster. The poster will be presented to 5 West staff at the next unit meeting and to other hospital nurses on Nurses’ Day.

**Process.**

1. What is a pressure ulcer? View the definition of a pressure ulcer at the website of the National Pressure Ulcer Advisory Council (www.npuaap.org/pr2.htm).

2. Why is it important to prevent pressure ulcers? According to the Institute for Healthcare Improvement, there are some significant reasons to prevent pressure ulcers. See the Institute for Healthcare Improvement 5 Million Lives Campaign How-to Guide on Preventing Pressure Ulcers (www.ihi.org/NI/rdonlyres/5ABABB51-93B3-4D88-AE19-BE88B7D96858/0/PressureUlcerHowtoGuide.doc).

3. According to the Centers for Medicare & Medicaid Service, stage 3 and 4 pressure ulcers are considered “never events.” What does this mean? What is the average cost to treat a pressure ulcer, and how does that affect reimbursement to your hospital? This information can be found on the Centers for Medicare & Medicaid Service website (www.cms.hhs.gov/apps/media/press/release.asp?Counter=1863).

4. The Joint Commission has identified the prevention of pressure ulcers as one of their National Patient Safety Goals (www.jointcommission.org/Accreditation-
5. How do you decide if your patient is at risk for a pressure ulcer? The Braden scale for predicting pressure ulcers was developed to help nurses determine who is at risk. Watch an online video from the Hartford Institute for Geriatric Nursing for a presentation of this assessment tool (www.nursingcenter.com/TryThis/Survey.asp?Ep=3&Ch=0). Another website links to written information about the Braden scale (www.innovations.ahrq.gov/content.aspx?id=2403).

6. To review the current guidelines for pressure ulcer prevention and care, review the course content at the American Nurses Association National Database of Nursing Quality Indicators website (www.nursingquality.org/NDNQIPressureUlcerTraining/Default.aspx).

7. The Agency for Healthcare Research and Quality Healthcare Innovations Exchange presents examples of how hospitals have implemented pressure ulcer prevention programs. Review one of the programs at their website (www.innovations.ahrq.gov/content.aspx?id=2355).

### Evaluation

The rubric template downloaded from the Rubrics for Web Lessons website (Pickett & Dodge, 2007) was used to develop an evaluation for this WebQuest (Table).

### Conclusion

You have reviewed the current guidelines for the prevention and treatment of pressure ulcers. You

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**TABLE**

| RUBRIC FOR EVALUATING THE PRESSURE ULCER PREVENTION AND TREATMENT WEBQUEST |
|--------------------------------------|-----------------|-----------------|-----------------|-----------------|
| **Element**                          | **Weight** | **Beginning**   | **Developing**  | **Accomplished** |
| Navigation and flow                  | 15%       | Confusing lesson; pages can't be found. | 1 or 2 websites that the learner can get lost navigating. | Navigation seamless. Clear to the learner what is needed from each website page. |
| Mechanical aspects                   | 15%       | > 5 broken links, misspellings, or grammatical errors. | < 2 broken links, misspellings, or grammatical errors. | No mechanical problems noted. |
| Introduction                         |           |                 |                 |                 |
| Motivates                            | 10%       | No relevance to nurse's learning. | Relates somewhat to nurse's learning. | Engages the nurse to learn material. |
| Task                                 |           |                 |                 |                 |
| Connection of task to standards      | 10%       | Task not related to standards. | Task refers to standards but is not clearly connected to what the nurse must know. | Task clearly connected to standards that the nurse must know to achieve proficiency. |
| Process                              |           |                 |                 |                 |
| Clarity of process                   | 10%       | Process not clearly stated. | Some directions given, but there is missing information. | Every step clearly stated. |
| Scaffolding of process               | 10%       | Unorganized with little linkage between assignments. | Some activities not related specifically to assignments. | All activities clearly related and designed for assignment success. |
| Resources                            |           |                 |                 |                 |
| Relevance and quantity               | 10%       | Inadequate or irrelevant resources. | Some resources inadequate. | Resources relevant, with information for the nurse to accomplish the task. |
| Quality                              | 10%       | Links insignificant. | Links acquire some information not found in a textbook. | Links give varied resources for meaningful information. |
| Evaluation                           |           |                 |                 |                 |
| Clarity of evaluation criteria       | 10%       | Criteria for success not described. | Criteria for success partially described. | Criteria for success clearly stated. |
| **Total score**                      |           |                 |                 | 100%            |

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Programs/LongTermCare/Standards/09_FAQs/NPSG/Pressure_ulcers/NPSG.14.01.01/Pressure+ulcers.htm).
now know how to use the Braden assessment tool and have access to resources to assist you in planning care. You have developed a plan of care for Mr. Johnson to prevent pressure ulcers and have worked as part of a team to develop a poster to share information with other nurses on 5 West and throughout the hospital. From this experience, you know that there are numerous excellent evidence-based patient care resources available on the Internet. Become familiar with clinical practice guidelines, such as those found at the Agency for Healthcare Research and Quality site, so that you can access this information for many other patient care issues. Congratulations on the completion of this WebQuest! This has been a challenging assignment, but a great learning experience.

Home Health Care: Understanding the Caregiving Experience

Introduction. Nurses, pressed for time, often focus on the skills needed to care for the patient and may forget that the patient is part of a family system. Chronically ill individuals commonly need assistance from a family member or friend, an informal caregiver, to help with tasks such as activities of daily living, managing finances, and scheduling doctor appointments. This WebQuest assists nurses who are new to the home health setting to understand the needs of the caregiver and analyze existing resources for caregiver support.

You are a new home health nurse completing an intake assessment for a newly discharged patient, Mr. Larraby, who had a stroke 6 weeks ago that resulted in right hemiplegia and expressive aphasia. Mr. Larraby requires moderate assistance with activities of daily living and complete assistance with instrumental activities of daily living. His wife of 42 years is at his side, and she answers all intake questions and provides a detailed history of his illness. As Mrs. Larraby answers your questions, you note that she frequently sighs and rubs her forehead. When you inquire about how she is feeling, she shares that “this stroke thing has left me exhausted for 2 months.” She says that she was so busy getting Mr. Larraby discharged from the rehabilitation facility that she forgot to take her antihypertensive medication. Larraby discharged from the rehabilitation facility that for 2 months.” She says that she was so busy getting Mr. Larraby discharged from the rehabilitation facility that she forgot to take her antihypertensive medication. Mrs. Larraby was discharged from the rehabilitation facility that for 2 months.” She says that she was so busy getting Mr. Larraby discharged from the rehabilitation facility that she forgot to take her antihypertensive medication. Mrs. Larraby discharged from the rehabilitation facility that for 2 months.” She says that she was so busy getting Mr. Larraby discharged from the rehabilitation facility that she forgot to take her antihypertensive medication. Mrs. Larraby discharged from the rehabilitation facility that for 2 months.” She says that she was so busy getting Mr. Larraby discharged from the rehabilitation facility that she forgot to take her antihypertensive medication. Mrs. Larraby discharged from the rehabilitation facility that for 2 months.” She says that she was so busy getting Mr. Larraby discharged from the rehabilitation facility that she forgot to take her antihypertensive medication.

This example is typical of problems that caregivers experience while focusing on the care needed by their family member or friend. Often caregivers experience stress or burdens that can be difficult to understand unless one has also been a caregiver. In this WebQuest, you will be reviewing the role of the caregiver and researching what nurses can do to assist these valuable members of society.

Task. As the newest member of the education committee for County Home Health, you will be exploring Mrs. Larraby’s role as a caregiver. You will assess her needs, evaluate resources for caregivers, and decide on the most appropriate recommendations to help Mrs. Larraby and others. These recommendations will be printed as a pamphlet or brochure that your committee will develop for use with Mrs. Larraby and caregivers you encounter in the future.

Process.

1. Review the statistics about the number of caregivers in the United States now and in the near future (www.familycaring101.org/not_alone/stats.cfm).
2. Select your state and compose a few sentences about the background characteristics of caregivers in your state (www.caregiver.org/caregiver/jsp/content_node.jsp?nodeid=1271).
3. Compare and contrast how your state caregiver statistics compare with the national average. Select pertinent information from these statistics, and write a paragraph to be used as background information in your institution’s brochure.
4. Review the stages of caregiving (www.agingcarefl.org/caregiver/fourStages). Reflect on what stage Mrs. Larraby is in as well as the stage of others you may care for at County Home Health.
6. Read a blog by caregivers and reflect on the comments (www.thecaregiversvoice.com/blog/blog). Do you see any consistency with what Mrs. Larraby has experienced? Are any of the comments similar?
7. Each committee member should review and evaluate two websites for caregiver resources.
8. Discuss the caregiver resource websites you evaluated. What information will you include in your brochure for County Home Health caregivers? Are the websites reputable? Work as a team to agree on content and develop your brochure.
9. In the staff meeting, discuss what you have discovered about caregiving. Share the caregiver resources brochure your committee has developed and ask for feedback. Before you use a brochure developed based on other sources, you may need to contact that institution or program developer for permission.

Evaluation. The rubric from the pressure ulcer prevention and treatment WebQuest could easily be adapted to evaluate this WebQuest example (Table). An additional consideration is that the WebQuest could be a required part of the orientation process for new home health nurses. The WebQuest task could be altered by
key points

Creative Learning

1. The WebQuest, an inquiry-based learning tool, affords many opportunities for creative lifelong learning.

2. The WebQuest learning activity offers practicing professionals flexible and convenient around-the-clock availability of online learning.

3. The evaluation rubric can be easily adapted to any WebQuest, saving educators time and resources when developing continuing education offerings for nurses.

WEBQUEST RESOURCES

Many resources are available for educators who want to learn more about WebQuest design. WebQuest use in education is becoming more prevalent, and educators are happy to share their work and encourage its adaptation and use in multiple disciplines. The online site Questgarden.com is an authoring tool and hosting service that provides guidance for WebQuest design and development (Questgarden, 2008). WebQuest.org, a site developed by Dodge (2007), includes a repository of WebQuests that can be accessed for free use. Additional resources include design patterns and templates for development, process checklists, and rubrics for evaluating WebQuests and learner performance (2007).

Dodge (2007) identified five general guiding principles that help instructors develop creative and innovative WebQuests. The first principle is to find great sites. The quality of websites greatly affects the usefulness and overall quality of the WebQuest. Sites that are readable, interesting, applicable, up-to-date, and user-friendly enhance the WebQuest process (WebQuest.org, 2007). Sites should always be evaluated by the nurse educator. The second principle is to orchestrate learners and resources (WebQuest.org, 2007). Nurse educators are especially innovative at organizing people and resources, having managed with insufficient supplies and funding. Internet sources and websites provide opportunities to use information from around the globe to help learners to think critically and solve problems. Activities should be organized to allow for efficient use of computer access time. Dodge’s third principle is to challenge learners to think (WebQuest.org, 2007). The task is the key element of an excellent WebQuest and should be creative, allowing learners to use high levels of thinking. In the past, memorizing factual information, such as laboratory values and side effects of medications, may have been sufficient. Now, nurses must use information for critical decision-making that can improve or harm a patient’s health. Accessing a computer and the Internet solely to obtain factual information is an underuse of valuable resources.

The fourth principle is to use the medium. Dodge (WebQuest.org, 2007) noted that the Internet is not only a network of computers, but also a network of people. Consider asking experts to engage learners in a conversation about the topic. Remember to take advantage of multimedia on the web when appropriate. YouTube and online video files are available. Learners can view podcasts of procedures or lectures. The final principle is to scaffold high expectations (WebQuest.org, 2007). Nurse educators must provide learners with support for the task so that they can attain higher levels of expectations.

CONCLUSION

Nurse educators are always searching for creative teaching techniques, and the need for engaging tools for learning has never been greater. WebQuests assist learners to assemble their own knowledge and meaning using readily available web-based information. WebQuest activities are limitless in design potential and engage learners by appealing to their intuitive sense and curiosity. As staff development educators continue to be challenged to do more with fewer resources, the use of a WebQuest can provide a creative and cost-effective learning activity.

REFERENCES

American Association of Colleges of Nursing, Task Force on Distance Technology and Nursing Education. (1999). White paper: Distance


