Use of a Virtual Community to Contextualize Learning Activities

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ABSTRACT

This article reports the experiences of two schools of nursing using a virtual community (VC) and how integrated teaching strategies were developed, which lessened the gap between didactic and clinical applications. Exemplars for nursing education practice are highlighted. The term *context* as used in nursing education, means placing the particular concept, topic, or skill in a setting where it is given enhanced meaning to the learner. This strategy allows nursing students to better retain knowledge and apply new concepts. The VC detailed in this article provides students with such context to enhance learning. It also enhances student engagement by adding an additional level of complexity and richness. One advantage of the VC is the ability to present nursing education beyond the acute inpatient care setting. The VC allows students to observe how illness progresses and exacerbations occur. This pedagogical shift moves from content-driven didactic instruction to a learner-centered approach.

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The recent Carnegie Foundation study, *Educating Nurses: A Call for Radical Transformation* (Benner, Sutphen, Leonard, & Day, 2010), found that teaching in the classroom is deficient of integrative strategies. Minimal opportunities exist for students to develop a sense of salience, clinical reasoning skills, and clinical imagination. Lecture material often is presented in a series of bullet point slides that fail to make a connection with patient care application. Benner et al. (2010) suggested that teachers step out from behind the podium and engage students in clinical-based learning experiences that require them to use knowledge and practice thinking. The purpose of this article is to share the experiences of faculty from two schools of nursing and to show how integrated teaching strategies using a virtual community (VC) were developed.

Background

The term *context* is defined as "the set of circumstances or facts that surround a particular event or situation" (*Dictionary.com*, n.d.). When the term *context* is used in nursing education, it means placing the particular concept, topic, or skill in a setting whereby it is given enhanced meaning to the learner. According to Giddens, Fogg, and Carlson-Sabelli (2010), this strategy allows nursing students to better retain knowledge and apply new concepts, especially among diverse learners due to the multicontextual linkages represented.

Virtual Community

A VC is a Web-based application featuring a cast of characters representing diverse cultures and backgrounds with an unfolding storyline. Medical histories and records and community-specific data are available within this particular VC. A few examples of VCs have been described in the literature (Giddens & Walsh, 2010). The VC used as a basis for this article is a commercially available application known as *The Neighborhood*™, published by Pearson Education.

The VC provides students with context to enhance learning. It also enhances student engagement by adding an additional level of complexity and richness. One advantage of the VC is the ability to present nursing beyond the acute inpatient care setting. The VC allows students to observe how illness progresses and exacerbations occur. This pedagogical shift moves from content-driven didactic instruction to a learner-centered approach (Kantor, 2010), which allows students to observe situations unfolding over time. This strategy fosters a forward-thinking per-

spective in which students are forced to consider alternatives by critically thinking about the patient.

Teaching Exemplars Across the Curriculum

We have found that the use of a VC enhances teaching and learning in multiple applications across the curriculum. Some curriculum examples include a clinical skills laboratory, a health assessment, and didactic courses, such as Fundamentals, Medical–Surgical Nursing, and Leadership and Management.

Clinical Skills Laboratory

Most clinical laboratory experiences traditionally focus on the acquisition of psychomotor skills, such as the insertion of a Foley catheter or nasogastric tube or learning to change a wound dressing. Too often, students are so focused on the steps needed to master the skill that they forget to consider the unique needs of the patient. The use of task trainers, such as a pelvic model or nasogastric insertion model, have removed the patient-centric aspect of nursing care. In most laboratory settings, there is, on average, a 12:1 student-to-faculty ratio. While students await their turn to practice or demonstrate a particular skill for the instructor, there is often significant downtime, which is a wasted opportunity for salient teaching to occur. By incorporating the VC into the laboratory experiences, students have the opportunity to practice the skill on a model representing an actual patient, as well as to discuss the implications of the skill specifically as it applies to one or more VC characters, which provides an opportunity for the clinical instructor to broaden the students' perspective. This shift moves beyond the steps of the skill acquisition toward a discussion related to the rationale for the procedure and its impact on the VC character's quality of life. By adding this additional dimension, students have a better appreciation for the unique needs of the patient.

For example, one VC character requires continuous bladder irrigation after a transurethral resection of the prostate. The ensuing discussion includes why catheterization is needed, identifies related pathophysiology, and progresses to patient education and quality of life. The clinical laboratory faculty leads the discussion, ensuring time for practice as well. After a student successfully inserts a Foley catheter and sets up the bladder irrigation, he or she documents the procedure in the character's electronic medical record, adding yet another dimension of realism.

Another opportunity for a contextual laboratory experience is with wound care. Typically, a faculty member would demonstrate wound care by using a wound task trainer set on a table or by using a static mannequin. However, by using a character from the VC, wound care becomes a dynamic interplay based on that particular patient. Information, such as why the patient developed the wound and the reasons it is not healing, is an important aspect for the student to reflect on. In addition, having students produce evidence-based recommendations provides another learning opportunity.

The students are required to know the VC character's background and story before coming to the laboratory. In another example, the VC character has poorly controlled diabetes and limited socioeconomic resources; therefore, the ensuing discussion would also include issues such as access to health care, management of diabetes, nutrition, and environment of care. The laboratory faculty agree that by using the characters from the VC, the discussions are more robust and allow the student to contextualize a particular clinical scenario.

The use of these types of real-time case scenarios have allowed for active learning, thereby encouraging students to apply the knowledge gained to actual clinical settings. This pedagogy assists the learner in understanding and transferring complex material from one setting to problem solving in another (Day, 2011).

Health Assessment

Health assessment in the laboratory offers another excellent forum to enhance learning with VC characters. Because most of the characters have a biographical profile and medical record, students can explore the risk factors for health-related conditions and recognize the impact of this information as it applies to history taking and examination skills.

Use of virtual characters can also enhance skills associated with health assessment. Generally, students learn how to assess the cardiac and respiratory systems by observing a live demonstration or by viewing videos. Practice of the skill follows as students perform assessments on each other or by using a task trainer or human patient simulator. At one particular college of nursing, students engage in two unique mid-fidelity simulated experiences. These simulators are programmed to represent two of the characters from *The Neighborhood* who have conditions impacting oxygenation: a Native American with chronic obstructive pulmonary disease; and a male, Philippine-trained pathologist with congestive heart failure. Because students have background information on these virtual patients, they can compare and contrast the differences heard on auscultation and discuss specific clinical implications for each. According to Giddens et al. (2010), learning is most effective when students are engaged and the activity is relevant. By adding this patient-centric element to the skills experience, students appear to be better able to remember and apply these findings to similar patients they encounter in the clinical setting, thereby closing the educational–clinical gap.

Classroom Lecture

According to Grossman, Krom, and O'Connor (2010), case studies optimize learning and improve students' grades and decision-making ability. The VC can be easily adapted to develop integrative learning activities for the classroom. Such approaches can be utilized in lieu of, or to enhance, traditional lecture and PowerPoint® presentation. These learning activities provide the opportunity to engage students in an innovative way, which has the instructor sidestepping the traditional PowerPoint presentation for one of active, integrative teaching. With the incorporation of a VC as the basis for this innovation, additional context is added to the material, which enhances students' understanding and ability to develop clinical judgment skills. Using the same VC characters the students practiced with in the skills laboratory can provide a sense of continuity and add even more context to the learning environment in the classroom, as they can now visualize the patient and his or her unique situation.

Unfolding Case Study

One of the characters in the VC (Dr. Ocampo) is a retired pathologist suffering from Class II heart failure. As the students read his story over time, they are able to see how he copes with his condition and how stressors in his life affect his health. His story provides context for the students to better understand the signs and symptoms of heart failure and gain an understanding of the trajectory and progression of the condition. In the classroom, students compare typical congestive heart failure findings, as presented in the textbook, with those seen in the virtual character. Students are enlightened as they discover the similarities and differences between the two. By using one of the embedded video clips during class, students can see Dr. Ocampo struggling to breathe and calling out for help during an exacerbation. It has been found that using case study pedagogy and other active student learning strategies not only improves the students' decision-making ability, it also expands their ability to independently provide care (Grossman et al., 2010).

Medical Record Analysis

With the advent of the electronic medical record, many students in clinical facilities may not have the opportunity to evaluate charts. Multiple barriers have been identified, with facilities citing concerns about security and privacy regulations as a rationale to deny access (Melo & Carlton, 2008; Vestal, Krautwurst, & Hack, 2008). By using the medical record embedded in the VC, students have the opportunity to examine the components of a medical record and interpret entries, which can be the basis for small group discussion.

One of the character situations mentioned previously, is of a woman with poorly controlled diabetes who experiences a stroke as the story unfolds. Student groups discuss her current medications and laboratory results and the relationship between both, as well as the appropriateness of the medications and intravenous fluids administered in her current situation. Working on these types of issues in small groups creates an environment that encourages discussion, dissension, critical thinking, and the development of clinical judgment. Lecturing on this same material does not produce the same results; rather, the discussion about a VC character provides a basis for knowledge acquisition and application.

Priority Setting

One area that undergraduate nursing students find challenging is that of priority setting. This skill is typically developed during clinical practice and has traditionally not been a part of most classroom instruction. As an integrative teaching strategy, students can practice or role-play clinical practice in the classroom. By using the VC's various characters and their stories and medical records, a patient's shift report can be created. Students work individually or in groups to determine care and assessment priorities, expected findings, and treatments. Using Mr. Bley, a character in *The Neighborhood* with chronic obstructive pulmonary disease, students can rehearse the steps necessary to develop the thought processes required to plan care for this patient. They can determine the most important aspects of his care for that day and note the parts of his history that need to be investigated and researched. Laboratory values, such as arterial blood gases, provide a basis for interpretation of results, typical values for this disease process, and appropriate oxygen delivery for this particular patient.

Another opportunity to enhance prioritization skills is to provide students with multiple shift reports for VC characters. These report sheets can be combined to create a virtual clinical patient assignment, with the number of patients per assignment varied, based on the level or skill of the student. The students can then determine which patient needs tending to first, second, and so on, providing rationale for their thinking. Debriefing this portion of the priority setting exercise is vital. Allowing students time to discuss their ideas, while guiding their critical thinking until they are able to correctly determine what their actions should be, is an exceptional learning experience. The students can continue this exercise by analyzing each patient situation to ascertain the care and assessment priorities for that shift. Continuing the exercise one step further, students can plan their care for each patient for the entire shift. Using the VC as the basis for these patient characters allows the instructor to tailor the details of the shift reports. Personality traits, family reactions, and patient responses to the illness situation are all elements that can add realism to the exercise.

Discussion

The use of a VC has allowed faculty to create multidimensional experiences that students can come to appreciate, beyond textbook materials. Continuously using the virtual characters over time is similar to having the opportunity to care for a patient for several days in a row, which allows for increased ease and comfort with the patient and his or her care. Anecdotally, students begin to see these characters as real patients; their life stories begin to influence how students respond to their needs. The students think before they act, as they try to determine how their actions will affect a particular patient.

The VC provides faculty with a tool that encourages the development of integrative teaching strategies. Early evidence has shown that VCs increase learner engagement and that student benefit is driven by faculty use (Giddens et al., 2010). These findings suggest that this type of integrative pedagogy is effective for teaching in a practice profession; however, it has been a challenge for many nursing faculty to adopt. Change is difficult and often met with resistance, but this type of tool seems to facilitate an integrative and contextual approach to teaching, without overly stressing the user. The many features within the VC provide data, context, and continuity for the faculty and can be used as a platform as we move toward teaching differently. Using a VC can potentially save faculty time, as relevant, comprehensive, multidimensional characters have been developed and are ready for use. Although the use of a VC is a new pedagogical approach, further research on outcomes is warranted. To date, some preliminary findings showed greater benefits among underrepresented minorities and students who expected less than an A in the course (Giddens, Shuster, & Roerig, 2010).

As faculty continue to embrace this new technology and find innovative ways to incorporate the VC in the classroom and laboratory, we can anticipate greater discussion related to student outcomes. Students and faculty alike are often reluctant to let go of traditional pedagogies. However, student engagement and ac-

ceptance of this new pedagogy is directly related to the faculty engagement. We believe that the more faculty are engaged in the VC, the more likely their students will be engaged in it as well.

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