

Using Wikis to Build Nursing Concept Maps

Promoting Group Interactive Learning

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WIKIS

A Wiki is an open-access Web site where collaboration occurs. Using Wikis, a group can share, collect, organize, edit, and revise both synchronously and asynchronously. Wikis are an excellent platform to build a knowledge base around a particular topic of interest,¹ suitable for use in traditional face-to-face classrooms and online learning environments. Wikis enable the faculty to observe group interactions as contents are developed collaboratively. This article will explain how Wikis can be used to develop collaborative nursing concept maps, which can be used both in the classroom and simulation laboratories and during or after clinical experience.

WIKI-BASED LEARNING

Wikis consist of Web 2.0 components and can be used to enhance learning because it actively engages learners.² The use of Wikis fits well in the constructive paradigm as meanings are constructed. Wikis create an active learning environment engaging students in interactions, which require exploration of learning materials, at the same time enabling them to gauge the results of their contributions. Students can display their creativity and integrate new ideas with previous knowledge.² Literature related to the use of Wikis in nursing education suggests the need to further develop the pedagogical use of Wiki environments and match these uses with suitable courses in nursing curricula.³ Nursing students may find the use of Wikis as enjoyable and flexible learning experiences.⁴ Wikis can structure academic learning and promote social networking for students.⁵ This article focuses on using Wiki-based learning to develop collaborative concept maps, enabling learners to analyze the contributions of others and synthesize inputs into a final concept map. Faculty can provide an opportunity for students to collaborate, analyze, and synthesize information by creating exercises to develop group concept maps using Wikis in classroom, online, clinical, and simulation laboratory settings.

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KEY POINTS:

- Understanding Wiki-based learning
- Accessing and using Wikis in contemporary classroom
- Using Wikis to develop nursing concept maps

ACCESSING AND USING EDUCATIONAL WIKIS

Two sites offering educational Wikis are available, on which educators can create classrooms and teach multiple learners. The first is Wikispaces Classroom (Tangient LLC, San Francisco, CA), and the second is PB Wiki (PBworks, San Mateo, CA).

Wikispaces Classroom

Wikispaces Classroom (<https://www.wikispaces.com/content/classroom>) provides a free platform where faculty can register and log in to create a classroom with an access code that can be shared with learners. In the Wiki classroom, learners work on projects and assignments created by the faculty. Faculty can monitor the progress of the project and assess learner participation. The key features of Wikispaces include faculty announcements, project schedule, discussions such as the newsfeed, creating projects and assignments, uploading files, and assessing student engagement in real time.⁶ It has a simple design, and its interface is similar to using Microsoft Word. Wikispaces is accessible on any mobile device.

PB Wiki

PBworks, maker of PB Wiki (<http://www.pbworks.com/wikis.html>) offers another platform called WikiHub that can be used for educational Wikis but is not free.⁷ Faculty can create classrooms, and students can access classroom content without email addresses. Students can create pages in collaboration and edit their work as well. Similar to Wikispaces, PB Wiki has a simple design, has an interface that is similar to MS Word, and is accessible on any mobile device.

EDUCATIONAL PLATFORM WIKIS

With the growing use of teaching-learning platforms and learning management systems such as Blackboard and others, Wikis can now be integrated with multiple platforms. The use of online learning environments may be simple

because students already have access to a classroom on these platforms, and the faculty can create Wikis within these programs and assign them to the students. The faculty can monitor the development of Wikis, assessing contributions of each student within the group.

Developing Nursing Concept Maps Using Wikis

In nursing, concept maps are considered as a diagram or representation of content that displays patient problems and interventions.⁸ A concept map may be an effective learning strategy and has been successfully used in many disciplines, with roots in education and psychology.⁹ Concept maps can be used to creatively organize information and demonstrate relationships between them. In nursing education, concept maps are heavily used in clinical settings. However, it is important to know that concept maps can be equally and effectively used in other settings such as traditional face-to-face classrooms, online classrooms, and simulation laboratories. Developing a concept map requires a higher order of thinking, integrating previous knowledge and comprehension to conduct analysis and synthesize content. It is important for faculty to use critical steps as they facilitate students to critically think as they engage in developing concept maps using Wikis. Selected strategies may serve as a guide for nursing faculty who want to use Wikis to promote deeper learning using an active and collaborative learning environment.

Step 1: Setting Learning Objectives

The first step is to formulate learning objectives that the educator desires for students to meet at the conclusion of the Wiki project. Without an establishment of clear learning objectives, students may be confused. If the faculty wants to evaluate and grade the project, then it is important to develop clear guidelines for the project and to include a grading rubric. Such faculty practices enable the students to stay on track as they collaborate and develop Wiki concept maps.

Step 2: Develop Clinical Cases

The next step for educators is to develop clinical case topics related to the learning objectives. Students are expected to build concept maps based on these clinical cases and need to first develop knowledge about related disease condition followed by analyzing and synthesizing content to be included in the concept map while collaborating with other team members.

Step 3: Create a Wiki Class and Project

Faculty should first create a Wiki Class for the course that they are interested in teaching. Once a course is created, then multiple projects can be built in the courses. To create a class, faculty needs to sign up and have a log-in and password.

Step 4: Develop Instructions and Guidelines

Faculty should develop Wiki concept map guidelines, describing the need to develop knowledge on the medical conditions mentioned in those clinical cases. A student can develop knowledge using learning resources such as the textbook, notes, or learning videos. Faculty can upload electronic teaching materials into Wiki class ranging from video, audio, text documents (including Word and PDF files), slide presentations, and other formats. Instructions can be emailed to the students or can be posted on the Wiki project page itself.

Step 5: Allocate Groups and Cases

Each clinical case can be assigned to a small group. A group size of three to five students is suggested to decrease complexity. Faculty needs to design groups and pair them with clinical cases. Each clinical case is assigned to a particular team. Each team member is given access to the team Wiki page with discussion option that can be used for the members to collaborate and develop the concept map. Faculty can create a code, and a short URL can be shared with the students via email to access the page. Students also need to have an account to join the Wiki class. The account creation is an easy process requiring basic information, which includes an email account and a password.

Step 6: Release Wiki Page for Group Access

Once the faculty has determined the group and their respective projects, the faculty can give the student access to class and their respective Wiki concept map projects. It is important to include a timeline to work on the project. Each group member is given access to a specific clinical case project. In other words, each member of the group has access to the same Wiki page. Having a list of Wiki usernames of students will make it easier to assign because Wiki usernames can be added to the respective pages. One excellent feature of a Wiki page is widgets, which allow uploading educational content and access to other open learning sources and social media sites. One important condition for success in creating a group Wiki concept map is that students should familiarize themselves with navigating the Wiki class and using it to work on their projects. The faculty can do this by setting up a demo class at the beginning of the course where they can try and learn using Wikis for developing concept maps.

Step 7: Evaluate Wiki Concept Maps

Ideally, a clear rubric should be offered to students if the projects are intended to be graded. Ungraded projects should be monitored by faculty for student engagement and participation, requirements that may be tracked by the Wiki application. Another option is to engage students in doing peer evaluations where they can give each other feedback.

Step 8: Faculty Feedback

Feedback can be provided to the group or individuals in a written manner or via discussion. Feedback can be provided as the students are working on a concept map using the discussion feature on the Wiki page.

Application Example

Step 1: Learning Objective

Students will learn key elements involved in managing care for a patient with hyperglycemia through creating a Wiki concept map collaboratively.

Step 2: Develop Clinical Cases

The case was a 56-year-old Hispanic man with type II diabetes with symptomatic hyperglycemia. The group was asked to create a collaborative Wiki concept map on the care of a patient with hyperglycemia.

Step 3: Create a Wiki Class and Project

A Wiki class was created within which a Wiki page project titled “Hyperglycemia” was created for the group. The group had five students.

Step 4: Develop Instructions and Guidelines

The following instructions and guidelines were developed and posted to the group.

- The discussion area in the Wiki class can be used to express your ideas of content that you will include in a single-page concept map. If the team agrees, the Wiki page can be edited directly by the group members, or one person can be assigned to edit the main page.
- It is suggested that the team agree on a final list of content to be included on the Wiki page.
- The group can choose a team leader or discuss and distribute sections of the concept map to each member.
- If a team leader is chosen, then the team leader will assign topics to each team member.
- Each team member will access the Wiki page and will start adding and editing content to the concept map as assigned.
- The group members are responsible for reading content contributed by each team member and comment in the discussion session.

- The educator will join the discussion group and offer comments as needed.
- Upon all group member agreement, the concept map can be saved as final and is indicated to the instructor. However, once the time allotted for the project is over, the faculty will consider the Wiki page as final for grading.
- Review the grading rubric and use it when developing a Wiki concept map.

Step 5: Allocate Groups and Cases

A group of five students was assigned to the hyperglycemia case. A list was generated containing names and e-mail addresses of the students. A class code with short class URL was generated and was sent to the students inviting them to join the Wiki page.

Step 6: Release Wiki Page for Group Access

The invitation for students to join the Wiki class was sent via e-mail including specific instructions. The instruction included the timeline from joining the class to completing the concept map project. In this case, a week time was given to complete the project. In addition, the instructions on developing Wiki concept maps and guidelines were posted on the Wiki discussion section by the educator. Furthermore, pages of concept map examples were uploaded by the instructor.

Step 7: Evaluate Wiki Concept Maps

A grading rubric was developed to evaluate a Wiki concept map. The five major components included in the rubric for evaluation were team organization, content contribution, logical presentation, team interaction, and creativity. Each component was rated from 1 to 5, with a maximum of 25 points (see Table 1 for the Wiki concept map grading rubric).

Step 8: Faculty Feedback

Faculty provided feedback on a daily basis in the discussion section of the Wiki class. At the end of the project, the team grade was released to the team using their email address.

An example of the Wiki concept map developed on hyperglycemia is included in Figure 1.

Table 1. Wiki Concept Map Grading Rubric

	5, Exceptional	4, Excellent	3, Average	2, Need Significant Improvement	0, Unacceptable
Team organization					
Content contribution					
Logical presentation					
Team interaction					
Creativity					
Total					

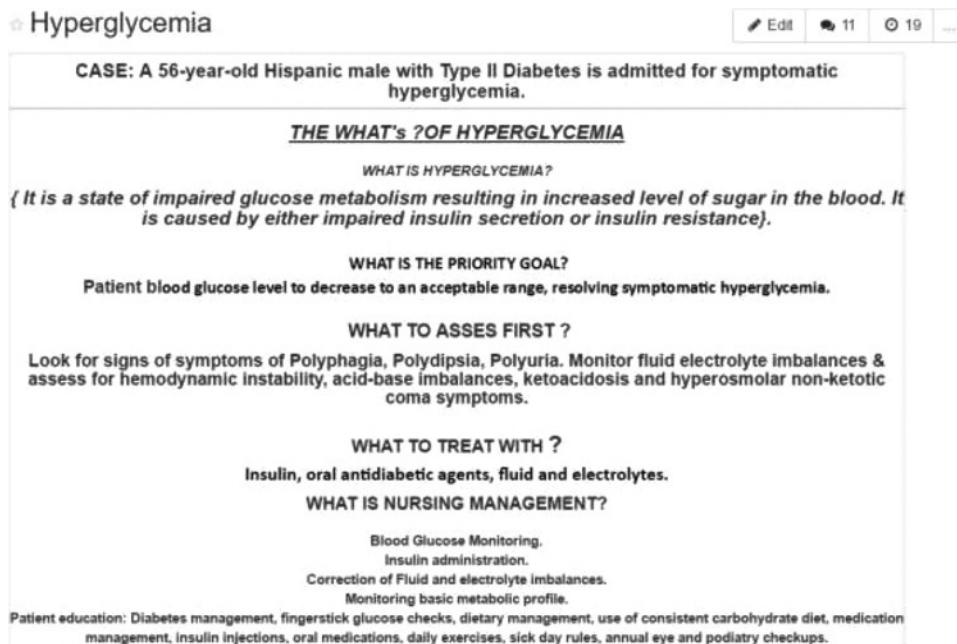


FIGURE 1. A Wiki concept map on a hyperglycemia case.

CONCLUSIONS

Wiki-based learning can enhance nursing education both in the traditional face-to-face and online classroom settings. Wikis are one among many open-access learning resources. Therefore, it can be of great value to those institutions that may not have access to costly digital learning platforms. If the institution already has online learning platforms, Wikis may be an added feature in the learning management system. Building nursing concept maps as a group activity is only one example of the use of Wikis. Faculty can be creative in using Wikis for many other collaborative nursing education activities that promote group interactive learning.

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