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Redesigning an Undergraduate Nursing Research Course Using Innovative Teaching Strategies

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Abstract

Background: There is little doubt about the challenge of teaching nursing research in today's complex world of nursing education. Traditionally, nursing students have questioned the validity and necessity of nursing research during their academic careers.

Method: The redesign of this undergraduate nursing research course utilized a mastery learning model. Included in this re-design was innovative teaching and learning strategies. The expectation was that a redesign of the course would instill a new passion and appreciation for the research process.

Results: The results from class evaluations and the Likert scale utilized during the course were positive overall and supported this re-design.

Conclusion: Given the importance of the use of current evidenced- based practice within the profession of nursing, it becomes imperative to instill a sense of passion and excitement among students regarding research and its everyday relevance to insure quality healthcare outcomes.

Introduction

The purpose of this article will be to describe the redesign of an undergraduate nursing research course utilizing innovative teaching techniques in order to create a positive impression regarding the research process for students. There is little doubt about the challenge of teaching nursing research in today's complex world of nursing education. Traditionally, nursing students have questioned the validity of nursing research and the students' place in the research community [1]. Those who teach nursing research have struggled in their efforts to bring the course to life. This includes engaging students to encourage them to become lifetime researchers with a passion for using evidence-based information in their day-to-day care of their patients. The Bachelor of Science in Nursing Essentials (ACEN n.d.) states, "Professional nursing practice is grounded in the translation of current evidence into practice" (p.15). This essential became the focus for the revision of the nursing research class and to reinforce the importance of providing safe and effective patient care that is driven by current research findings.

Purpose

Guiding the redesign of the research course was the practical application of research methods concerning areas of interests as they relate to clinical issues and concerns encountered. The hope was that a redesign of this course would achieve a new passion and appreciation for the research process could be achieved. In addition, the development of critical thinking and problem-solving skills would be promoted. According to [2] it is important that undergraduate students are provided with a strong foundation that instills excitement for research and the skills needed to analyze research findings. In order to transition into the role of a professional nurse, students must be able to critique and understand the research process in order to provide current evidenced-based care. This includes evaluating the credibility of research results, study designs, sample selection, and overall rigor of studies [3].

Model for the Redesign and the Block Curriculum

The model that guided the redesign of the research course was based on the Roseman University of Health Sciences (RUHS) six-point mastery learning model [4]. At RUHS, students have the opportunity to "master" each course through the use of this six-point mastery learning model. The mastery learning model employs a "block" system of curriculum delivery. In the block system, students take one class (block) at a time, focus intently on that content area, and master the content before proceeding to the next block. This educational model requires that students meet the mastery level of 90% or higher for all assessments and graded learning activities. There are set remediation periods built into the curriculum in order to facilitate the achievement of the 90% level. The block

system allows for the development of a collaborative and cooperative learning environment through the use of group projects and learning activities.

The type of students that enroll into a block curriculum had to be taken into consideration before the redesign of nursing research could take place. Historically students who attend RUHS are a mixture of generations with a larger number representing millennials and Gen X'rs. Millennials and GenX'rs tend to be multitaskers with a technology savvy that other generation do not have [3]. Therefore, it became important to construct a redesign for the nursing research class that would engage and address the learning needs of students from the various generational categories.

Redesign

The incorporation of innovative learning activities was pivotal in the redesign of this course and is supported by the six-point mastery learning model. Examples of these interactive and innovative activities that will be discussed in this paper included:

- The use of a Likert scale to measure interest in research at the beginning and end of the block
- "What is in the box?"
- An in-service presentation by an expert Librarian on performing searches utilizing data bases
- A field trip to a research facility
- "The Great Cookie Experiment"
- Review of videos addressing violations of ethics regarding research procedures
- Utilization of standardized forms to facilitate and support the critique of articles and the organization of the review process
- Group work and group presentations of research findings
- Presentations by groups including posters and the creation of videos.

As the course began, the question to the students was "What do you think about research?" A Likert scale was placed on a wall and the students were given "sticky" notes to place their feelings about research along this scale. The scale was from "1", being the worst class ever in the curriculum, to "10" representing the class they were looking forward to the most. The number "5" represented neutrality about research. The majority of the students placed their "sticky" notes from the middle of the Likert scale to the lowest end. The comments were as follows:

- "Nursing research is extremely boring"
- "This is just busy work with no meaning"
- "No nurses I have met ever do research because they have no time"
- "Nursing research means nothing to the nursing community".

This was not a surprise. The challenge which was presented to the faculty was, "How can the faculty accomplish a two-fold goal: make research a topic the students would begin to feel passionate about, and encourage them to continue nursing research in the future"?

Activities Early in the Course

On a typical day, the block would start with a review of the concepts for approximately one hour followed by the application of the concepts utilizing the innovative learning activities. On the first day of the course the students participated in an activity referred to as "What is in the box?" This activity consisted of placing an item/object into a closed box and then each student group had one collective question they could ask to determine what was in the box before moving to the next group of students. The questioning continued to move from group to group until the item was discovered. Students were awarded with prizes for participation and for determining the identity of the object. This activity promoted group cohesiveness and teamwork and introduced the use of deductive reasoning to solve a question and arrive at an answer. Additionally, at the beginning of the research block, a Librarian who is an expert in searching data bases presented search strategies for research topics. This presentation included hands-on learning activities related to the concepts being presented. This allowed the students to access the needed information to conduct searches on topics of interests efficiently early within the block.

Field Trips

Field trips were arranged for the students to visit and learn of research endeavors being conducted at local research facilities that included a nationally recognized healthcare organization. This provided the students an opportunity to see "research in action" and appreciate the state of the science regarding areas of current research initiatives. These facilities provided a tour of their research labs and shared healthcare-related topics that were being explored and studied. Students were encouraged by the experts at these facilities to ask questions related to the ongoing research trials.

The Great Cookie Experiment

This activity was first introduced by [5]. The experiment has been updated numerous times but in essence it was the same. In the experiment, the students tasted a manufactured "homemade" cookie and a cookie which was gluten-free. The students received a ballot and were given one cookie each. The students were to analyze the first cookie by looking at the cookie's texture, taste, smell, etc. and give it a score. The students then were to clean their palate to prepare for the comparison cookie. The students also analyzed the same characteristics of the cookie giving the second cookie a score. They then were to compare their results with the class. The class unanimously chose the manufactured, "homemade" cookie. Some of the students noted the texture was softer, with creamier chocolate chips, giving a more satisfying tasting experience. Not chosen was the gluten- free cookie eliciting students comments such as, "boring", "tasted stale", "too crumbly", and "the chocolate chips were not as fresh". The students enjoyed this experiment as evidenced by asking for seconds of the preferred cookie, laughter when comparing the two types of cookies, and discussing in-depth with each other how to describe the difference between the cookies. Therefore facilitating the connection between this experiment and the essence of qualitative research. This class session made for a very interactive and enjoyable learning activity.

Ethical Principles Videos

The students collectively reviewed videos, which expressed ethical principles surrounding research. Reactions in these discussions brought up the importance of ethical principles into a worldview that could be understood by all those who viewed them. The discussions were quite impactful as the students shared their anger, their disgust, and how appalled they were that these types of violations could occur in the 20th century.

One discussion surrounded the story of Henrietta Lacks. The students posed interesting questions related to this case such as; "How could this happen?" "Could this happen today?" The story of Henrietta Lacks greatly disturbed the students regarding the violation of research ethics and the desecration of individual rights. The students approached this discussion with vibrancy and inquisitiveness, which lead to a deeper understanding of ethical principles and the importance of protecting vulnerable subjects.

Research Findings Presented

The end of the block culminated in students presenting their research findings and recommendations for evidenced-based practice based on their PICO questions. The student groups were given the option of presenting their findings, either using a poster presentation format, a video, a skit, or a combination of any of these modalities. It was emphasized that whatever method was used, the information presented had to address the areas delineated on the grading rubric for the project. Required areas of the rubric included the presentation of the: PICO question; review and critique of the relevant evidence; articulation and understanding of the conclusions from the research cited; and research implications for nursing practice. Feedback and clarification from the faculty was provided throughout the course leading up to the group presentations.

Likert Survey Revisited

At the end of the class, the same Likert Scale was placed on the wall and the students were given a different colored "sticky" note and asked to place it on the Likert scale, displaying how they now felt about nursing research, providing adjectives or sentences to describe their feelings. The results on the last day of class were as follows: from the 48 baccalaureate students that were surveyed, the majority of the scores ranged from "5"-having no particular feeling about nursing research to "10"- being the class they had been looking forward to. The scores primarily were in the "7-8" range. The comments at the end of the class were:

- "This was more interesting than I thought"
- "I loved the Great Cookie Experiment. I didn't realize research could be such fun"
- "I now understand the importance of abiding by the ethical principles stated in the Belmont Report"
- "This was a pretty good class and I can see where research makes a difference"

Discussion

Being able to structure the introductory nursing research class with a goal of having the students enjoy research and not to think of research as drudgery, has long been a challenge for every instructor teaching nursing research. Through the incorporation of activities, that were described as "fun" and that also addressed the required points within the curriculum, it became clear that students could enjoy research. For the students of this particular nursing research class, the redesign brought about a sense of enjoyment and an appreciation for the importance of research.

Conclusion

Given the importance of the use of current evidence-based practice within the profession of nursing, it becomes imperative to instill a sense of passion and excitement among students regarding research and its everyday relevance to insure safe and quality healthcare outcomes. According to [6] "It is frustrating to know how important and integral research is to professional nursing practice, and yet struggle to engage or communicate this to students" (p.2). By redesigning the nursing research course, and incorporating the teaching strategies discussed in this article, students were engaged, stimulated, and stated they had fun working together on their research projects. Furthermore, the role of a baccalaureate nurse has evolved over the last several years, and part of this evolution encompasses advocacy for change and autonomy [7]. By having an understanding of research principles and the application to practice, nursing students will impact the future development and growth of the profession. In conclusion, it is hoped that the students will continue to develop their passion for research throughout their professional careers.

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