This document is a best practices essay from the international, multidisciplinary collection of teaching and training techniques, “Critical thinking and Clinical Reasoning in the Health Sciences.” Each essay in this set provides an example of training reasoning skills and thinking mindset described by international experts in training clinical reasoning.

The Poster: A Critical Thinking and Creative Strategy in a Research Course

Joanne Profetto-McGrath & Karen Bulmer Smith

Dr. Joanne Profetto-McGrath is Interim Dean at the Faculty of Nursing, at Canada’s prestigious University of Alberta. She has been a scholar in the area of critical thinking throughout her career and we recommend her published data based discussions of strengthening the critical thinking skills of explanation and evaluation achieved by linking an evidence base with practice behavior. Dr. Profetto-McGrath’s research program is well linked to her classroom and clinical teaching, for which she has been recognized for excellence on numerous occasions.

We had the pleasure of a personal meeting Dr. Profetto-McGrath on a visit to the University of Alberta’s Evidence Based Practice Conference some years back. I am sure all those who attended recall the energy of that critical thinking community in contrast with the icy hush of those January snow-covered Edmonton nights.

Karen Blumer Smith is a research assistant on several of Profetto-McGrath’s projects and a doctoral student mentee. Dr. Profetto-McGrath and Karen bring us this discussion of the use of a research poster to practice critical thinking skills and dispositions. The exercise offers a fine example of a teaching strategy that combines collaboration and competition in a context that emphasizes the practice of critical thinking skills.

The class session and the students

This group assignment was originally developed by Professor Profetto-McGrath for a required course in research methods as a way to enhance critical thinking skills while making research interesting, interactive, useful and fun. The course enrolled third year nursing students in a baccalaureate program and registered nurses in a two year baccalaureate completion program. The session would generalize to any health science course addressing the use of published research.
The goal of the class session

The purpose of the lesson is to guide students (working in groups of 3 or 4) to retrieve, critique, and synthesize current research; to determine whether nursing practice at local agencies is congruent with the research findings; and to present their work in a clear manner using a poster format. The student groups communicate (translate/transfer) their work during in-class poster sessions.

There were number of purposes in mind in the creation of this assignment and all seemed attainable by coaching the students in the construction of a research poster. The course was intended to prepare students to retrieve published research studies that related to a specific and important health topic, phenomena or problem that has changed nursing practice.

Learning Outcomes:

Students will demonstrate the ability to:

1) Interpret and analyze how research has changed practice in relationship to a specific health topic/phenomena/problem of interest.

2) Demonstrate critical thinking and creative skills using a poster medium.

3) Translate/transfer synthesized research knowledge from published studies to clinical practice.

The skills required for this assignment include prior exposure to reading research, some nursing knowledge, computer skills, library searching skills, group presentations skills and group process skills. The ability to use power-point or other presentation software is very helpful for this assignment. The completion of the assignment provides an additional opportunity to develop the above skills. The project also has the added potential to enhance collaboration and networking among nursing students and nurses in clinical practice settings.

Focus for the course:

Research indicates that understanding, interpreting and incorporating research findings into practice is challenging for health care professionals. Some of these challenges include understanding and interpreting research, finding time to read the latest research findings, and indications that a preferred source of knowledge for nurses is social interaction. Posters are a quick way to present, analyze and understand current research findings. We recommend as good references on this topic the papers by Heye and Crowe (1996), Godkin (1999), and the two by Estabrooks and colleagues (2005a and 2005b) in the reference list below.

We assign this project to promote students’ critical thinking skills through the use of appraisal skills relevant to the literature (interpretation, analysis, and evaluation), working collaboratively as a group to process the material and developing communication proficiency. The learning objectives are measured through our appraisal of the research posters and our assessment of the students’ knowledge about the chosen research articles.

This assignment asks students to analyze nursing practice at local agencies, comparing what they observe at these agencies to the researched practices that they have located in the literature, and evaluating whether nursing practice at local agencies is congruent with the research findings. Part of this evaluation is the identification of examples of why the practice is supported by nursing research (or why not).

Our work before the class for this assignment

Before the class begins, we prepare the following:
• List of practice topics related to their current clinical assignments that would be worthy of a research poster presentation.
• List of recently published research articles describing the preparation of a poster presentation (circulated in class or posted on the course Website).
• Handout outlining the guidelines for making and evaluating the poster.
• Group sign-up sheets for students to record their group name as well as each group member’s name and contact information.
• Note-taking guide handout for students to use during class presentations related to the poster assignment.

How this assignment is presented to students:
• During the course orientation, students learn that they will prepare posters working in small groups, and that the groups will be formed in Week 2 of the course. The assignment is then discussed during class time in Week 2 as part of a lecture about poster presentations as a way to transfer/translate research findings into practice. We describe the components of a well done poster presentation, encourage them to use the note-taking guide to record information about the following questions raised in class drawn from the published articles included in the reference list:
  - What is the purpose of the poster presentation assignment?
  - What are the communication advantages of using a poster presentation?
  - Why use a poster as opposed to another strategy/medium?
  - What are the design elements for an effective poster presentation?
  - How does a group effectively plan, develop and present the poster?

After the discussion of the poster presentation methodology, Dr. Profetto-McGrath explains the assignment using the guide prepared specifically for this purpose (Figure 1). Class time is used to acquaint the students with this assignment and encourage them to ask questions before they break into groups. We make it clear that they should contact us if they need more information or clarification.

To be sure that the students understand our expectations for the completed poster, we make available for students’ viewing samples of posters completed by students in previous courses. To help them to get off on a good start with their group process we also share with students our expectations regarding group work and provide them with a brief overview of successful group process, including information about professionalism, group dynamics and respectful face-to-face and email communication.

Finally, we encourage the students to meet with us to review the research articles they have located before proceeding with the poster development. This part of the process is very helpful to students and necessary for the quality of the learning experience.

After a short question period, we explain the group tasks expected and ask each group to determine a group name that communicates something about their group. Having a group name promotes group identity and cohesion and seems to assist with the group process. We stress that group name should be professional and tasteful. For the remainder of the class session (15 to 20 minutes), students make plans to complete their group tasks. They assign a group liaison to facilitate their communication about the project. This person is responsible for communicating with the course instructor(s) when we ask for updates on the group’s progress. Most of the work for this project occurs outside regular class time. The students have approximately 8 weeks to complete the assignment.
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Group Assignment: Poster Presentation and Display

Purpose of this assignment:
- To identify how research related to a specific health topic/phenomenon/clinical problem has changed nursing practice
- To demonstrate critical thinking and creative skills using a poster medium
- To communicate synthesis of nursing research in writing
- To enhance collaboration and networking among nursing students and nurses in clinical practice

These are your learning objectives for this assignment.

Format:
- Approximately 4 feet by 6 feet poster when assembled (poster should be portable, easy to assemble). The poster should be the students’ own work, not that of a professional.
- A separate handout continuing a cover page, abstract and reference list must accompany the poster (APA Format)

Poster components and content (Evaluation criteria):
- Provide a purpose of the poster
- Provide a brief history of the health topic/phenomenon/problem
- Define (describe and explain) the topic/phenomenon/problem briefly
- Synthesize (analyze and evaluate) appropriate nursing research about the topic/phenomenon/problem and identify how this research has evolved (approximately 10-15 nursing research studies within last 10 years if applicable). This is a major focus of poster.
- Briefly describe how these findings are currently being used in nursing practice. Give concrete examples. You may wish to compare what is current practice at the institution where you are currently practicing or have practiced as compared to what is being written about in the literature
- Identify (analyze and explain) what further research needs to be conducted in order to fill existing gaps or to further extend the knowledge base related to the research topic/phenomenon/problem chosen. These may be worded in the form of questions or statements. Remember: Be specific.

NOTE:
😊 Poster guidelines and other important information will be provided in class
❖ Sample posters & pictures from previous groups’ presentations will be available for viewing
➢ Time will be available in class for establishing groups & having a short initial meeting. Therefore it is VERY IMPORTANT that all students attend class
*Reference list containing current information about developing and making posters and key research papers related to your health topic/practice problem.

What we expect from class participants
- We expect that this assignment might raise group process issues because the work necessitates consensus building and collaboration. We provide group members with an understanding of the dynamics of conflict resolution that might help groups deal with process issues. We model respect toward the students and expect the same behavior from student groups, reinforcing that this is a group assignment that they will receive a group mark.
- We expect quality presentations from the participants. We make this expectation apparent during the lecture.
- This assignment is designed to challenge and develop critical thinking skills. We have found that students often choose very difficult articles that prove to be challenging given their knowledge base and interpretive skills. Synthesizing them can be challenging. I encourage the groups to bring the articles to me with questions.

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The students’ final work product - Poster Day

One option for poster presentation, useful if this work is part of an on-line lesson, is to have the student groups post their posters to a class website. However, having the student groups present their posters to their faculty and peers provides a stronger opportunity for improving students’ critical thinking skills. The groups set up their posters along the perimeters of the classroom and present them to others in the class. The need to prepare for an effective presentation of the poster further assists them with synthesizing their learning and practices the critical thinking skills of analysis and explanation. During the in-class presentation, we move from group to group and discuss the posters with the students. Each group presents the poster for approximately 3-5 minutes. In presenting the poster session, we expect the students to articulate the research problem, purpose, and findings and how the particular research influences nursing practice. We pose two to three questions to the presenting group after the students have presented key aspects of their poster. The purpose of the questions is to stimulate a deeper interpretation of the material in the poster and to facilitate our evaluation of the student’s critical appraisal skills, so the questions must be designed to stimulate higher level cognitive skills. This questioning process also serves as way to teach students how to ask higher level questions that reflect as well as stimulate others’ critical thinking skills.

During the presentation week, we try to create an atmosphere of celebration, and as the instructors, we strive to make this session as informal and fun as possible so that our presence does not make the students too nervous. We also take pictures of the students and their posters for an album we keep to share during future course offerings. Evaluations scores for the students’ work are assigned later based on the criteria described in Figure 2, which is shared with the students when we introduced the assignment.

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<th>Posters and content are evaluated based on the following components:</th>
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<td>- The overall visual presentation of the poster</td>
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<td>- The presence of an identifiable purpose statement</td>
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<td>- A brief history of the health topic/phenomena/problem</td>
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<td>- A definition of the topic/phenomena/problem</td>
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<td>- A reference list with approximately 10-15 recent research articles submitted together with the poster that indicates how the research relevant to the topic/phenomena/problem has evolved over time</td>
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<td>- An explanation of how these findings are currently being used in practice. (For example, students might compare current practice at the institution where they are currently practicing or have practiced to what is reported as recommended practice in the literature)</td>
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<td>- A list of additional nursing research that needs to be conducted in order to fill existing gaps or to further extend the knowledge base related to the nursing research topic/phenomena/problem chosen. These can be written in the form of questions or statements.</td>
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<th>Presentation skills are evaluated based on:</th>
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<td>- The group’s understanding of the research</td>
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<td>- The group’s ability to communicate findings clearly and concisely;</td>
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<td>- Demonstrated professionalism: as indicated by speech, movement and body language during the presentation;</td>
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<td>- Evidence of critical thinking skills: as demonstrated by their ability to answer questions posed by peers and instructor.</td>
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We have used this assignment several times over the past ten years and we have received very positive feedback from students. Students have reported that while this assignment is labour intensive, they found it to be creative, fun, challenging, a great learning experience, and most of all an excellent way to enhance their critical thinking skills.

The value of the assignment extends outside the classroom to our academic and practice community. Each year several of the best posters are exhibited throughout the Faculty of Nursing building so that other students, educators, and members of the public can learn from the work done by students. One year, the posters from the course were part of a Faculty of Nursing’s internal competition. The top three posters chosen by an independent committee received book and cash prizes.
Staff at local agencies who were visited by students during the preparation of their posters asked students to bring the posters to the agency for viewing after they presented them in class. The staff requested these posters as a means to inform staff about nursing research relevant to their practice area. As a result these posters have served as a method to educate nurses in practice about the latest research.

References

Although this series focuses on health science content, the techniques are transferrable to all types of training programs and educational projects.

Download other essays in this series for valuable training techniques that focus student learning of reasoning skills and thinking mindset. See Resources on our website.