Rotating Stations: Problem and Purpose and Question, Oh My!

| Prerequisite Knowledge | ● The purpose of research and evidence-based practice in nursing  
|                        | ● The types of research that generate evidence for nursing practice  
|                        | ● The steps of research in nonexperimental and experimental designs |
| Learner Setting        | Classroom |
| Strategy Type          | Small group |
| Time                   | Faculty prep: <5 minutes  
|                        | Delivery with students: 45 minutes  
|                        | Evaluation: 15 minutes |
| Learning Objectives    | ● To critically appraise the problems, objectives, hypotheses, and variables in studies. |
| Materials/Resources    | Markers and whiteboard (or large sheets of paper attached to walls or easels)  
|                        | Instructor-generated example (see below)  
|                        | Sample classroom diagram (see below)  
|                        | Critique questions (see below)  
|                        | Photos of student examples (see below) |
| Strategy Overview      | The purpose of this strategy is to provide students with an opportunity to practice their understanding of the connections between various elements found in a research report (research problem, study purpose, objectives/aims, research question, and hypothesis). Through a collaborative small group activity, students rotate through various “stations” in the classroom and create their own research problems, |
purposes, etc. and then critique the student-generated examples. The instructor circulates among the groups during the course of this activity, providing clarification and feedback but not always correction, leaving the groups something to critique and discuss. Groups then answer a set of critique questions using the example at their final station. Groups share their critiques and impressions of the learning experience with the whole class.

<table>
<thead>
<tr>
<th>Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrate an example that begins with a broad topic and</td>
</tr>
<tr>
<td>progresses through research problem, purpose, objectives/aims,</td>
</tr>
<tr>
<td>question, and hypothesis</td>
</tr>
<tr>
<td>2. Take class suggestions or simply provide students with a broad</td>
</tr>
<tr>
<td>research topic (i.e. nursing education)</td>
</tr>
<tr>
<td>3. Divide students into small groups and assign each group a</td>
</tr>
<tr>
<td>beginning station at the whiteboard.</td>
</tr>
<tr>
<td>4. Each group generates a research problem based on the overall</td>
</tr>
<tr>
<td>topic.</td>
</tr>
<tr>
<td>5. The instructor circulates to provide clarification and feedback</td>
</tr>
<tr>
<td>and then directs each group to move to the next whiteboard station.</td>
</tr>
<tr>
<td>6. Each group generates a study purpose based on the research</td>
</tr>
<tr>
<td>problem that is already written at this station.</td>
</tr>
<tr>
<td>7. The instructor circulates to provide clarification and feedback</td>
</tr>
<tr>
<td>and then directs each group to move to the next whiteboard station.</td>
</tr>
<tr>
<td>8. Each group generates a study objective or aim based on the</td>
</tr>
<tr>
<td>problem and purpose that are already written at this station.</td>
</tr>
<tr>
<td>9. The instructor circulates to provide clarification and feedback</td>
</tr>
<tr>
<td>and then directs each group to move to the next whiteboard station.</td>
</tr>
</tbody>
</table>
10. Each group generates a research question based on all the information already written at this station.

11. The instructor circulates to provide clarification and feedback and then directs each group to move to the next whiteboard station.

12. Each group generates a hypothesis based on all the information already written at this station.

13. The instructor circulates to provide clarification and feedback and then directs each group to move to the next whiteboard station.

14. Now, at the final station, groups complete the critique questions in their small groups.

15. The instructor facilitates a class discussion of the critique questions and lessons learned from this assignment that can be applied to critiquing research articles.

| Evaluation | Low stakes - Instructor feedback during class activity and/or credit for active participation |
Rotating Stations: Instructor-generated Example

**Topic:** A broad area that includes many potential research problems

*Example:* Side effects of chemotherapy

**Problem:** An area of concern within the broad topic of interest

*Example:* Nausea and vomiting are common side effects among patients on chemotherapy, and interventions to date have been only moderately successful in reducing these effects. New interventions that can reduce or prevent these side effects need to be identified.

**Purpose:** A summary of the overall goal of the study

*Example:* The purpose of this study is to test an intervention to reduce chemotherapy-induced side effects

**Objectives/aims:** The specific accomplishments the researchers hope to achieve through this study

*Example:* The objective of this study is to develop and implement two alternative procedures for administering antiemetic therapy for patients receiving moderately emetogenic chemotherapy (patient-controlled versus nurse-controlled).

**Question:** The specific question the researchers hope to answer in addressing the research problem

*Example:* What is the relative effectiveness of patient-controlled antiemetic therapy versus nurse-controlled antiemetic therapy with regard to (a) medication consumption and (b) control of nausea/vomiting in patients on chemotherapy?

**Hypothesis:** A statement of predicted relationships between variables

*Example:* Subjects receiving antiemetic therapy by a patient-controlled pump will (1) be less nauseated, (2) vomit less, and (3) consume less overall medication than subjects receiving the therapy by nurse administration.
Rotating Stations: Sample classroom diagram

Station 4: Group 4 begins here, then progresses clockwise
Station 5: Group 5 begins here, then progresses clockwise
Station 6: Group 6 begins here, then progresses clockwise

Station 3: Group 3 begins here, then progresses clockwise

Station 2: Group 2 begins here, then progresses clockwise

Station 1: Group 1 begins here, then progresses clockwise

Example of progression at Station 1:
- Problem – completed by Group 1
- Purpose – completed by Group 6
- Objective – completed by Group 5
- Question – completed by Group 4
- Hypothesis – completed by Group 3
- Critique completed by Group 2
Rotating Stations: Critique questions

Now that you’ve completed your rotation through the room, consider the following questions for your current station. I’ll ask each of the groups to share an answer with the class.

1. Is the problem clear and concise?

2. Does the purpose express the goal/focus of the study?

3. Is the objective/aim based on the study purpose?

4. Does the question direct the type of data that will be collected?

5. What type(s) of hypothesis is it?

6. Does the hypothesis identify the relationships among the variables in the study?
Rotating Stations: Photos of student examples

Problem: Limited NCLEX Prep

purpose: ↑ passing %.

Objective: ↑ amount of NCLEX Prep
to ↑ passing %.

Question: What is the effectiveness of
constant preparation in relation to
increased passing rates?

Hypothesis: There is a positive correlation
between the amount of NCLEX prep and passing %.
Problem: Quantity of workload & ↑ levels of stress

Purpose: To determine if workload level is related to stress level of a nursing student.

Objective: ↑ time or ↓ workload = ↓ stress

Question: Does decreased workload decrease student stress levels?

Hypothesis: ↓ workload will ↓ student stress level
Problem: High demand of school and priorities of life (job, kids, etc.)

The purpose of this study: find a reasonable balance of work and other obligations.

Objective: Find a reasonable workload that is beneficial for students and allows balance with other priorities/obligations.

Q: What would be considered a decent amount of workload to balance with personal obligations?

H: Students limited to 10 credits/semester can better balance workload with personal obligations.
Problem: Consistency of teaching

Purpose: Have standardized ways of teaching.

Objective: Develop a consistent teaching style through implementing homework and quizzes.

Question: Is a consistent teaching style more conducive to effective nursing education?

Hypothesis: A consistent teaching style, utilizing clinical time, powerpoints, PPL, etc., will increase the effectiveness of nursing student education.
**Topic: Nursing Education**

**Problem:** Financial Burden (Textbooks, Access Codes, Clinical Supplies)

**Purpose:** Test significance of materials needed to reduce costs for students.

**Objective:** Develop payment plans to make expenses more affordable.

**Question:** Can we develop multiple payment plans to accommodate different student needs?

**Hypothesis:** A payment plan for students paying out-of-pocket is more effective than the other payment plans.
Innovative Lesson Plans for Active Learning

**Purpose:** To test an intervention to determine if students learn better by reading bookwork vs. clinical experience.

**Objective:** To implement 2 separate experimental groups to assess book vs. experience.

**Question:** What is the relative effectiveness of book learning vs. experience in the clinical setting?