The Cookie Experiment:
A Creative Strategy for Teaching Nursing Research in Taiwan

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Students view research as complex and difficult to comprehend and, therefore, express difficulty in the practical application of research content.

Stimulate students’ interest; promote involvement; develop positive attitudes; and foster practical application is important for teaching nursing research.

Various techniques have been applied to increase students’ experiential learning and to augment students’ comprehension and utilization of research methods.
Purpose

• To examine the effects of a teaching strategy, the Cookie Experiment, on nursing students’ understanding of research procedures, confidence in participating in research, and attitudes toward research.
Design

- A pre-post interventional design
- 95 nursing students, who were in a two-year RN-to-BSN program and enrolled in the Nursing Research course, participated.
- Thiel’s (1987) Cookie Experiment, which allows students to experience research designs and procedure, was applied as a teaching strategy in the class.
The Experiment

• Two kinds of chocolate sandwich cookies
  – A: filled with vanilla cream
  – B: filled with peanut butter
• Taste one kind of cookies, clean palates with a cup of water, taste the other kind of cookies.
• Compare differences between the cookies.
The Experiment

- Complete the Cookie Assessment Tool
  - 4 demographic data
    - age, sex, weight, height, and gender
  - 3 analogue scale (from 0 to 10)
    - degree of hunger, interest or concern about the number of cookies and amount of calories, and interest or concern about healthy eating
  - 8-item 5-point Likert scale
    - feel about texture, moistness, flavor, and appearance of the cookies
  - 2 nominal scale
    - “Do you like cookies?” and “Which cookie do you like better?”
The Experiment

- Discuss
  - Conflict variables in the experiment that may affect the results
  - Strength and limitation
  - Cost of the research
- Review the use of various types of scale.
- Present and review descriptive statistics.
Sample

- Students had completed a 5-year, diploma nursing program before entering the 2-year program.
- Mean age was 21.23 (range 20–24, $SD=.56$) and 96.8% were females.
- 74.7% took the nursing research course for the first time.
- 92.6% had no experience of being a nurse.
Procedure

- Two weeks before the Experiment, students filled out a questionnaire measuring their attitudes toward nursing research (pretest).
- On the day of the Experiment, students were asked to taste cookies by following a standard procedure and complete the 17-item Cookie Assessment Tool.
- After the Experiment, students shared how they related the Experiment to research procedure in the class and completed the questionnaire they did in pretest (posttest).
Instrument

• The 7-item, 5-point Attitudes Toward Research (ATR) scale developed by the authors was used.
• Higher score indicates more positive attitude toward research.
• Content validity was confirmed.
• Cronbach’s α was .70.
Instrument

- Items includes
  - Perceived stress from the research course
  - Acceptance of the research course
  - Familiarization of research procedures
  - Understanding of the practical application of research procedures
  - Interest in engaging in research
  - Confidence in participating in research
  - Willingness to participate in research after graduation
Results

• Before the Cookie Experiment
  – Felt they were not familiar with research procedure or interested in doing research.
  – Had low confidence in participating in research.
Results

• After the Experiment
  – More familiar with and understanding of research procedure
  – Acceptance of the course were improved.
  – The Experiment helped in learning especially in research purposes, questions, designs, sampling, ethics, and presenting results.
  – Thought Nursing Research was a course worth taking.
  – The Experiment should be applied in the class.
<table>
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<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
<th>Z</th>
<th>P</th>
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<td></td>
<td>N</td>
<td>M±SD</td>
<td>N</td>
<td>M±SD</td>
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<td>Familiarization of research procedures</td>
<td>100</td>
<td>2.82±.77</td>
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<td>Understanding the practical application of research procedures</td>
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<td>Interest in engaging in research</td>
<td>100</td>
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<td>Confidence in participating in research</td>
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<td>Willingness to participate in research after graduation</td>
<td>100</td>
<td>3.37±.66</td>
<td>100</td>
<td>3.49±.67</td>
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</table>
Conclusion

• Nursing Research can be an interesting and practical course if appropriate and creative teaching strategies are applied.
• More teaching strategies and activities like the Cookie Experiment can be developed to improve student learning nursing research.
Thank you.