The Impact of Process-Oriented Guided-Inquiry Learning (POGIL) in Fundamental and Medical Surgical Nursing 11 Courses

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Purpose of the study

The Process Oriented Guided Inquiry Learning (POGIL) teaching method utilizes student centered, interactive learning rather than exclusively using a lecture style method. This innovative method has been shown in science disciplines and in fundamental nursing to be effective in providing positive student satisfaction with learning and grade improvement. The method involves students participating in small group work with the professor functioning as facilitator of learning not a lecturer. The purpose of this study is to compare class final grades, Assessment Technologies Institute, LLC (ATi) national standardized exam scores, demographic data, and satisfaction of students who are taking Fundamentals and Medical-Surgical 2 nursing classes in which POGIL group case scenarios are used with students in classes that do not use POGIL as a teaching strategy.

Significance

POGIL enhances teamwork in that it uses small groups of students interacting together to analyze a problem – oriented case study. Each of the students in the group is assigned a role that includes leader, recorder, manager or reflector (POGIL, 2016). The ability for nursing students to work effectively in a team through the POGIL process may help to prepare future nurses for a work environment that requires multidisciplinary teamwork. The Joint Commission (TJC) (2014) has identified teamwork as an essential factor in creating work environments that promote safe patient care.

A priority in nursing education is to enhance the development of critical thinking, clinical thinking and teamwork, which is encouraged through use of POGIL methodology. In a pilot study that compared using POGIL with a lecture based teaching method in a Fundamentals Nursing course those students in the POGIL group had higher mean scores on the ATi national standardized exam (Roller, 2015) The findings from this pilot study are consistent with previous POGIL studies conducted with science courses (Simonson & Shadle, 2013; Soltis, Verlinden, Kruger, Carroll, & Trumbo, 2015). Using pedagogy, such as POGIL in fundamental nursing education courses has been shown to improve final grades (Roller & Zori, 2017). POGIL methodology also enhances the use of teamwork, which may help prepare students to meet an essential competency for professional nursing. Students have reported a preference for a POGIL-based course rather than lecture only method (Case, Pakhira & Stains, 2013; Mulligan, 2014). Exploring POGIL as a teaching strategy is in alignment with NLN goal IV to promote evidence-based teaching practices through the scholarship of teaching and transform nursing education(NLN,2016).

Study Aims

1. Examine and compare the demographics, pre-study GPA, final course grades and (ATi) national test scores of students in Fundamentals and Medical Surgical Nursing 2 sections, who comprise two groups: the experimental group will experience POGIL while analyzing case studies in the classroom. The control group of students will receive the same case scenarios but will not analyze them using POGIL in the classroom. They can choose to complete them individually. The completion of case studies with or without POGIL is not a graded assignment.
2. Describe the students’ satisfaction with completing the case studies whether in a class that used POGIL or not in a class that used POGIL.

**Theoretical/Conceptual Framework**

The POGIL method was modeled on Piaget’s Constructivist theory. In the process of learning, students must be active participants. Learning occurs by allowing students to work in groups and present the topics in class as instructors facilitate (McLeod, 2015). POGIL method participants in this nursing study will work in groups to discuss and answer questions in a case study; a student team leader presents the group’s findings to the entire class and the instructor acts as a facilitator, which is consistent with Piaget’s Constructivist Theory.

**Design/Methods**

This quantitative descriptive study used a comparative design, with two groups of students (Fundamentals and Medical-Surgical Nursing 2) who experienced POGIL while analyzing case scenarios in class and a control group who did not experience POGIL. A t-test was used to compare final grades, ATi scores, and satisfaction survey results.

**Setting**

A mid-size, private university in the northeastern United States was the setting.

**Participants**

A convenience sample of pre-licensure baccalaureate nursing students taking Fundamental in Nursing Courses during the junior first semester and Medical Surgical Nursing 2 in the senior final semester.

**Results**

Comparing the pre-GPA of courses and both Fundamentals and Medical-Surgical 2 groups was non significant. The experimental group Fundamentals (N=153) had higher ATi grades (75.69%) than control group (N=109) was (70.41%) and significant at p=.001. The final course grade of Fundamental experimental group was (88.19%), and the control group was (87.34%) revealing non-significance at p=.124. Subjects in experimental and control groups reported a better understanding of the course material, and greater satisfaction with grades in the Fundamental course.

The experimental group Medical Surgical Nursing 2 (N=60) had no significance in ATi scores (72.78%) and the control group (N=54) was (72.00%) with p=722. The final course grades of Medical Surgical Nursing 2 experimental group was (85.31%), and the control group was (87.01%) revealing no significance at p=.09. Subjects in experimental and control groups reported a better understanding of the course material, and greater satisfaction with grades in Medical Surgical Nursing 2.

**Conclusion**

The results of this study revealed that Fundamental nursing students who experienced POGIL had improved ATi scores but had no significance in final grades. Students reported better course understanding and grade satisfaction compared with students who did not experience POGIL. These results may be attributed to students in the first course of clinical theory.

The results of this study revealed that Medical-Surgical Nursing 2 nursing students who experienced POGIL had no significance in final grades and ATi scores. Students reported better course understanding
and grade satisfaction compared with students who did not experience POGIL. These results may be attributed to students in the final course of clinical theory.

The active learning and teamwork experienced during POGIL pedagogy may be beneficial as an effective student-centered learning to foster critical and clinical thinking and teamwork, which is essential for nursing graduates’ professional success. Additional research using POGIL with a variety of nursing courses could be beneficial in educating undergraduate nursing students.

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**Keywords:**
Group case studies, Process-Oriented Guided Inquiry Learning research (POGIL) and active team learning

**References:**


**Abstract Summary:**
Process oriented guided-inquiry learning (POGIL) has been documented as an innovative pedagogy in science and Fundamental nursing courses demonstrating improvement in grades and national exam success. POGIL research has been expanded to compare this pedagogy in each Fundamental and Medical-Surgical 2 nursing courses and student satisfaction using group case studies.
Content Outline:

1. Introduction

The Process Oriented Guided Inquiry Learning (POGIL) teaching method utilizes student centered, interactive learning rather than exclusively using a lecture style method. Quiz, tests and course grades were reported to be higher in the POGIL group (Simonson & Shadle, 2013)

11. Body

Main point #1 POGIL enhances teamwork in that it uses small groups of students interacting together to analyze a problem – oriented case study

a) Supporting info #1: POGIL studies conducted with science courses (Simonson & Shadle, 2013; Soltis, Verlinden, Kruger, Carroll, & Trumbo, 2015).

Main point #2 POGIL in fundamental nursing education courses has been shown to improve in grades.

a) Supporting info #2: POGIL in fundamental nursing education courses has been shown to improve final grades than control group (Roller & Zori, 2017).

b) POGIL in fundamental nursing education courses had higher mean scores on the ATi national standardized exam than control group. (Roller, 2015)

Main point #3 Students have reported a preference for a POGIL-based course rather than lecture only method

a) Supporting info #3: (Case, Pakhira & Stains, 2013)

b) Supporting info #3: (Mulligan, 2014).

c) Supporting info #3 (Roller & Zori, 2017)

111. Conclusion

A Fundamentals Nursing Course

Main point #1 ATi course grades in Fundamental nursing course improved in the experimental group of students using group case studies in the POGIL pedagogy than control group in this study.

Main point #2 Course final grades did not demonstrate significance in the experimental group of students using group case studies in the POGIL pedagogy and the control group in this study.

B. Medical-Surgical Nursing 2 Nursing Course

Main point #1 Both ATi and final course grades in Medical-Surgical 2 nursing course did not demonstrate significance in the experimental group of students using group case studies in the POGIL pedagogy and the control group in this study.

C. Innovative pedagogy can improve ATi standardize exam grades in Fundamental nursing courses. Students reported satisfaction participating in POGIL group case studies in both Fundamental
and Medical-Surgical Nursing 2 courses in this study. Educational nursing research meets NLN goals for generating evidence to improving pedagogy to meet our student needs.

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