Implementation of the Flipped Classroom in Nurse Anesthesia Curriculum: A Quality Improvement Project

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FIU

Introduction:

- The Kolb Learning Theory provides a valuable framework for comprehending these variations in learning across generations.
- Utilization of generational pedagogical preferences is crucial for student success and critical thinking.
- Most faculty members are from the Baby Boomer generation (1946-1964) or Generation X (1965-1980), they prefer the conventional classroom which the instructor assumes the principal role in imparting knowledge.
- 91% of graduate nursing students are from Generation Y (1981-1996) and Generation Z (1997-2012) with a fondness for a flipped classroom, where student autonomy in classroom preparation is prioritized.

Methods:

Project Identification:
- Background, scope of the problem, knowledge gaps, and implications to practice were identified.
- Boolean search done for research and analysis.
- Project approved by nurse anesthesia faculty and doctoral program.

Objectives Established:
- Participants were identified for participation.
- Pre and post-test design was used to assess knowledge gain.
- Educational intervention was created.

Project Dissemination:
- IRB approval was granted.
- Implementation included consent form, demographic data collection, pre-test, educational module, post-test.
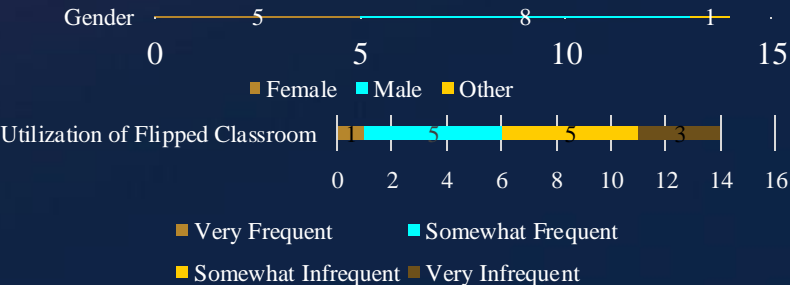- Data was collected and analyzed using Qualtrics and SPSS.

PICO Question:
In multigenerational nurse anesthesia cohorts (P), would the use of a flipped classroom (I) versus a traditional classroom (C) pedagogy increase performance of high-stakes exams (O)?

Purpose:
The aim of this project was to generate a quality improvement educational module to enlighten nurse anesthesia educators about the advantages of a flipped classroom over a traditional classroom, for the improvement of student performance.

Demographics/Participants:

Gender — Female / Male / Other (Very Frequent, Somewhat Frequent, Somewhat Infrequent, Very Infrequent)

Utilization of Flipped Classroom

All participants were faculty members from one of the State University System of Florida Nurse Anesthesia Programs. As a result, 35 faculty members from 5 Universities were invited to participate.

Impact:
Failure to utilize the appropriate generational learning preferences can manifest as decreased student academic performance. Recognition and usage of the optimal pedagogical approaches for each is imperative.

Limitations:
- Sample size
- Incomplete responses
- Distribution

References:
Available upon request.

Results:

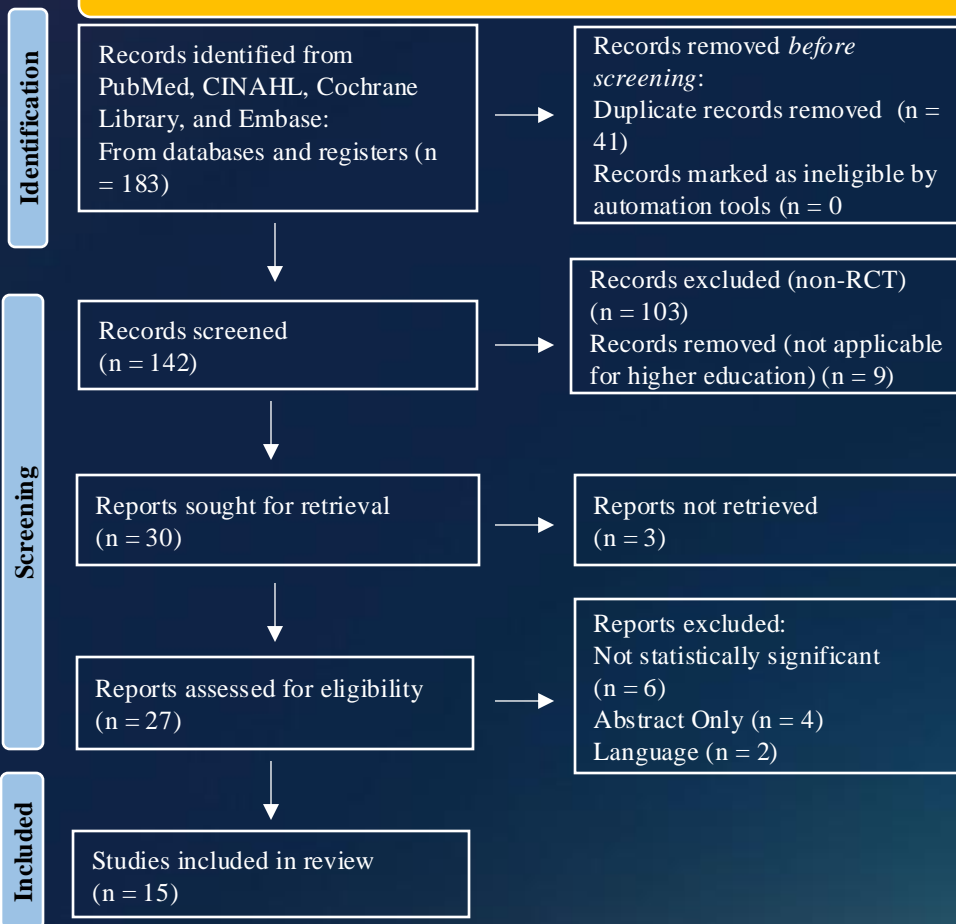|		Q1 Knowledge of Generational Learning Preference Theory	Q2 Knowledge of Nursing Faculty Generational Composition	Q3 Knowledge of Consequences for Not Implementing Generational Learning Preferences	Q4 Knowledge of Graduate Nursing Student Generational Composition	Q5 Knowledge of Quantity of Accredited Nurse Anesthesia Programs	Q6 Knowledge of Generational Learning Preference of Generation Z	Q7 Knowledge of Methods to Incorporate the Flipped Classroom Methodology	Q8 Knowledge of Gamification in a Flipped Classroom Setting	Q9 Knowledge of the Conventional Classroom Methodology	Q10 Knowledge of the Emphasis Flipped Classroom Methodology
Pretest	Correct (n)	9/14	6/14	9/14	5/14	4/14	8/14	10/14	9/14	10/14	10/14
	Percent %	64.29	42.86	64.29	35.71	28.57	57.14	71.43	64.29	71.43	71.43
Posttest	Correct (n)	8/12	5/12	8/12	9/12	6/12	9/12	9/12	9/12	11/12	7/12
	Percent %	66.67	41.67	66.67	75.00	50.00	75.00	75.00	75.00	91.67	58.33
Compare	Change	2.38	-1.19	2.38	39.29	21.43	17.86	3.57	10.71	20.24	-13.10
	SPSS P-Value	0.022									

Likely to Utilize the Flipped Classroom After Quality Improvement Project

Most Likely 5 — Somewhat Likely 3 — Neither Likely nor Unlikely 2 — Somewhat Unlikely 2 — Most Unlikely 0

Identification of studies via databases and registers

Records identified from PubMed, CINAHL, Cochrane Library, and Embase:
From databases and registers (n = 183)

Records removed *before screening*:
Duplicate records removed (n = 41)
Records marked as ineligible by automation tools (n = 0

Records screened
(n = 142)

Records excluded (non-RCT) (n = 103)
Records removed (not applicable for higher education) (n = 9)

Reports sought for retrieval
(n = 30)

Reports not retrieved
(n = 3)

Reports assessed for eligibility
(n = 27)

Reports excluded:
Not statistically significant (n = 6)
Abstract Only (n = 4)
Language (n = 2)

Studies included in review
(n = 15)

Identification
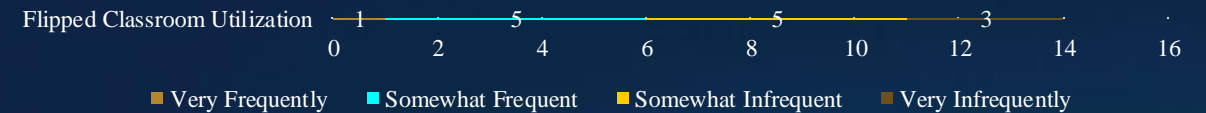
Screening

Included

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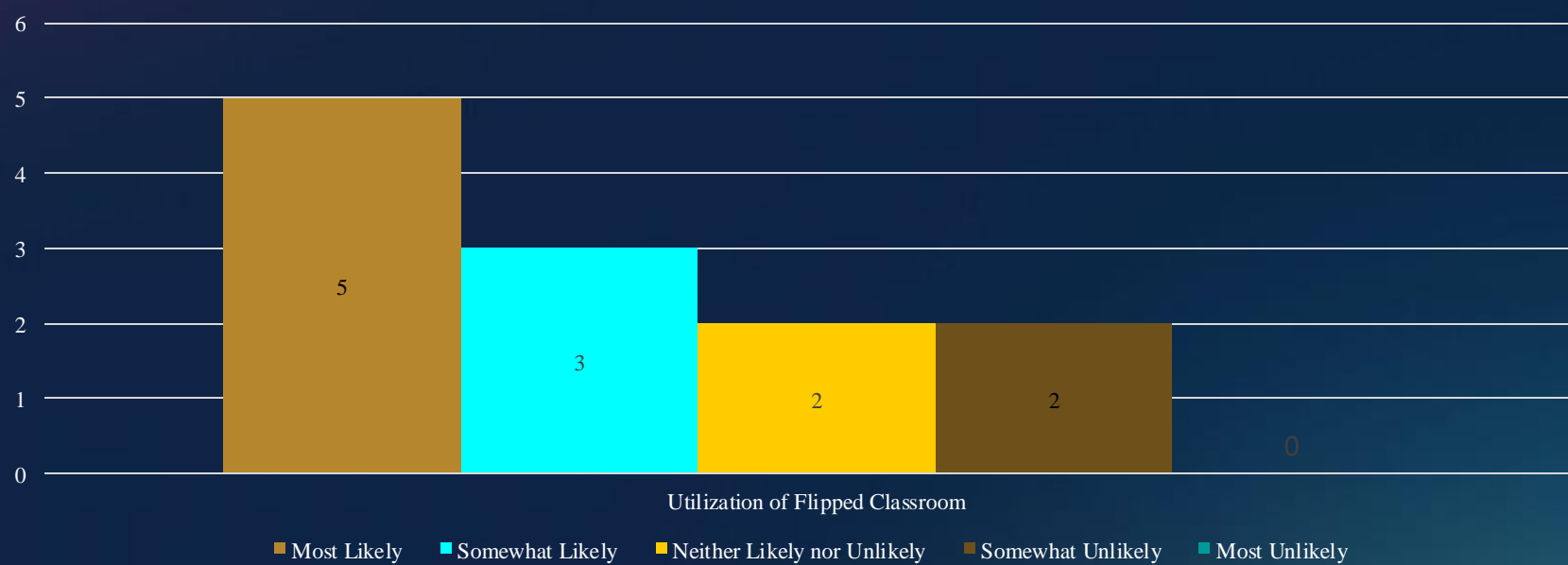
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Flipped Classroom Utilization

1   5   5   3

| 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 |

■ Very Frequently   ■ Somewhat Frequent   ■ Somewhat Infrequent   ■ Very Infrequently