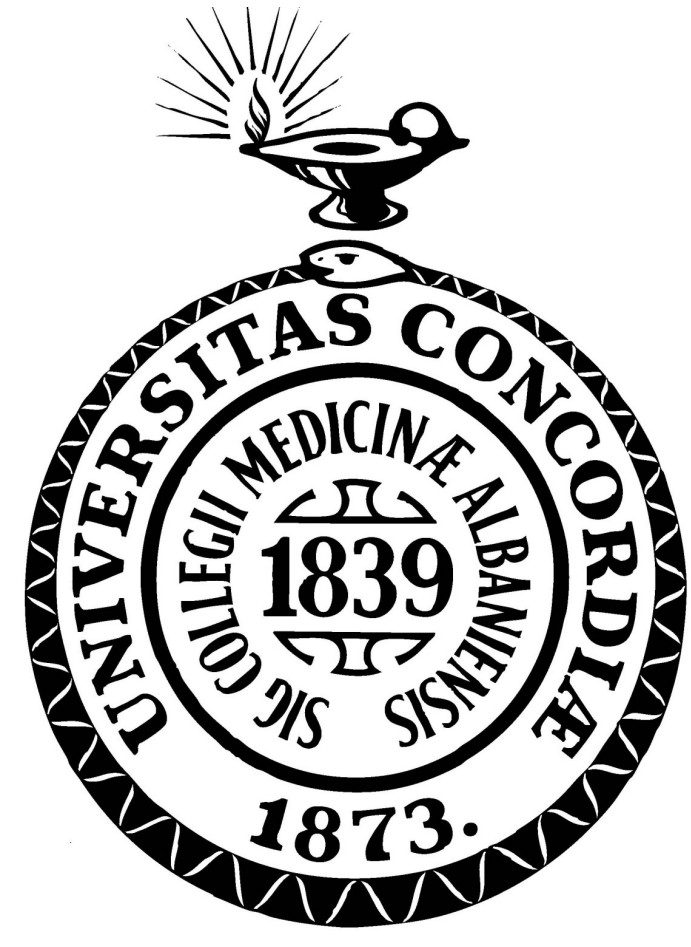


A Journey Across Time:

An Observational Study Unraveling the Experiential Learning of Non-Technical Skills in Anesthesia



Blake Atwood, BSN, RN, Aaron Hayes, BSN, RN, Melanie Redfield, BSN, RN
 Renee George PhD, CRNA, David Giardinelli-O'Connor, PhD, CRNA, Paul Feustel, MEng, PhD

Center for Nurse Anesthesiology, Albany Medical College

More clinical experience leads to improved non-technical skills

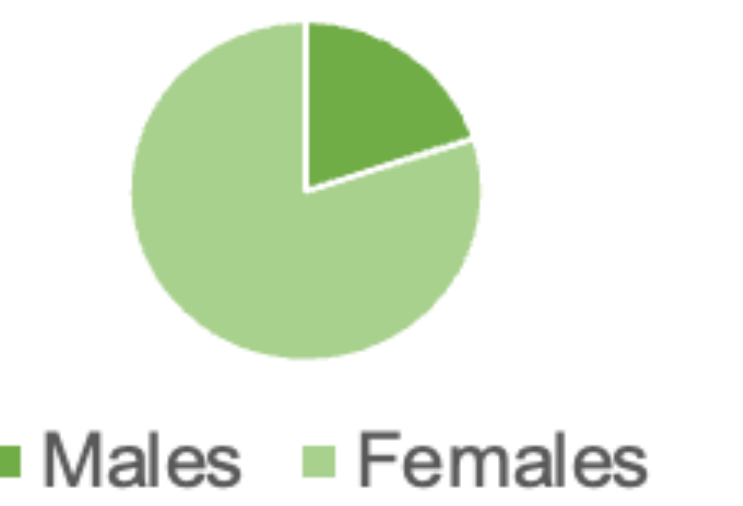
BACKGROUND

- An estimated 80% of adverse events that occur in delivering anesthesia can be attributed to a lack of proper non-technical skills (NTS).
- NTS include:
 - Interpersonal Skills**
 - Communication
 - Teamwork
 - Leadership
 - Cognitive Skills**
 - Situational awareness
 - Decision-making
- Simulation centers provide a safe and open learning environment for student registered nurse anesthetists (SRNAs) to develop technical and non-technical skills in high-fidelity, low-acuity scenarios.
- The Anaesthetist's Non-Technical Skills (ANTS) assessment tool was developed for observing and rating anesthetists' NTS, often in a simulation setting.

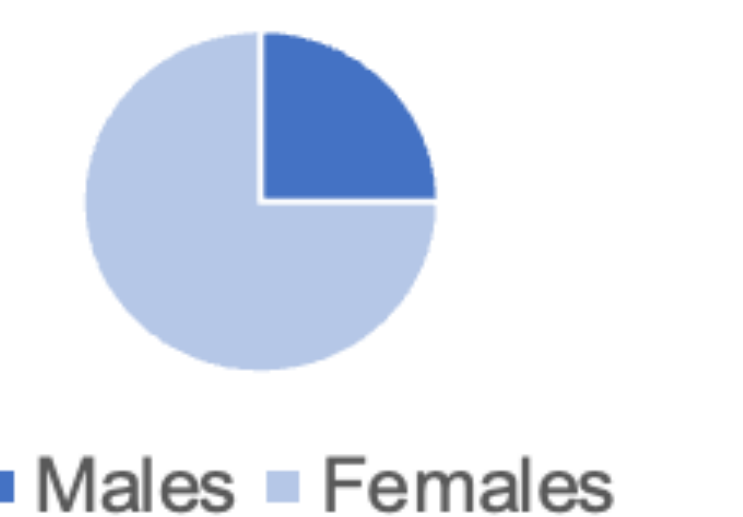
METHODS

- Setting and Participants**
 - Simulation scenario at the Patient Safety and Clinical Competency Center, Albany Medical College
 - Class of 2023: $n = 20$ SRNAs; Master's cohort
 - Class of 2025: $n = 20$ SRNAs; Doctoral cohort
- Clinical Hours**
 - Class of 2023: average 1,170
 - Class of 2025: average 422
- Measures**
 - Cross-sectional retrospective observational study
 - Three researchers used ANTS tool, which is proven valid and reliable, to score each participant.

Demographics: Class of 2023

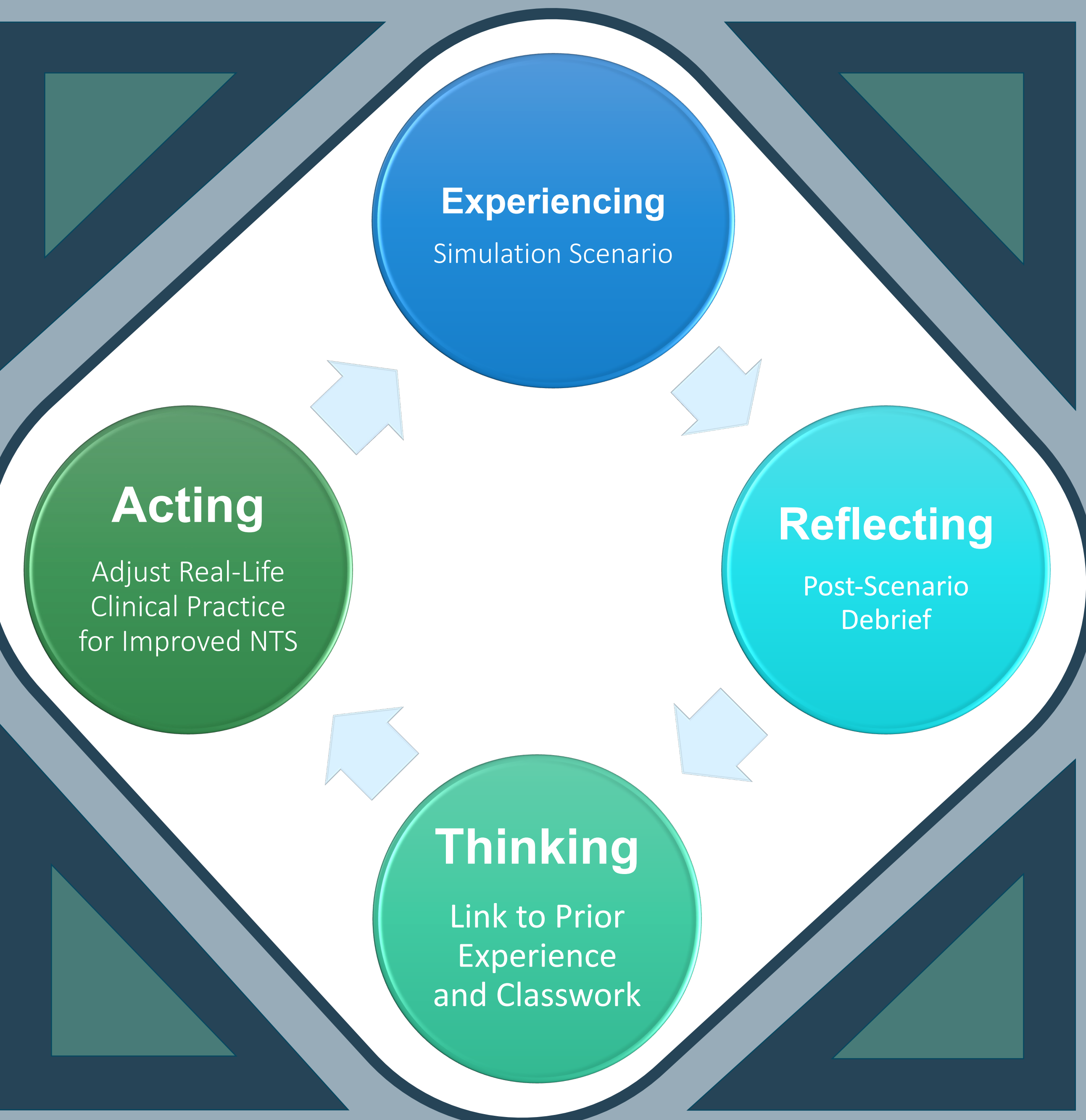


Class of 2025



PURPOSE

- This research examines the role of experiential learning within nurse anesthesia education, regarding a student's NTS: **Does more clinical experience have any bearing on an SRNA's level of non-technical skills?**



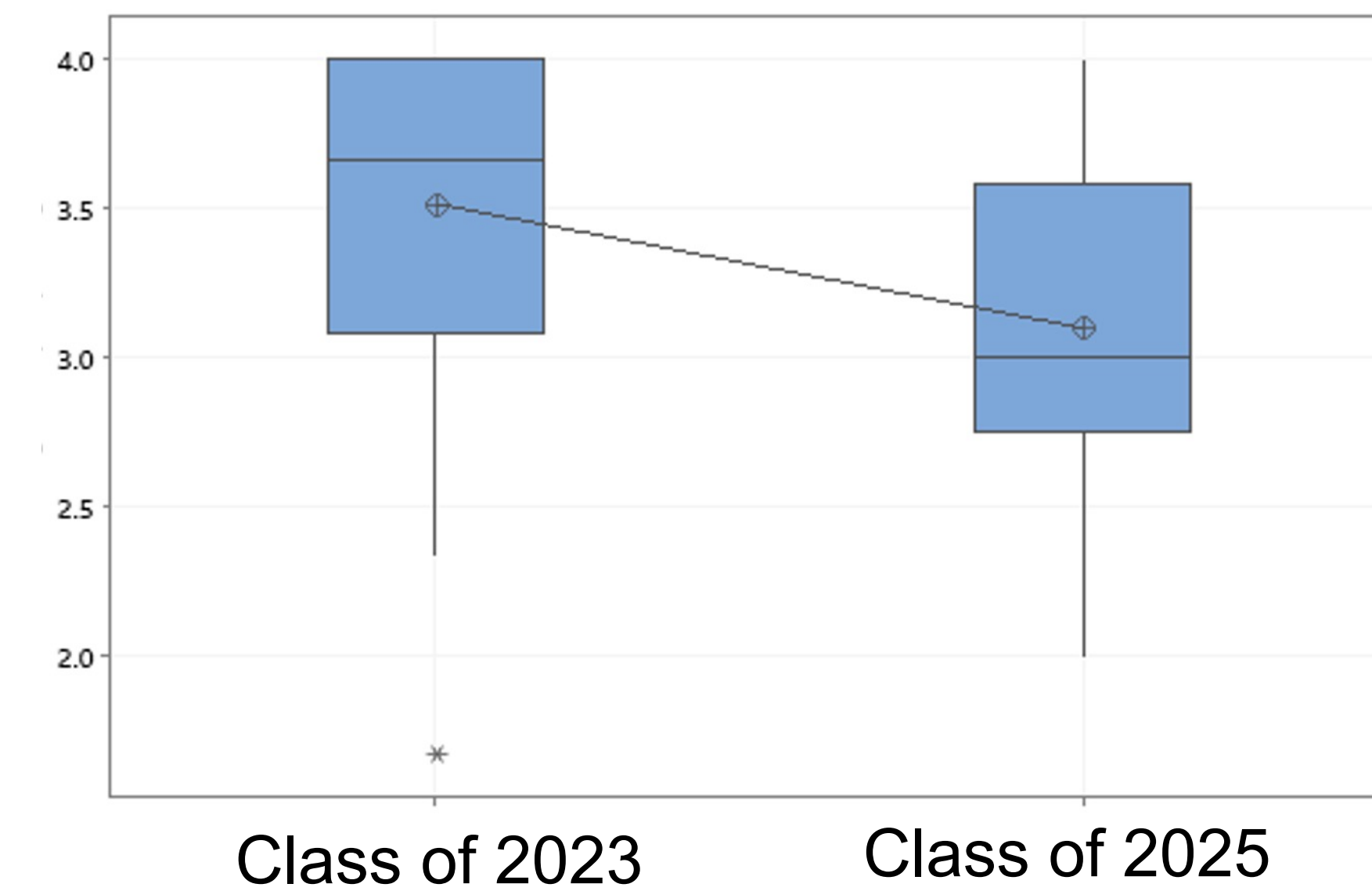
RESULTS

ANTS Assessment Tool

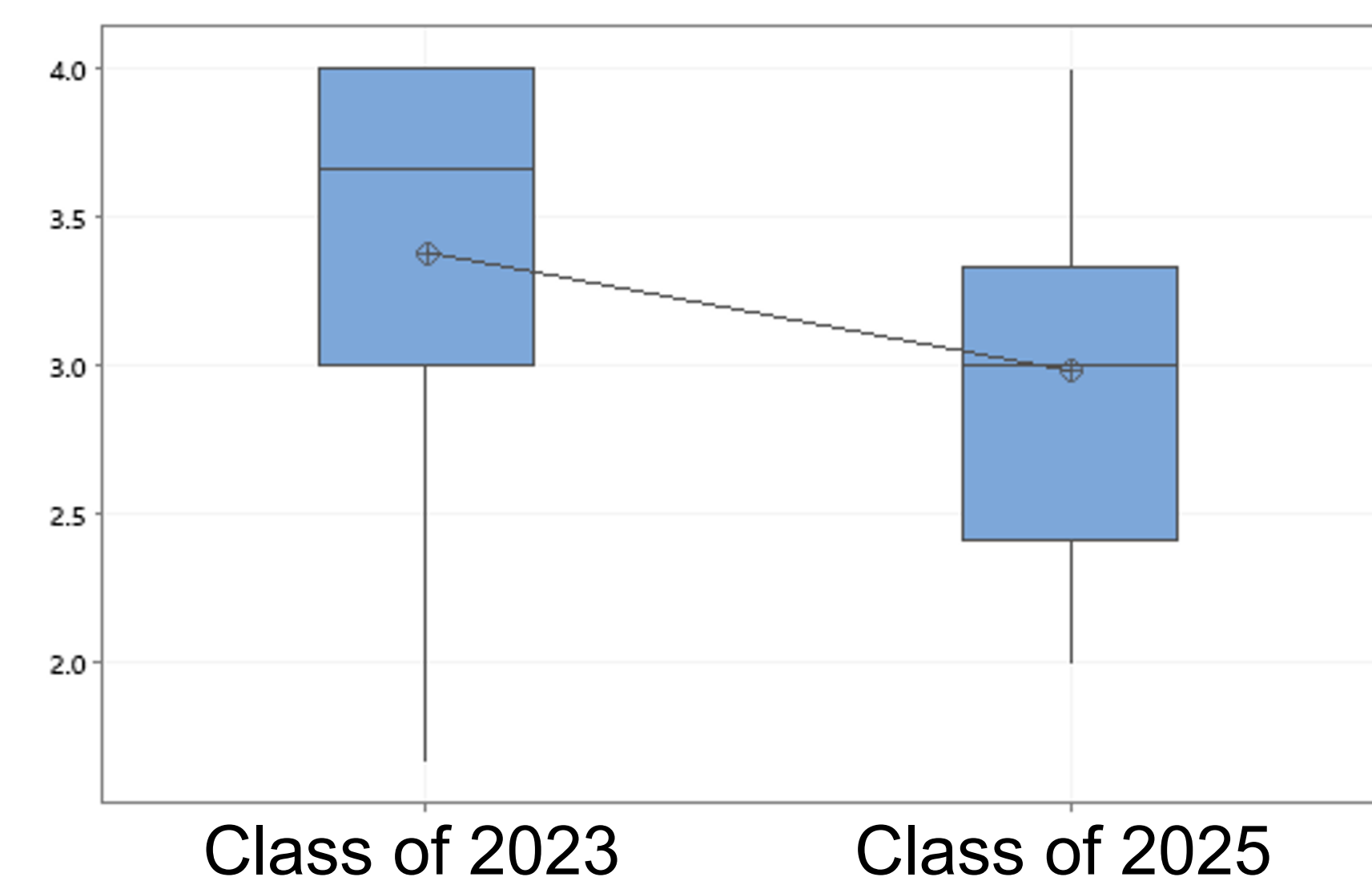
Category	Element	*Rating
Task Management	Planning & preparing	
	Prioritising	
	Providing & maintaining standards	
	Identifying & utilising resources	
Team Working	Co-ordinating activities with team	
	Exchanging information	
	Using authority & assertiveness	
	Assessing capabilities	
Situation Awareness	Supporting others	
	Gathering information	
	Recognising & understanding	
Decision Making	Anticipating	
	Identifying options	
	Balancing risks & selecting options	
	Re-evaluating	

*4 Good; 3 Acceptable; 2 Marginal; 1 Poor; N Not Observed

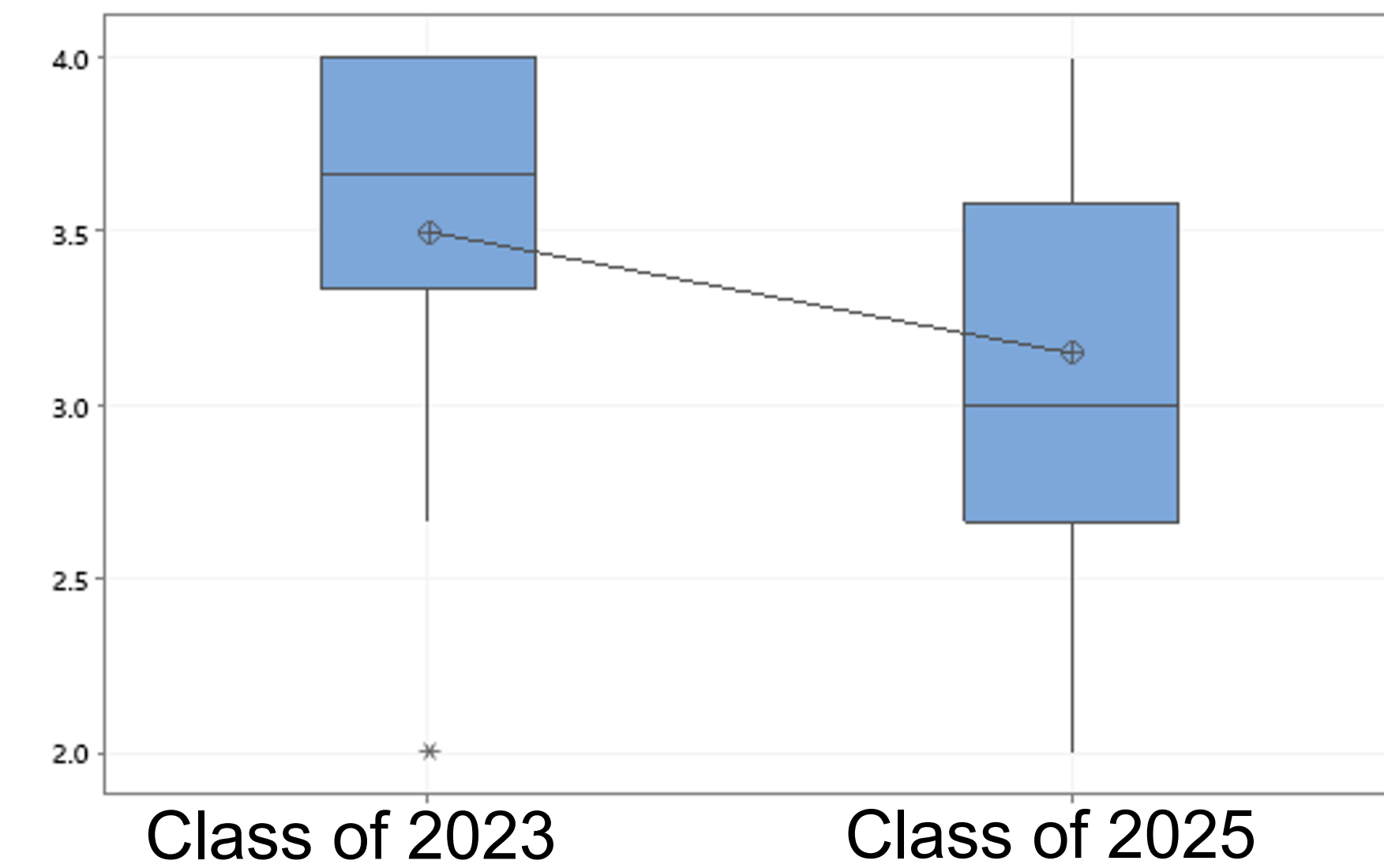
Task Management: Planning and Preparing



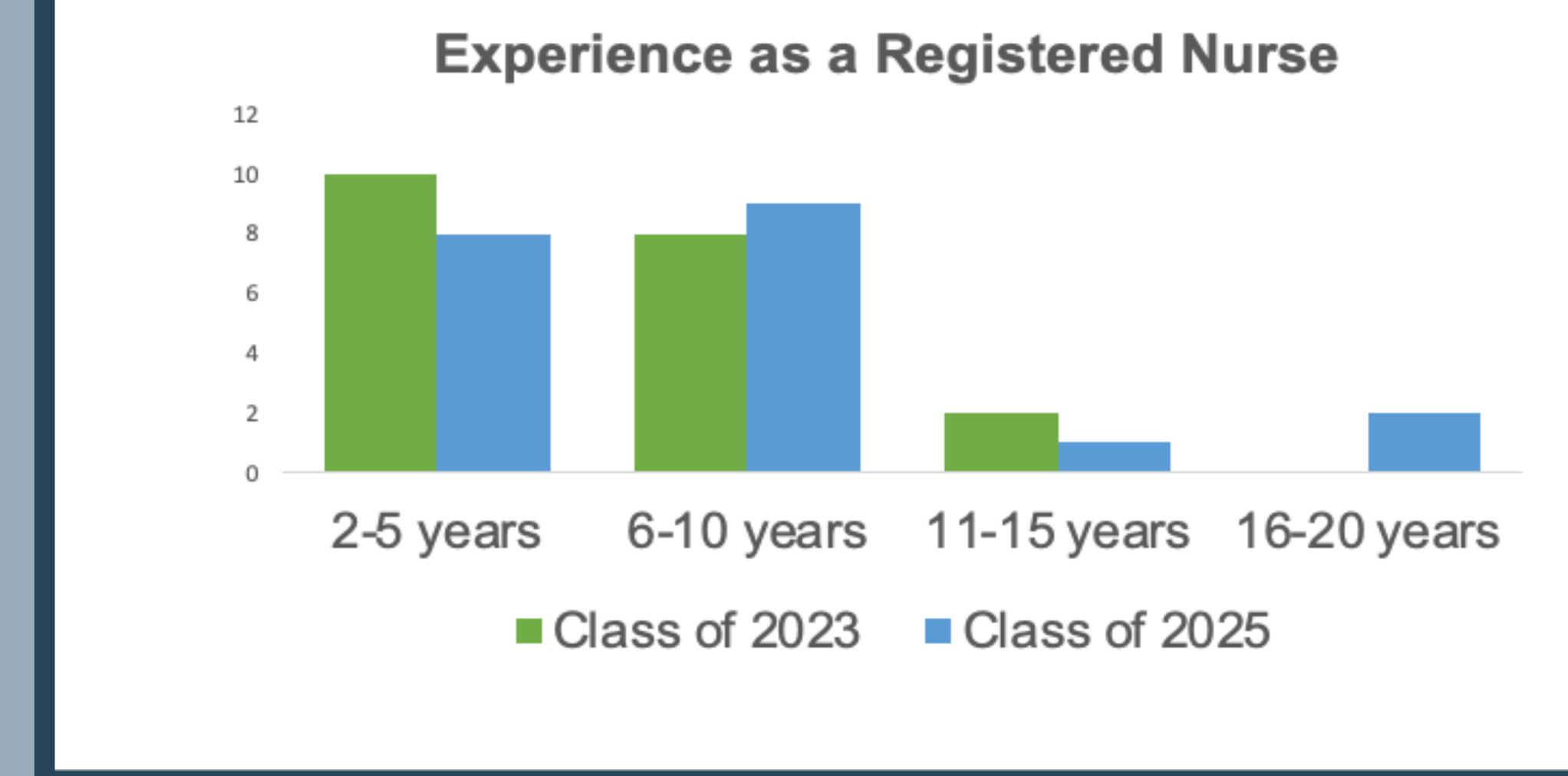
Decision Making: Balancing Risks and Selecting Options



Task Management: Providing and Maintaining Standards



- Clinically relevant differences existed in ANTS scores between the two classes.
- ANTS scores for the Class of 2023 consistently averaged higher than those of the Class of 2025.
- Statistically significant differences existed in three sub-categories.
- Mild-moderate interrater reliability ($Kappa \leq 0.67$).



DISCUSSION

Implications

- Clinically significant data across all categories (task management, teamwork, situational awareness, decision-making) would suggest practical value in real-world settings concerning hours of clinical experience for the SRNA.
- Statistically significant data, correlates with the task management and decision-making categories indicating that these two categories especially rely on clinical experience.
- A review of literature revealed no existing research linking clinical hours to ANTS scores, positioning this study as foundational in exploring such a connection.

Limitations

- Achieving statistical power.
- Controlling for unconscious bias and Hawthorne effect.

Clinical Relevance

- The Institute of Medicine's "To Err is Human" shaped our modern view of preventable patient harm. Advanced knowledge of ANTS and learned strategies are vital for patient safety. This study, alongside future research, can greatly aid this endeavor.

THEORY

- David Kolb's Experiential Learning Theory emphasizes active engagement, reflection, thinking, and practical application of knowledge; learning through experience.

FUTURE STUDIES

- Reproduce the study with a larger sample size to achieve power.
- Repeat the study so the observers and participants have no known relationship.
- Explore if NTS can be improved through education.

