

From Quizzes to Team-Based Learning: Revamping Neonatal Case Studies

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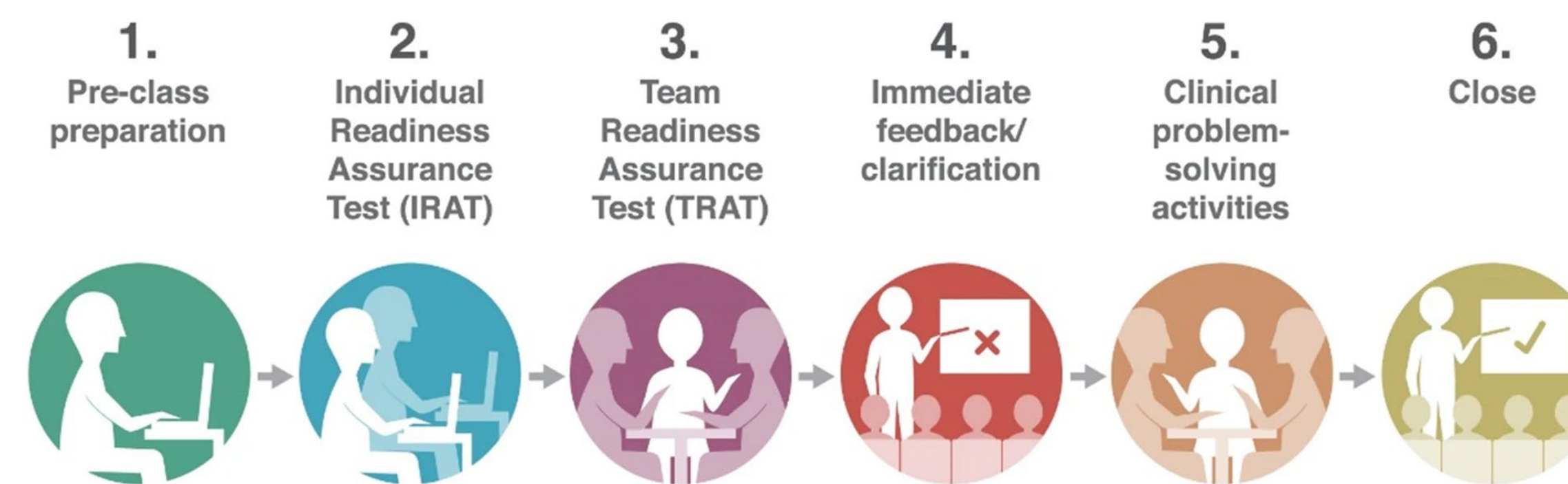
Problem

Neonatal practicum students completed a case study individually via an online quiz, disallowing opportunities for collaboration and discussion on differential diagnoses and management strategies. Converting the case study to team-based learning (TBL) applies learning and leverages NNP students' diverse NICU experiences, enriching discussions and enhancing patient care.

Background

- TBL transforms passive instruction to applied learning.¹
- TBL is popular in healthcare education because it:^{2,3}
 - ✓ Enhances critical thinking
 - ✓ Simulates real-world healthcare teams
 - ✓ Increases engagement
 - ✓ Encourages peer learning
 - ✓ Improves retention and application
 - ✓ Fosters accountability
- TBL Process:
 1. Students prepare for class with assigned pre-work.
 2. In class, students take the individual readiness assurance test (iRAT) based on the pre-work.
 3. Immediately following the iRAT, students are arranged into teams and take the team readiness assurance test (tRAT) until 100% proficient.
 4. Immediate feedback is provided; questions are clarified.
 5. As teams, students work through application exercises. They report decisions publicly, defend their decisions, and examine and critique other teams' decisions.
 6. Closure; option for peer evaluation.

Methods



A diagram of TBL steps.

- Begin with clearly defined learning goals, outlining what students should be able to **do** by the end of the module.
 - Apply evidence-based practice to inform decision-making.
 - Apply knowledge and relevant clinical guidelines to the case study.
 - Develop skills in communication with team members on complex plans of care.
 - Evaluate personal progress and reflect on learning objectives.
- Create interactive application exercises that allow students to apply concepts to real-world problems.
- Analyze the case study to determine pertinent medical history.
- To support this learning, carefully select readings to assign as pre-work, laying the foundation for deeper engagement.

Review

Diagnosis and Management of Neonatal Hypoglycemia: A Comprehensive Review of Guidelines

Sonia Giouleka¹, Maria Gkiouleka², Ioannis Tsakiridis^{1,*}, Anastasia Daniilidou¹, Apostolos Mamopoulos¹,
Apostolos Athanasiadis¹ and Themistoklis Dagklis¹

CU MED CENTER

MATERNAL HISTORY AND PHYSICAL

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MRN: 456789

OB History and Physical

- Develop a five-question readiness test and build into Canvas to be taken individually, then as a team.
- Develop post-TBL reflection questions for students to evaluate themselves and their peers.
- Scoring the assessments as follows: iRat 30%, tRat 60%, reflection 10%.

Results

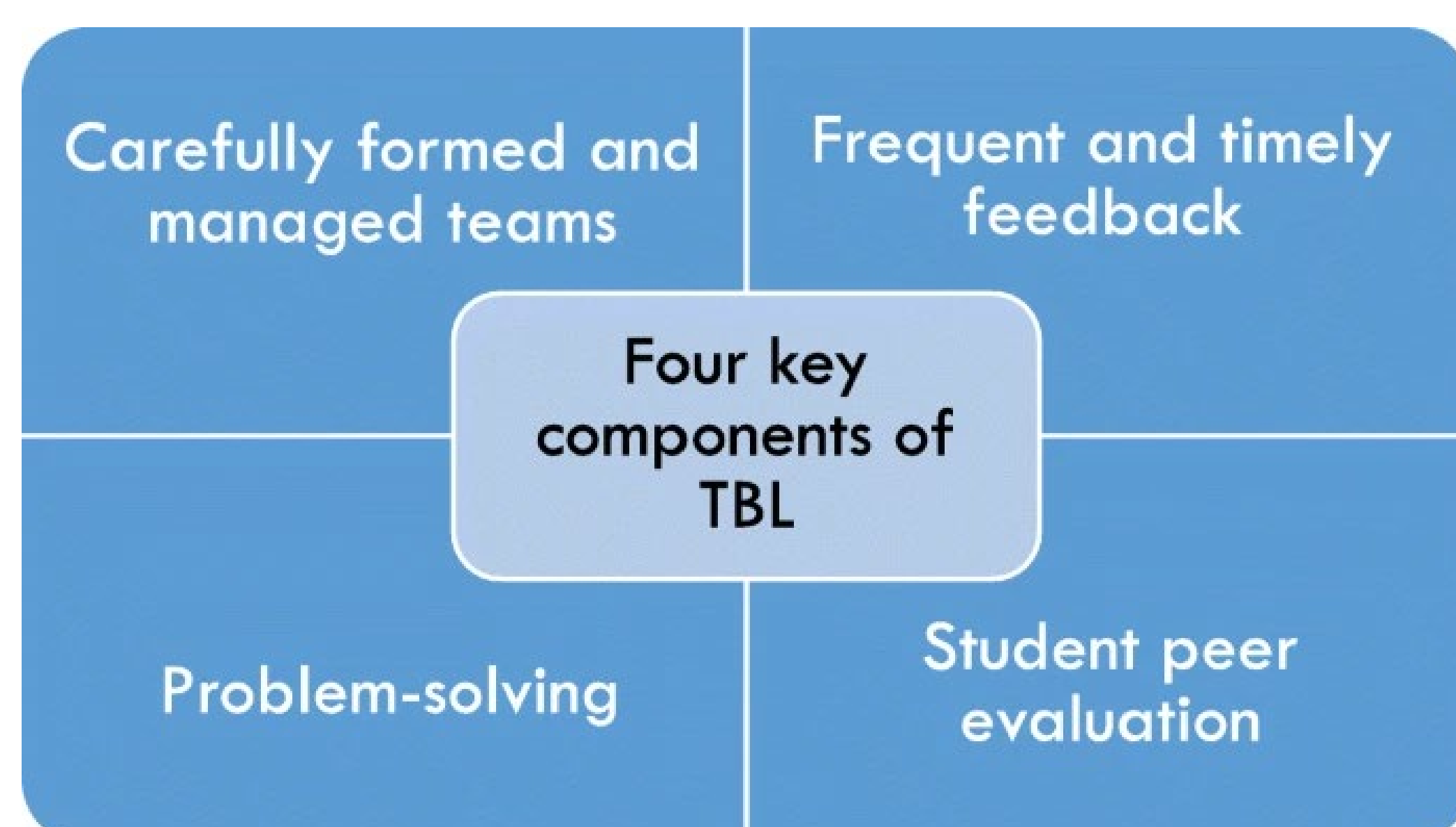
- Three students in the 2026 Cohort participated.
- Collaboration played a vital role in the learning process and required active participation.
- Students reported that the session effectively simulated clinical practice.
- Students appreciated the opportunity to practice a case from start to finish, reinforcing their ability to analyze and apply their knowledge in a meaningful way.
- Students valued this learning experience and requested TBL experiences in the future.

Implications for Practice

- Identify opportunities to transition case studies to TBL throughout practicum curriculum.
- integrate immediate feedback.
- Improved student management of patient care.

Conclusions

Implementing TBL proves an effective educational approach by enhancing student engagement, collaboration, and clinical reasoning. By shifting from traditional quiz format to an interactive, discussion-based structure, students leveraged their diverse NICU experiences and improved application of evidence-based practice. The results demonstrated that students actively participated, valued the opportunity to analyze cases comprehensively, gained confidence in their decision-making skills, and improved their patient management strategies.



Four components of TBL.



Group of unrecognizable students on Zoom.