Team-Based Learning
A Guide to Using TBL in the Classroom

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What is Team-Based Learning?

Team-Based Learning (TBL) is an innovative approach to student-centered learning. Synchronous TBL activities offer an interactive, expert led teaching session that allows many students to work within small teams to apply content to specific problems.

Format/Steps of Team-Based Learning

1. Pre-class Preparation: This includes pre-reading or viewing of pre-recorded presentations and is made available to students about a week prior to the TBL session.

2. Individual Readiness Assurance Test (IRAT): An essential component to motivate students to prepare before class. Typically consists of multiple-choice questions that need to be completed in a timely manner, individually, online, prior to or at the start of class.

3. Group Readiness Assurance Test (GRAT): The GRAT uses the same questions as the IRAT, but it is taken by students in class with their team members. This drives discussion amongst the group members, and they arrive at a consensus on each answer as a team.

Image from BMC Medical Education
https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-020-02287

4. Immediate Feedback/Clarification: The facilitator uses a pre-prepared slide presentation and provides immediate feedback on team responses. The results of the IRAT and GRAT are used to guide the depth of feedback. This is a great time for facilitators to offer clarification on areas of confusion or where groups had a difficult time meeting consensus.

5. Clinical Problem-Solving Activities: The problem-solving activities allow students to practice making decisions and judgements that they may make in the workplace. An appropriate clinical case, with questions, based on the topic of the TBL session, is provided to the class for in-depth discussion in student teams. Teams work on the same problem at the same time. Student groups work together to support their response with clinical reasoning.

6. Close: Facilitators reflect on the student learning during the TBL session, clarify misunderstandings, and question students. This offers an opportunity to summarize key take-home messages or ask each group for one take-home message to close the session.

What is the Role of the Student?

TBL puts the student at the center of their learning. They are responsible for preparing prior to the TBL session and working collaboratively with their group members to problem-solve clinical scenarios. It allows for a small group feel for large class sizes. The interactive nature of TBL encourages healthcare students to develop their communication and collaboration skills.

Students are motivated to complete the pre-reading or pre-recorded assignment, as they are held accountable through the readiness assurance testing component of this model. This results in less content being required during class (flipped classroom).

How Do I Get Started?

Team Based Learning has some recurring steps that can be followed when planning a TBL session. The first step is to utilize backwards design- identify important situational factors like students' prior knowledge, then write clear, specific, and meaningful learning goals and objectives. What do you want your students to be able to do at the end of the session they could not do before? Bloom's Taxonomy offers a wide variety of verbs that can be used when identifying and writing learning objectives.

After you have identified the learning goals and objectives, find or create a problem case or scenario that is authentic and believable. Think of this like a brief story that your students can relate to and may encounter in their profession. Be sure to include important data that needs to be interpreted within the context of the case. This encourages the students to evaluate and analyze the case.

Step three is to prepare the IRAT and GRAT. These readiness assessments should be multiple-choice and well-constructed so that their quality is equivalent to your end-of-course examination. The number of questions depends on the complexity of the content. You don't want to overwhelm them with assessments, rather find the balance in assuring they are mastering the content and the work they have put into preparing is important.

Step four is to determine material that needs to be covered prior to class. The students need to know what to read, watch or do to be prepared for the TBL session. Develop appropriate learning activities (readings, videos, labs, tutorials, presentations, etc.) for the advance assignment that are aligned with the IRAT and GRAT questions and are effective and sufficient for content coverage.

Finally, prepare the instructor led clarification review. This is when the students get clarification from the instructor on the concepts they have been struggling with during the GRAT. During an effective review, the instructor predicts and address knowledge gaps.

How do I Facilitate a TBL Session?

Team-Based Learning in medical education emphasizes the need for team-teaching among disciplines. Team-teaching is described as two or more educators working together to cooperatively plan, interact, observe, question, and teach. Adopting a team-teaching approach to team-based learning provides subject matter expertise in basic sciences and clinical disciplines. The basic scientist can teach and address concepts and questions around basic science, while the clinicians are able to explain how the basic sciences apply to the clinical concept.

TBL is a student-centered process, one in which the teaching team works to facilitate rather than dictate the learning process. Asking questions such as "Why did you choose Answer A?" can spark interactive discussion that fosters critical thinking and learning for the entire class. Other questions you can use to facilitate discussion include (but are not limited to):

- Why didn't you choose (answer)?
- Was there a second choice your team considered?
- What are the three most important points you discussed as a team?
- What remaining concerns or questions do you have?

Closing the session properly is very important to the TBL process. As the facilitator, you want to reinforce key concepts, remind learners of assumptions examined, and summarize inferences that needed to be made from the session. This can be an opportunity to include other Active Learning Strategies, such as a One Minute Paper or a Team Consensus Worksheet, to encourage reflection on the learning experience.

For assistance in designing Team-Based Learning sessions, contact us at educational_improvement@mcw.edu.

REFERENCES

https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-020-02287-y#Fig1

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