Team-Based Learning
An Exciting & Interactive Alternative to Lecture-Based Teaching

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Objectives

1. Basic educational principles of TBL
   A. What it is
   B. Why it works
2. Three phases of TBL
3. Differences between Readiness Assurance Tests & Group Application Exercises
Today’s Goal

Expose you to Team-Based Learning by participating in a “course” using Team-Based Learning

Exam Woes

- Do our exams test recall or application?
- If the latter, do we teach those skills in a lecture-based course?
- As a course director, how often do your instructors complain about how poorly students did on their exam questions?
Small Group Teaching

- Are we reluctant to “give up” lecture time for small group activities?
- What are some common problems with the use of small groups?

Common Problems with the Use of Small Groups

1. “Gunners” and “Social Loafers”
2. Groups unable to stay focused
3. Discussions fall flat
What does it take to become a team?

- Time interacting together
- Sharing of resources (especially intellectual)
- A challenging task that becomes a common goal
- Frequent feedback on individual and group performance

What is Team-Based Learning (TBL)?

- A teacher-directed approach that applies concepts through small group problem-solving discussions in a single classroom with a single instructor
What is Team-Based Learning (TBL)?

- a specific sequence of individual work, group work, and immediate feedback to motivate students to hold each other accountable for being prepared and participating

Paradigm Shifts

- Course goal shifts from knowing to applying
- Teacher shifts from “sage on stage” to “guide at side”
- Students shift from passive to active
- Responsibility for learning (knowledge acquisition) shifts from instructor to student
Instructional Focus Shifts

- Some knowledge acquisition outside of the classroom
- Application activities shifted into the classroom
- In-class feedback about decisions and thinking process

Instructional Principles of Team-Based Learning

- *Individual accountability* promotes preparation
- *Team accountability* promotes effective participation
- *Goal-driven collaboration* promotes learning
- *Controversy* stimulates discussion
- *Peer pressure* fosters desire to succeed
Key Design Principles

- Permanent teams of 5-7, strategically formed
- Readiness assurance process to hold students and teams accountable
- Application activities that promote both learning and team development (4 S’s)
- Frequent and timely performance feedback, including peer evaluation

Three Phases of Team-Based Learning

- Preparation
  - Learners assimilate knowledge
- Readiness Assurance
  - Learners demonstrate readiness to use acquired knowledge
    - Individually
    - Teams
- Application
  - Learners solve increasingly complex problems through intra- and inter- team discussions
Three Phases of TBL

**Phase 1**
- Preparation
- Individual Study (before class)

**Phase 2**
- Readiness Assurance Process
- Group Application Exercise (GAE)
- Individual Readiness Assurance Test (iRAT)
- Group/Team Readiness Assurance Test (gRAT/tRAT)
- Written Group Appeals
- Instructor Feedback

**Phase 3**
- **Application of Course Concepts**

Instructor Feedback
Time to Form Teams...

- **Principle**: Ensure equal distribution of resources to maximize participation of all members

- **Operationalized**:
  - Identify important resources available to individuals and equally distribute those individuals
  - The teacher forms the teams

Three Phases of TBL

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<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th><strong>Phase 3</strong></th>
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<tr>
<td>Preparation</td>
<td>Readiness Assurance Process</td>
<td><strong>Application of Course Concepts</strong></td>
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<td>Individual Study</td>
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<td>iRAT</td>
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<td>Instructor Feedback</td>
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Three Phases of TBL

Phase 1
- Preparation
- Individual Study
- IRAT
- Instructor Feedback

Phase 2
- Readiness Assurance Process
- Written Group Appeals

**Phase 3**
- **Application of Course Concepts**
- Group Application Exercise (GAE)

**Phase 3**
- **Application of Course Concepts**
- Group Application Exercise (GAE)
Using the “IF-AT” form

- Decide with your group which is the correct answer and scratch that answer on the form
- A * beneath the answer you scratched indicates the correct answer; move on to the next question
- If no *, keep scratching until you find the answer with the * underneath
- Points will be scored as follows:
  - Correct answer on the first scratch = 3 points
  - Correct answer on the second scratch = 2 points
  - Correct answer on the third scratch = 1 point
  - Correct answer on the fourth scratch = 0 points

Calculate average individual score ×3
Post with team score

IRAT & GRAT Scores

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<thead>
<tr>
<th>Team</th>
<th>iRAT</th>
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<tbody>
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Three Phases of TBL

**Phase 1**
Preparation
Individual Study

**Phase 2**
Readiness Process
iRAT
Written Group Appeals
Instructor Feedback

**Phase 3**
**Application of Course Concepts**
Group Application Exercise (GAE)
Application Exercise: Medical Education

You and your colleagues must design and implement a new interdisciplinary course in “Pathophysiology and Disease” to replace lecture components of Pathology and Physiology, and a large segment of Pharmacology. Most lecture time will be eliminated to promote more active and interactive learning. It is to be a year-long course and should include clinical problems to encourage the students to exercise clinical reasoning.

4 S’s Create Linked and Mutually Reinforcing Assignments

- Significant problem
- Same problem
- Specific choice
  - Multiple Choice Questions
  - Open-ended Question → Gallery Walk
- Simultaneous report
Typical TBL Modules

Why TBL Works

- Teams focus on making decisions
  - Avoids “divide and conquer” approach
- Team problem-solving improves
  - Teams switch from voting/compromise to real problem-solving as they get to know and trust each other
  - Focus changes from “who is right” to “what is right”
Why TBL Works

- The worst teams outperform the best individuals
  - powerful message about team effectiveness
- Works in large class settings
  - Routinely used in large classes, up to 400, but more typically 120-150, with a single facilitator
  - Possible in difficult classroom spaces
  - Give students something compelling enough to work on & they will ignore room limitations

Why TBL Works

- Activities progress through Bloom’s levels
- Attention focuses on harder concepts
UTMB (Ruth Levine)
Comparison of Psychiatry & Ob/Gyn NBME Performance

Psych began TBL in Class of 2004
Ob/Gyn began TBL in Class of 2006

TBL teachers report high levels of student attendance, preparation, participation and critical thinking
TBL students report being more motivated and enjoying class more, even when the subject is not in their major

UT Austin (Michael Sweet)
TBL Used in Many Disciplines
http://www.tblcollaborative.org
Acknowledgements

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  - Boyd Richards, PhD
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Questions?