

Incorporating Team-Based Learning into Didactics Redesign

Samuel Wang, MD, FAAFP
Monica Kalra, DO



AMERICAN ACADEMY OF
FAMILY PHYSICIANS

AAFP Disclosure

It is the policy of the AAFP that all individuals in a position to control content disclose any relationships with commercial interests upon nomination/invitation of participation. Disclosure documents are reviewed for potential conflicts of interest and, if identified, conflicts are resolved prior to confirmation of participation. Only those participants who had no conflict of interest or who agreed to an identified resolution process prior to their participation were involved in this CME activity.

All individuals in a position to control content for this session have indicated they have no relevant financial relationships to disclose.

Our Residents



AMERICAN ACADEMY OF FAMILY PHYSICIANS

Our Reality



AMERICAN ACADEMY OF FAMILY PHYSICIANS

Learning Objectives

- Understand the generational learning shift
- Describe the flipped classroom
- Identify the steps for incorporating Team Based Learning into the residency curriculum
- Understand the benefits and challenges of Team Based Learning

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Generational Shift in Learning Style

- Silent Generation: 1925 – 1945
- Baby Boomers: 1946 – 1964
- Gen X: 1965 – 1980
- Gen Y/Millennials: 1981 - 2004

PAACE Journal of Lifelong Learning, Vol. 10, 2001

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Poll Question

How do millennials prefer to learn?

1. With structured lectures, in the morning
2. With assignments which have due dates
3. In a multimedia classroom with informal interactions
4. In a multimedia classroom with pedantic interactions

AMERICAN ACADEMY OF FAMILY PHYSICIANS

The Millennials

- Generation Me
- The Trophy Kids
- The Boomerang Generation



AMERICAN ACADEMY OF FAMILY PHYSICIANS

The Millennial Learner

- Prefers
 - a multimedia classroom
 - a relaxed environment
 - relevant teaching
 - active learning

<http://www.apa.org/monitor/2010/03/undergraduates.aspx>

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Teaching Millennials

- Evidence Based Medicine
- Building Rapport
- Collaborative Learning



AMERICAN ACADEMY OF FAMILY PHYSICIANS

Learner Preferences at Our Program

- The majority of our residents prefer:
 - Workshops
 - Case-based lectures
 - Demonstrations
 - Board-exam style questions



www.shutterstock.com - 213330322

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Let's Make a Change!

- Team Based Learning:
 - First developed in 2005
 - Popularized by Larry Michaelsen
 - The learning is embedded in the work



AMERICAN ACADEMY OF FAMILY PHYSICIANS

The Four Components of TBL

- Group work
- Accountability
- Feedback
- Assignment design

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Poll Question

According to Bloom's Taxonomy of Learning, what is the most fundamental activity of learning?

1. Analyzing
2. Creating
3. Remembering
4. Understanding

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Bloom's Taxonomy of Learning (Modern)



15

AMERICAN ACADEMY OF FAMILY PHYSICIANS

The Traditional Classroom

| Inside of Classroom | | Outside of Classroom | | | |
|---------------------|------------|----------------------|---------|----------|--------|
| Remember | Understand | Apply | Analyze | Evaluate | Create |

- Focus - The “sage on the stage”
- Transfer of Information – At teacher’s pace, often compressed
- Learning – Passive
- Communication – Unidirectional

16

AMERICAN ACADEMY OF FAMILY PHYSICIANS

The Traditional Classroom

| Inside of Classroom | | Outside of Classroom | | | |
|---------------------|------------|----------------------|---------|----------|--------|
| Remember | Understand | Apply | Analyze | Evaluate | Create |

- Application & analysis
 - Homework and exercises are done outside of class time
 - Minimal guidance
 - Teacher not available when student has the most questions
- Evaluate & Create?

The Flipped Classroom

| Outside of Classroom | | Inside of Classroom | | | |
|----------------------|------------|---------------------|---------|----------|--------|
| Remember | Understand | Apply | Analyze | Evaluate | Create |

- Transfer of Information - Students acquire basic concepts outside of class
- Learning – Active, at student's pace, more time to process

The Flipped Classroom

| Outside of Classroom | | Inside of Classroom | | | |
|----------------------|------------|---------------------|---------|----------|--------|
| Remember | Understand | Apply | Analyze | Evaluate | Create |

- Application – Done in-class, with more guidance and feedback
- Focus – On the student
- Communication – Bi-directional
- Learning – Clarifying, analyzing, synthesizing

The TBL Classroom

| Outside of Classroom | | Inside of Classroom | | | |
|----------------------------|------------|-----------------------|---------|----------|--------|
| Remember | Understand | Apply | Analyze | Evaluate | Create |
| Individual Activity/Effort | | Group Activity/Effort | | | |

- Group Learning Activities
 - Case Studies
 - Quizzes
 - Problem-solving

Key Elements of Our TBL Format

- Pre-reading
- Individual Readiness Assessment Test (IRAT)
- Team Readiness Assessment Test (TRAT)
- Mini-lectures
- Case Discussions

Pre-Readings

- Topic-based
- Usually 3-4 articles (often from AFP journal)
- Selected by participating faculty for each session
- Distributed to all residents and faculty in advance

Individual Readiness Assessment Test (IRAT)

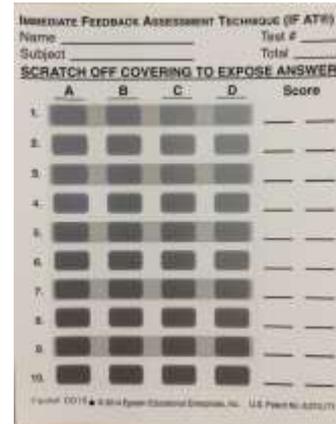
- 10-question quiz
- Content from pre-readings
- Every resident takes it individually first
- Quiz is turned-in for scoring
- 10 minutes in duration

Team Readiness Assessment Test (tRAT)

- Same quiz as iRAT
- Completed as a small group
- Group must agree on an answer
- Discussion/debate occurs within the groups

Team Readiness Assessment Test (tRAT)

- Use of scratch cards to reveal correct answers
- Team points awarded & tracked
- Facilitated review of correct answers
- 30 minutes in duration



Mini-Lectures & Case Studies

- Mini-lecture
 - Focus on a specific subtopic
 - Key concepts
 - Common misconceptions
 - Usually 20 minutes duration

Mini-Lecture & Case Studies

- Case Study
 - Four to five questions
 - Designed to help residents apply their knowledge, discover nuances, explore alternative solutions
 - Each group report answers at same time using “flags”
 - Facilitated discussion with each group defending their respective answers
 - Usually 20 minutes duration

27

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Mini-Lecture and Case Studies



28

AMERICAN ACADEMY OF FAMILY PHYSICIANS

TBL Organization

- Once per block
- 3-hour session
- All residents are required to attend
- Residents stay in the same groups
- Friendly competition



TBL Strengths

- Engaging, interactive “game” format
- Fosters teamwork and collaboration
- Creates a sense of accountability among peers
- Residents seem to enjoy it

Resident Evaluation of TBL

- TBL average rating: 4/5
- Traditional lecture average rating: 3.1/5
- Long-term knowledge retention maintained in 2 out of 3 TBL sessions

TBL Challenges & Barriers for Faculty

- Requires HIGH level of coordination & planning
 - 2-4 preparation meetings for each TBL session
 - Long lead times needed
 - Case studies require much thought and effort

TBL Challenges & Barriers for Faculty

- Potential for burnout

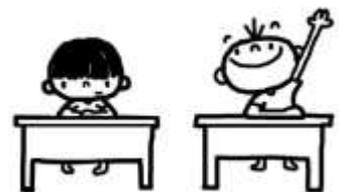


33

AMERICAN ACADEMY OF FAMILY PHYSICIANS

TBL Challenges & Barriers for Residents

- Preparation time to complete pre-readings
- Discomfort with speaking-up in a group
- Groups being hijacked by an outspoken person
- Ease/comfort/familiarity with traditional lectures



34

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Questions?

Let's try it!!

IRAT/TRAT

Which of the following is not one of Newton's Laws?

- A. Force = mass x acceleration
- B. Energy can neither be created or destroyed; it can only change forms
- C. For every action there is an equal and opposite reaction
- D. Apples never fall far from the tree

Newton's Second Law

Force = mass x acceleration



AMERICAN ACADEMY OF FAMILY PHYSICIANS

Newton's Third Law

When one body exerts a force on a second body, the second body simultaneously exerts a force equal in magnitude and opposite in direction on the first body.



AMERICAN ACADEMY OF FAMILY PHYSICIANS

Case Study Question

You've just driven around a curve on a narrow, one way street at 50 mph when you notice a car identical to yours coming straight for you at 50 mph. You have only two options: hitting the other car head on **or** swerving into a massive immovable wall, also head on. In the split second before the impact, you decide to:

- A. Hit the other car
- B. Hit the wall
- C. Hit the car, and then the wall
- D. Take your hands off the wheel – it makes no difference

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Newton's Third Law in Action

<https://www.youtube.com/watch?v=r8E5dUnLmh4>

AMERICAN ACADEMY OF FAMILY PHYSICIANS

Summary

- Millennials have a preferred learning style
- The flipped classroom fits the millennial learning style more closely
- Team Based Learning is a useful, engaging format for didactics
- TBL requires much effort, but has significant benefits

During the break...

- Discuss / think about how you might implement the information you just heard.
- Fill out a session evaluation.

Questions?

Thank You!!

AMERICAN ACADEMY OF FAMILY PHYSICIANS



AMERICAN ACADEMY OF
FAMILY PHYSICIANS

STRONG MEDICINE FOR AMERICA