# Who We Are?

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Goals

- Provide a brief overview of Team Based Learning

- Share TBL Board Review Curriculum

- Participate in a simulated TBL Board Review session

- Share published data about TBL and data from our institution

- Discuss TBL implementation strategies at your institution

Key Features We Wanted in a Board Review Curriculum

- Monthly Curriculum

- Interactive format

- Resident as facilitator

- Utilization of PREP series

- Objective data to trend

Why Use TBL In Board Review?
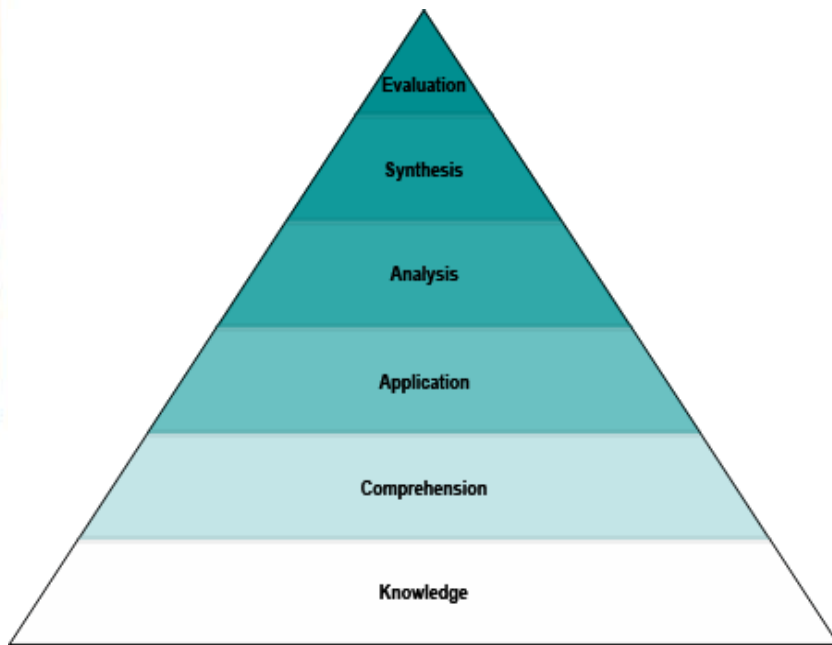
Bloom's Taxonomy of learning. Adapted from: Bloom, B.S. (Ed.) (1956)
Taxonomy of educational objectives: The classification of educational goals.
Handbook I, cognitive domain. New York ; Toronto: Longmans, Green.

Three Phases of TBL

Team Learning Phases

Phase 1	Phase 2	Phase 3
Preparation (pre-class)	Readiness Assurance	Application of Course Concepts

Individual Study

Individual Test

Group Test

Written Group Appeals

Instructor Feedback

Small-group Assignments

Our TBL Board Review Curriculum

- 13 pre-assigned monthly topics for board review based on PREP content topics and ITE areas of concern

- PGY-3 Teaching Resident(TR) assigned as facilitator for each month board review

- Teaching resident given 2 articles on TBL and guide to teaching TBL at beginning of TR rotation

Why Use TBL in Board Review?

- Learners benefit from hearing thought process of peers

- Immediate Feedback and Reinforcement of concepts

- Attention is focused on harder concepts

- Team building strategy

- A single instructor can both provide content expertise and oversee the learning endeavors of an entire class.

TBL Facilitator
Pre Conference Preparation

- Teaching resident chooses 2 Pediatrics In Review Articles based on topic
  - Sent to residents 2 weeks before conference

- TR creates 1st quiz-simpler concepts
  - 5 questions from PREP online
  - Performance must be >70% on questions

- TR created 2nd quiz-harder concepts
  - 5 questions from PREP online
  - Performance must be <50% on questions

- IF-AT answer key provided to align answers appropriately

- Slides with answer explanation highlights for teaching

Time to Form Teams…

- Principle: When forming teams, you want to ensure equal distribution of resources and maximize participation of all members

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

Haidet, P, Getting Started with Team-Based Learning: A Strategy for Transforming Teaching and Learning
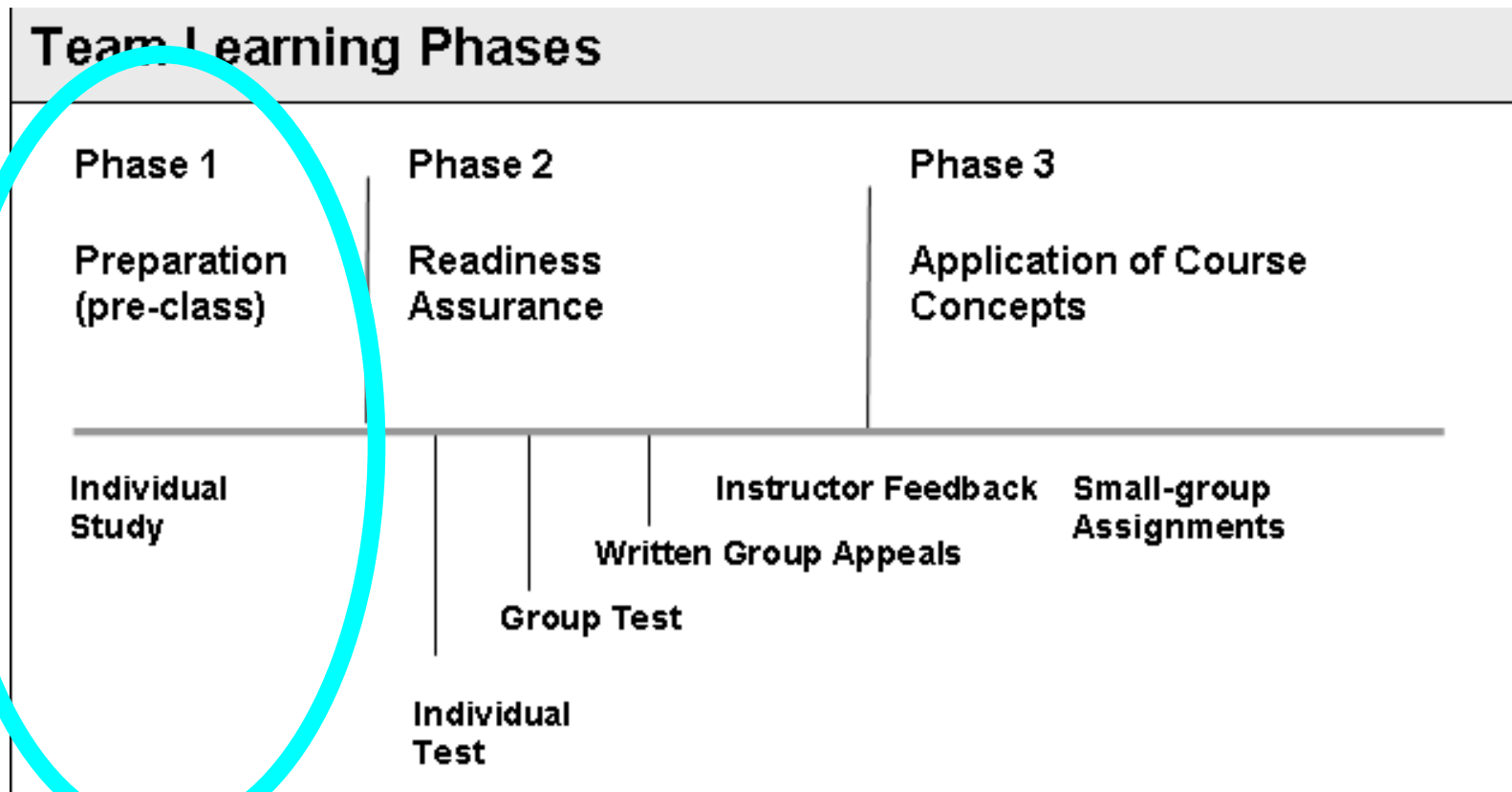
Team Formation

- How many times have you attended APPD?

  A. >20 times

  B. 16-19 times

  C. 13-15 times

  D. 10-12 times

  E. 7-9 times

  F.   4-6 times

  G. 1-3 times

  H. First meeting!

Team Formation

- Make the process transparent so all residents know how they ended up in a particular team, even if the process is totally random
  - Who read the article?

- Distribute what you define as 'resources' for a team as evenly as possible
  - Training level

- Strive for the teams to have a diverse composition

Pre-Class Preparation

Team Learning Phases

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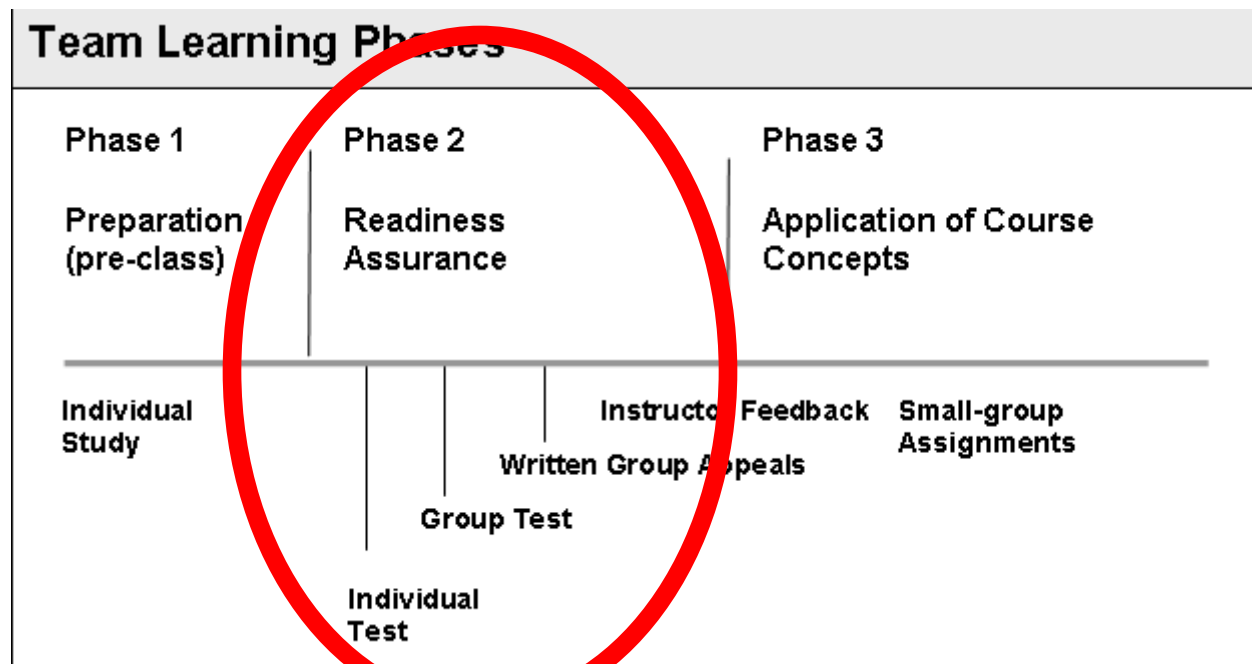
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Individual Preparation

- Please spend 5 minutes reviewing the Pediatric RRC guidelines we have provided

Readiness Assurance

Team Learning Phases

Phase 1	Phase 2	Phase 3
Preparation (pre-class)	Readiness Assurance	Application of Course Concepts

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Readiness Assurance-Individual Test

- Please take 5 minutes to complete the quiz individually

Using the Individual
Readiness Assurance Answer Sheet

Question	Answer				
	A	B	C	D	E
1	5				
2	3	2			
3	1	1	1	1	1

- 5 points for each question
- Assign points based on how sure you are of your answer

Team Readiness Assurance

- Now, take the SAME TEST again as a team

- Use the 'IF-AT' forms to record your team's answers

IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT®)

Name _____ Test # _____

Subject _____ Total _____

SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.					_____
2.					_____
3.					_____
4.					_____
5.					_____
6.					_____
7.					_____
8.					

Using the 'IF-AT' form

- Decide with your group which is the correct answer and scratch that answer on the form

- If there is a '*' beneath the answer you scratched, you got the question correct; move on to the next question

- If there is not a '*', keep scratching until you find the answer with the '*'

- Points will be scored as follows:
  – Correct answer on the first scratch: 5 points
  – Correct answer on the second scratch: 3 points
  – Correct answer on the third scratch: 1 point
  – Correct answer on the 4th or 5th scratch: 0 points

Readiness Assurance Experience

- How did the groups do?

- What were the individual vs team scores?

- How did the process work?

Team Learning Phases

Phase 1

Preparation (pre-class)

Phase 2

Readiness Assurance

Phase 3

Application of Course Concepts

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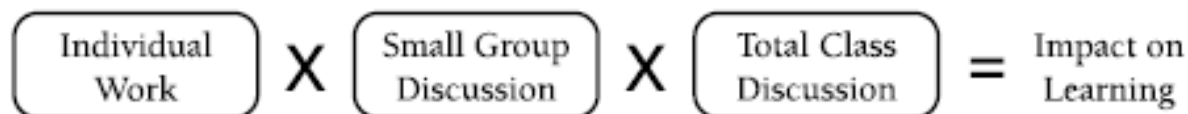
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at Tufts Medical Center

Phase 3

Figure 1.3. Keys to Creating Effective Group Assignments

$$\boxed{\text{Individual Work}} \times \boxed{\text{Small Group Discussion}} \times \boxed{\text{Total Class Discussion}} = \text{Impact on Learning}$$

To obtain the maximum impact on learning, assignments at each stage should be characterized by 4 S's:

- **Significant** – Individuals and groups should work on a problem, case, or question demonstrating concept's usefulness.
- **Same problem** – Individuals and groups should work on the same problem, case, or question.
- **Specific choice** – Individuals and groups should be required to use course concepts to make a specific choice.
- **Simultaneously report** – If possible, individuals and groups should report their choices simultaneously.

Application Phase

- We are going to handout another 5 questions

- Read through them as individuals

- Do all questions as a group

- We will then simultaneously report answers

- Large group discussion

TBL Board Review Session

TR facilitates placement of l___ g___ varying levels of learning

Team formation

Learners do 1 **set of PREP questions individually**

Indiv test

Group answers 2nd set of PREP questions collaboratively

Group review

Group test

S___ re___ a___

Application of course concepts

___ f___

Instructor Feedback

Large group discussion of why answers were chose

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at **Tufts** Medical Center

Are Top Students Held Back by Teams?

Team	Individual Scores			Team Score	Gain	% Gain
	Low	Avg	High			
1	137	173.0	213	276.0	63.0	29.6%
2	180	187.8	199	291.3	92.3	46.4%
3	203	229.0	271	322.0	51.0	18.8%
4	154	195.7	230	291.8	61.8	26.8%
5	177	205.2	227	318.8	91.8	40.4%
6	186	198.6	215	295.5	80.5	37.4%
7	197	210.0	233	321.8	88.8	38.1%
8	149	173.4	199	282.8	83.8	42.1%
9	150	180.8	208	278.3	70.3	33.8%
10	126	179.2	200	299.5	99.5	49.8%
Avg.	**165.9**	**193.3**	**219.5**	**297.8**	**78.3**	**36.3%**

Every team score is higher than its own BEST member (avg. = 36.3%)

Gain (or loss) based on comparing the score of each team to the score of its own BEST member.

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Floating Hospital for Children at Tufts Medical Center

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6	186	198.6	215	295.5	80.5	37.4%
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Lowest team is 5 points higher than the highest individual in the entire class.

Gain (or loss) based on comparing the score of each team to the score of its own BEST member.

Are Top Students Held Back by Teams?

Team	Individual Scores			Team Score	Gain	% Gain
	Low	Avg	High			
1	201	221.4	**237**	**325.5**	88.5	37.3%
2	168	197.8	**255**	**331.5**	76.5	30.0%
3	147	177.5	**249**	**273.8**	24.8	9.9%
4	168	194.4	**211**	**315.0**	104.0	49.3%
5	174	194.3	**209**	**315.0**	106.0	50.7%
6	157	186.0	**224**	**299.3**	75.3	33.6%
7	169	193.2	**218**	**307.5**	89.5	41.1%
8	163	181.2	**201**	**313.5**	112.5	56.0%
9	180	217.8	**254**	**339.0**	85.0	33.5%
10	170	198.6	**226**	**319.5**	93.5	41.4%
11	164	199.8	**231**	**314.0**	83.0	35.9%
12	194	217.5	**252**	**315.8**	63.8	25.3%
13	152	201.4	**269**	**313.5**	44.5	16.5%
14	176	185.5	**224**	**301.5**	77.5	34.6%
15	175	210.4	**246**	**304.5**	58.5	23.8%
Avg	**170.5**	**198.5**	**233.7**	**312.6**	78.9	34.6%

Lowest team is 4.8 points higher than the highest individual in the entire class.

Gain (or loss) based on comparing the score of each team to the score of its ownBEST member.

Our Performance

Topic	Individual Avg Performance Score	Group Avg Performance Score
IBD	55%	75%
Puberty and Short Staure	80%	80%
Toxicology	60%	100%
Inborn Errors of Metabolism	68%	85%
Genetic syndromes	78%	85%
Immunology	74%	100%
Nephrotic and Nephritic Syndrome	75%	85%
AVERAGE	70%	87%

Data

Individual versus Team Readiness Assurance Test Scores*

- In the majority of classes, the lowest team score will be higher than the highest individual score <u>in the entire class</u>.

- Overall, approximately 4% of the individual scores will be higher than the lowest team score in a class.

- Teams will outscore their own <u>very best</u> member 99.9+ percent of the time (i.e., 1,114 of 1,115 teams).

*Based on 30 years of data from 6,161 students in 1,115 teams.

Figure 2. RAT scores.

Parmalee, et al, Twelve tips for doing effective Team-Based Learning (TBL) Medical Teacher 2010

NBME Psychiatry Subject test results: Percentile Scores
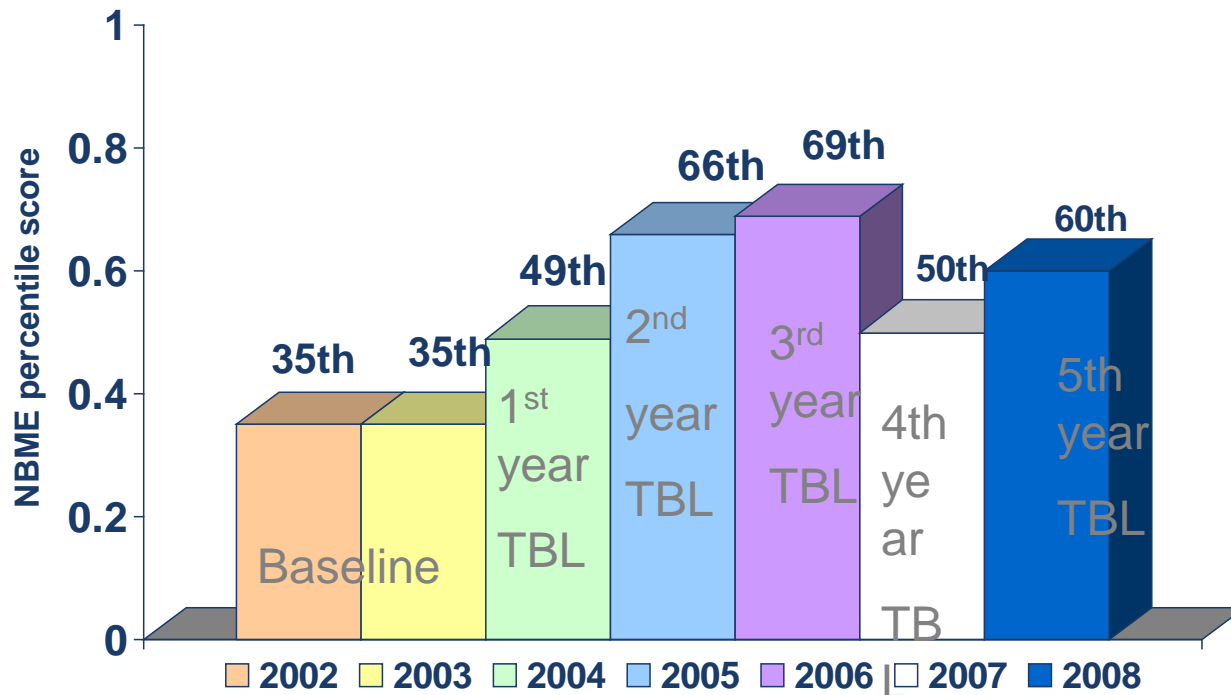
Class of 2004 scores significantly higher than previous years (p<.05), and Class of 2005 and 2006 higher at p<.01 level. Class of 2008 represents first half of the Academic year.

NBME Ob/Gyn Subject test results: Percentile Scores
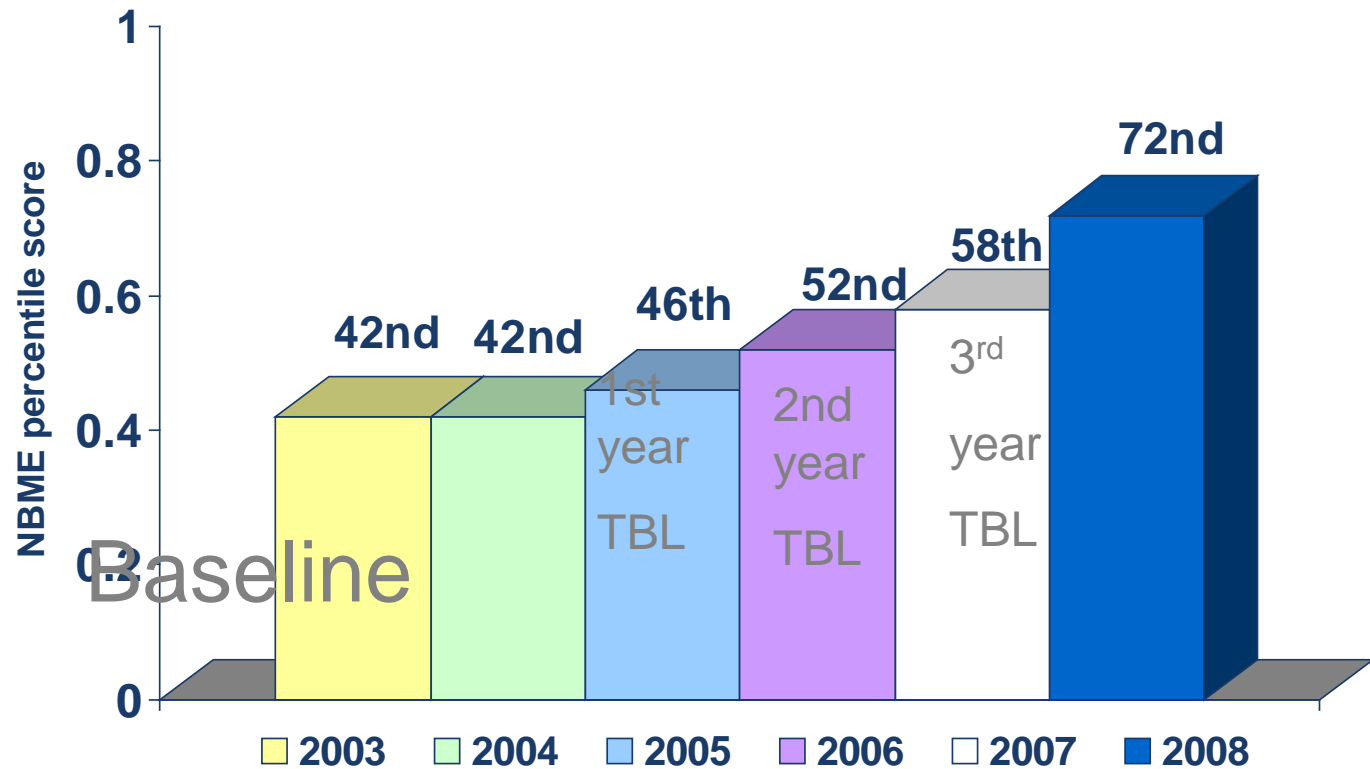
2008 scores represent 1st half of the Academic year

References

- Haidet, P, Getting Started with Team-Based Learning: A Strategy for Transforming Teaching and Learning Workshop, Presented at TUSM May 2011

- Parmalee, et al, Twelve tips for doing effective Team-Based Learning (TBL) Medical Teacher 2010

- *Michaelsen, et al*, The Essential Elements of Team-Based Learning, NEW DIRECTIONS FOR TEACHING AND LEARNING, no. 116, Winter 2008.

For more info:

http://teambasedlearning.org

http://www.tblcollaborative.org
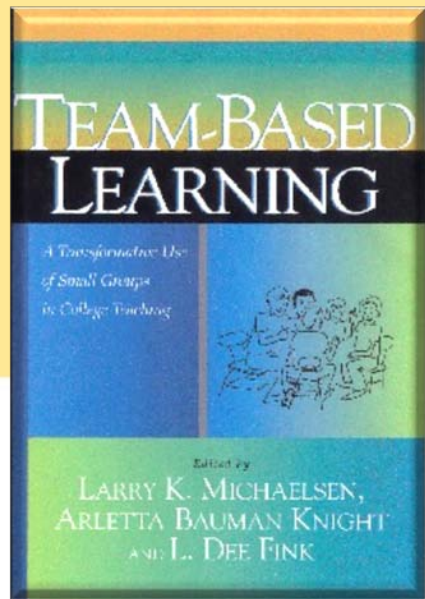
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Thank You!