Introduction to Team-Based Learning
3 hour Workshop

Facilitator Guide

Dr Anne Marie O'Brien and Dave O'Hanlon

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General information

Workshop Title	**Introduction to Team-Based Learning (TBL)**
Target Audience	Anyone interested in a learning how to create powerful and effective TBL applications
Pre- Requisite(s)	Pre-reading study pack
Brief Description	This workshop is designed to introduce participants to the basics of Team-Based Learning
Key Objective(s)	At the end of this workshop, the participants will be able to: LO1: Identify the core components of a "Team Based Learning" approach to teaching and learning. LO2: Discuss how the Team Based Learning approach compares and contrasts with other pedagogical approaches. LO2: Apply their learning to devise a strategy for implementing Team Based Learning within their own practice.
facilitators	Dr Anne Marie O'Brien and Dave O'Hanlon

Lesson plan

Time	Instructor	Student	Support Materials
2 mins	• Introductions	• Us and them	
8 mins	• What is TBL • Learning outcomes/objectives	•	Powerpoint presentation
2mins	• Prior knowledge probe	Draw your current understanding of TBL	Paper and pens
5minutes	**Team Formation** • Line up in alphabetical order according to discipline • Count off teams • Time for inter-team introductions	Time for teammates to introduce themselves to their table mates once people are reseated Pick team name	
130 minutes	TBL Cycle		
	Introduction (12 minutes) Why active learning Flipped classroom Graduate attributes		Powerpoint presentation
	Reading (5 minutes)	Students read	Study pack
	iRAT (6 minutes)	Individual MCQ…using clickers	RAP test
	tRAT (15 minutes) Introduce decremental scoring Highlight how IF-AT create good group norms	Teams retake same test	IF-AT
	Introduce Appeals procedure. (6 mins) Distribute appeals form and explain the process. Discussion	One ambiguous question that could lead to an appeal	
	Break (10 mins)	Coffee back at desk	Set up tables for tRAT
	Complete RAP cycle with mini-lecture (12 minutes)	This will continue with PowerPoint presentation and video	
	Complete team task 1 (10+ 10 minutes)	Students analyze, decide and publically commit	Task hand out 4S questions handouts

			Voting Cards
	Complete team task 2 (10 +10 minutes)	Students analyze, decide and publically commit	Task handout Paper, pens, blue tack, post its
	Complete team task 3 (10+10 minutes)	Students analyze, decide and publically commit	Task hand out Paper pens
	Complete team task 4 (5 minutes) Reflect on knowledge of TBL now	Students reflect and rewrite current understanding of TBL	Paper and pens and bluetac
	Compare before and after understanding of TBL (10 minutes)	Students will display Team TBL with individual TBL side by side	
15 minutes	Debrief TBL cycle and 4 elements (15 minutes)		
15 minutes	Workshop CLOSE • Revisit TBL cycle • Highlight 4 essential elements • Recommend Next steps • Recommend Supplemental Materials		
5minutes	Questions (5 minutes)	First have table talk then outstanding questions	
	TBL Peer review/ Evaluation	Evaluation form	Peer review resources

Supplies/equipment and material for the lesson

Print one for each participant

- Pre reading Study pack
- Readiness Assurance Test
    - iRAT
- one clicker per individual preset up with individuals name

Print per team

- Appeals form
- 4S Team task worksheets

Additional supplies

- Pack with markers and pens and Bluetac
- Large sheets of paper (at least A3)
- One IF-AT per team
- One set of voting cards
- Stands (if possible)

Organizing the Materials

Organizing tables at start to suit team work
Place the team folder and a set of voting cards on the centre of each table

Preparing team folders
- tRAT
- Application task worksheets
- If-AT
- Appeals form

Supporting Documents

Readiness Assurance Test

Individual Readiness Assurance Test Team based learning (TBL)

Facilitators copy

1. Which statement best describes the purpose of in-class activities?

    A. Apply knowledge, solve problems, generate discussion, extend knowledge

    B. Review content, extend knowledge, generate discussion

    C. Revise content, explore cases, generate discussion questions

    D. Apply knowledge, analyse decisions, write and present summary findings

> **A** The structure of TBL activities gives individuals and their team opportunity to apply what they know as they analyse scenarios, extend their knowledge, make judgments/decisions, and publicly commit to a decision."

2. It is important to create TBL teams that are…

    A. Small enough that everyone must pull his or her weight

    B. Large, diverse, and instructor selected

    C. Grouped with similar abilities

    D. Selected by students to minimize initial student resistance

> **B** see section 1

3. Most students will have had "group" learning experiences in which

    A. Teammates have contributed unequally

B. Teammates have contributed equally

C. The instructor would spot a weaker student and help him/her out

D. The instructor could easily tell which group was most productive

A Personal experience

4. The bulk of class time in a TBL course is spent:

    A. Reviewing important course content
    B. Using course content to solve problems and make decisions
    C. Working on team writing assignments and reports
    D. Listening to lectures, interspersed with activities

Answer B – page 2 section 3 "The bulk of class time is spent having student teams solve, report, and discuss solutions to significant problems."

5. Which of the following is the best seating arrangement for effective TBL?

B

A

C

D

> **D** But there could be an argument for A. Also chance for a discussion in relation to all types of seating eg tiered when it may not be possible to have a dedicated space

6. **lecturer has prescribed learning activities for students to work on prior to class. She carries out the individual quizzes (IRATs) followed by the team quizzes (TRATs). The class then proceed to work on application exercises. What has been overlooked by the lecturer?**

   A. Peer Assessment
   B. Self-Assessment
   C. Self-Assessment and peer Assessment
   D. Mini Lecture

> **D** To conclude the Readiness Assurance Process, the instructor delivers a short facilitated discussion or mini-lecture to clarify only on the concepts that remain problematic for the students.

7. **In TBL, when do students get feedback on their quiz performance?**
   A. After having completed all the iRAT questions as an individual
   B. After each question is completed in the individual quiz
   C. After having completed all the tRAT questions as a team
   D. After each question is completed in the team quiz

> **D**

8. **What is the most important purpose of the Readiness Assurance Process?**
   A. Creates a social learning environment where students can compare their understand of course concepts
   B. Delays feedback so students are forced to review and reflect on the right answers for the tRAT
   C. Holds students individually accountable for coming to class prepared

D.   Turns initial individual preparation into true readiness

> **D** turns that preparation into true readiness to begin problem solving

9.   What is the primary purpose of the Application Activities?
- A. They enable the instructor to get an idea of which teams are struggling with learning the course material
- B. To enable the teams to report decisions publically and defend their own decisions, and examine and critique other teams decisions
- C. They enable the instructor to get a quick read on individual students preparation, to help identify students at risk.
- D. To give the teams sufficient time to generate a lengthy written rationale for their decisions that can be easily graded by the instructor

> **B** The structure of TBL activities gives individuals and their team opportunity to analyse scenarios, make judgments/decisions, and publicly commit to a decision. This public report of a team's decision creates an intense reporting conversation where students get specific and timely feedback on the quality of their thinking and their process for arriving at their decision

Team Readiness Assurance Test – tRATs

Repeat the test as a team and agree on one of the choices (without using any reference materials).

Then go to the scratch card on the line number next to the appropriate question number for the individual test. After deciding on an answer, scratch off the covering to see if you are correct and score it as below:

1 scratch= 4 points; 2 scratches = 2 points; 3 scratches= 1 points; 4 scratches = 0 points

1. Which statement best describes the purpose of in-class activities?

A. Revise content, explore cases, generate discussion questions

B. Review content, extend knowledge, generate discussion

C. Apply knowledge, solve problems, generate discussion, extend knowledge

D. Apply knowledge, analyse decisions, write and present summary findings

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A. After having completed all the iRAT questions as an individual

B. After each question is completed in the individual quiz

C. After each question is completed in the team quiz

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8. What is the most important purpose of the Readiness Assurance Process?
E. Turns initial individual preparation into true readiness

F. Creates a social learning environment where students can compare their understand of course concepts

G. Delays feedback so students are forced to review and reflect on the right answers for the tRAT

H. Holds students individually accountable for coming to class prepared

9. What is the primary purpose of the Application Activities?
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B. They enable the instructor to get a quick read on individual student's preparation, to help identify students at risk

C. To enable the teams to report decisions publically and defend their own decisions, and examine and critique other teams decisions

D. To give the teams sufficient time to generate a lengthy written rationale for their decisions that can be easily graded by the instructor

Readiness Assurance test announcements

<u>Announcement to be made at the start of each i-RAT</u>

1. You are under examination conditions at all times during this individual Readiness Assurance Test (iRAT).

2. You must leave all bags, outdoor coats, electronic devices, phones, pencil cases and notes away from your table top. You must **not** access any material whilst completing this assessment.

3. You may have on your desk your UB card, a pen or pencil and a web enabled device such as a phone, tablet or laptop.

4. When 50% of students have completed the test, we will announce 5 minutes for others to complete the assessment. If you finish your assessment early please wait patiently and in silence.

5. This is **your** individual test. You must not talk to, or use any other form of communication with, other students during this examination.

6. If you have any problems with the assessment or with the technology please do not worry, just raise your hand and a member of staff will help you. In the event of a technology problem no student will be disadvantaged, we have back up plans.

7. On the clickers provided choose version 1,2,3 or 4. We will start the assessment when everyone is logged in, so please be patient.

Announcement to be made at the start of each t-RAT

1. We will now move on to your team readiness assurance test. This is still a summative assessment but you may now talk to your team mates.

2. You must not access any material whilst completing this assessment. Leave all bags, phones and notes away.

3. When you have **all agreed** on an answer to each question you can scratch off what you believe to be the correct answer.

   a. If you are correct at the first time attempt....score four
   b. If you are correct at the second attempt.......score two
   c. If you are correct at the third attempt.......score one
   d. If you are correct at the final attempt.......score zero

4. When your team has completed all questions raise your team flag and hand in your scratch card. When 50% of teams have completed the t-RAT we will announce 5 minutes for all teams to complete the assessment.   If you finish your assessment early please wait patiently.

Appeals Form

Rules for tRAT Appeal - Content

1. Team only appeals are allowed. No individual appeals are permitted
2. The team must have completed an 'Intention to Appeal' form, signed by all team members present and submitted to the class facilitator by the end of the class.
3. This form must then be completed and submitted electronically to the same class facilitator no more than 24 hours after the class where the tRAT was taken (72 hours after if the tRAT was taken on a Friday)
4. Teams must base their appeal on materials that were provided as preparation for the RAT.
5. If an appeal is successful, the team RAT score will be adjusted for only the team that turned in appeal. Individual scores will not be adjusted.
6. There will be no in-class discussion about appeals.
7. No extra marks will be awarded if the team has already been awarded the maximum marks.
8. Appeals on this form must be based on content i.e. your team disagrees with the answer.

You must, using *ONLY* the space inside the box:
1. Describe the reason for disagreement;
2. Present clarification and provide supporting reference(s).

Team Number _____

AIT
Connect & Discover

tRAT APPEALS FORM
QUESTION

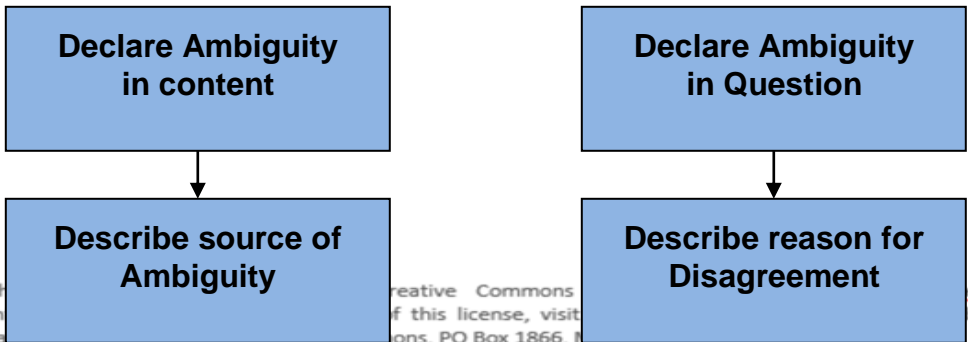## Rules for tRAT Appeal – Ambiguous Question

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2. The team must have completed an 'Intention to Appeal' form , signed by all team members present and submitted to the class facilitator by the end of the class.
3. This form must then be completed and submitted electronically to the same class facilitator no more than 24 hours after the class where the tRAT was taken (72 hours after if the tRAT was taken on a Friday)
4. Teams must re-write the question to improve it
5. If an appeal is successful, the team RAT score will be adjusted for only the team that turned in appeal. Individual scores will not be adjusted.
6. There will be no in-class discussion about appeals.
7. No extra marks will be awarded if the team has already been awarded the maximum marks.
8. Appeals on this form must be based on an ambiguous question i.e. your team found fault with the question.

You must, using *ONLY* the space inside the box:
1. Identify the source of ambiguity in the question and;
2. Offer an alternative wording that would have helped you to avoid the problem i.e. Re-write the question to improve it.

Team Number _____

The decision to grant or refuse an appeal will be made by the instructor after class. The decision is **final**.

Declare Ambiguity in content	Declare Ambiguity in Question
Describe source of Ambiguity	Describe reason for Disagreement

Example of Successful Appeal

Argument: "We think that for question10 option B is the correct answer and Not option D,

Evidence: "According to the information presented on page 2 section 2.1 experimental data should have at least 6 replicates and graphs should be presented with error bars".

Appeals form to submit

Session	Date and Time
Team Number:	
Question Number being Appealed:	
Argument and Evidence to Support Appeal:	

4S Team Tasks worksheet set

Application Exercise Session 1– Exercise 1

This exercise should take you approximately 15 minutes to complete; then put up your laminated letter!

Task: Which of the following is the most important reason that TBL works?

A. Students receive immediate feedback in the tRATs

B. Students work on challenging and authentic applications

C. Students are held accountable to their teams

D. Students are actively applying knowledge to solve problems

E. Students are able to challenge staff and other student teams

F. Students relate new knowledge to, and integrate it with, pre-existing knowledge (constructivist learning theory)

Team Choice

Record your rationale below (e.g. why you have chosen an option, why you have discounted the alternative options, the criteria for ranking or the points you considered when reaching a decision). For marked tasks, **usually 80% of the marks will be allocated for this rationale and 20% for your lettered answer**.

Each Team Member complete your details below:

Print Full Name	student number	Signature

You MUST complete your name & signature in the table above. To enable us to process marks more quickly and efficiently, we ask that you also include your student number if you are happy to include this information.

Staff Use Only

First Mark	Second Mark	Moderation Mark/Comment

Date:

Team name

Application Exercise Session 1– Exercise 2

This exercise should take you approximately 15 minutes to complete

Task:

You are asked to design the ideal classroom set up to facilitate Team Based learning. Work in your team to determine how would you set up / equip the classroom?

Use the flipchart paper and markers provided, When you have finished display your design on the wall.

Record your rationale below (e.g. why did you choose this class setup, why you have discounted the alternative options, the criteria for ranking or the points you considered when reaching a decision). For marked tasks, **usually 80% of the marks will be allocated for this rationale and 20% for your lettered answer**.

Each Team Member complete your details below:

Print Full Name	*student number*	*Signature*

You MUST complete your name & signature in the table above. To enable us to process marks more quickly and efficiently, we ask that you also include your student number if you are happy to include this information.

Staff Use Only

First Mark	Second Mark	Moderation Mark/Comment

Date:

Team name

This exercise should take you approximately 15-20 minutes to complete

Scenario:

1.You have been asked to join a multi-disciplinary team to design and deliver an integrated module.

2. You realise that a module you teach has crossover with another module either within you faculty or from another discipline.

Task:

Design an application exercise that meets the 4S's for a multidisciplinary group.

Use the template provided to design the task.

Record your rationale below (e.g. why you have chosen the task, why you have discounted the alternative options, the criteria for ranking or the points you considered when reaching a decision).

For marked tasks, **usually 80% of the marks will be allocated for this rationale and 20% for your lettered answer**.

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Staff Use Only

First Mark	Second Mark	Moderation Mark/Comment

Application task template

Date: [ ]   **Team #:** [ ]

Application Exercise Session xx – Exercise xx – TIME ALLOCATED EG 30MINS

Task

When deciding on an application task consider:

What is an application exercise?

Case studies

Graphs to interpret

Simulations

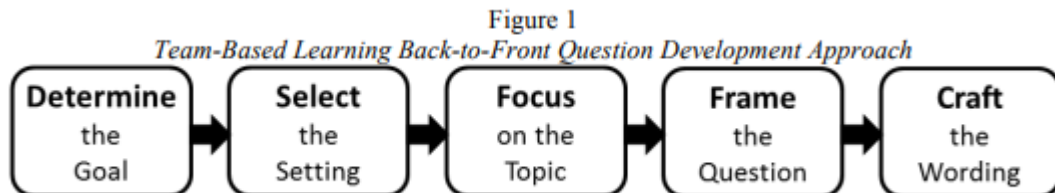Videos/podcasts/etc..

Design something etc…

Use creativity when designing or selecting application exercises

Exercise Characteristics

- Length of time available
- How many questions
- Level of study required

Composing the Questions

- Start at the end, what do you want them to be able to do at the end of this

Figure 1
Team-Based Learning Back-to-Front Question Development Approach

Determine the Goal → **Select** the Setting → **Focus** on the Topic → **Frame** the Question → **Craft** the Wording

Source: (Timmerman & Morris, 2015)

Team Choice: Name of Structure [ ]

Record your rationale below (e.g. why you have chosen an option, why you have discounted the alternative options, the criteria for ranking or the points you considered when reaching a decision). For marked tasks, **usually 80% of the marks will be allocated for this rationale and 20% for your lettered answer**.

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Reference

Timmerman, J. E., & Morris, R. F. (2015). Creation of Exercises for Team-Based Learning in Business. *International Journal of Teaching and Learning in Higher Education Machuga & Smith*, *27*(2), 280–291. http://www.isetl.org/ijtlhe/
Adapted from a facilitators guide produced by Jim Sibley