

Welcome – Team-Based Learning in practice



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This session introduces you to the way that this teaching approach is implemented in undergraduate entrepreneurship classes. This is a method that achieves a high level of student engagement in classroom activities and with the course in general.

1

Traditional teaching

Wishful Thinking:

| | | | |
|--------|-----------------|----------|------|
| Before | During | After | |
| | Active Learning | Homework | Exam |

REALITY:

| | | | |
|--------|-----------------|-------|------|
| Before | During | After | |
| | Passive Lecture | Study | Exam |

2

Components of TBL Sequence of Learning – Pre-learning

| Team Learning Phases | | |
|------------------------------------|--------------------------------|-------------------------------------------|
| Phase 1 Preparation (pre-class) | Phase 2 Readiness Assurance | Phase 3 Application of Course Concepts |
| Individual Study | Team Test | Individual Test |
| | Instructor Feedback | Team Assignments |
| | Written Team Appeals | Peer Evaluation |

3

Components of TBL Pre-Learning

Students are given material to learn before the class session:

- Academic papers
- Lecture materials
- Textbook sections
- Public videos (eg YouTube)
- Materials prepared by the instructor, such as audio files, video recordings

The nature and level of the materials depends on the learning objectives and the capabilities of the particular students

4

Preparation Phase, or Pre-Learning

Learning Objectives

➔

Learner Preparation

Classroom Assignments

➔

Learner Preparation

5

Components of TBL Sequence of Learning – classroom tests

| Team Learning Phases | | |
|------------------------------------|--------------------------------|-------------------------------------------|
| Phase 1 Preparation (pre-class) | Phase 2 Readiness Assurance | Phase 3 Application of Course Concepts |
| Individual Study | Team Test IRAT | Individual Test IRAT |
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| | Written Team Appeals | Peer Evaluation |

6

First Need to Form Teams...


- **Principle:** When forming teams, you want to ensure equal distribution of resources and maximize participation of all members
- **Making this happen:**
 - Aim to identify important resources available to individuals and equally distribute those individuals
 - The teacher forms the teams – not students
 - 5-7 individuals per team
 - These are **permanent teams**

R. Levine 7

Now, for this workshop, let's get into teams...

- Form a line, one person behind the other
- Organise yourselves in alphabetical order of the name of the major stream that you teach; eg "accounting", "economics", "entrepreneurship", "finance", "marketing", "strategy", etc, and "other"
- Within your major stream group, organise yourselves in alphabetical order of your first name or preferred name

8

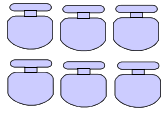


Team allocation

Now, we will give each person a number – so that we will have teams of 6

When this has been done sit in your new teams by your number

- Sit in the general locations indicated on the board
- Organise yourselves so that you are sitting in so that you can communicate easily, eg in two rows




9

Now, let's see how this works ...

Each workshop team gets a kit:

- Individual information sheets
- Coloured ABCD answer cards
- Team scratch card



1 This course uses the Team-Based Learning (TBL) teaching method. This method aims to help develop workplace learning skills. You will be required to work on significant problems that relate directly to the course, work on the same problems, and make specific choices using knowledge you then report your choices and decisions simultaneously so that you can discuss and critique by other teams. You will sit with your team during each session and contribute to team discussions and decision-making. You will be required to report your choices and decisions simultaneously so that you can discuss and critique by other teams. You will sit with your team during each session and contribute to team discussions and decision-making. You will be required to report your choices and decisions simultaneously so that you can discuss and critique by other teams. You will sit with your team during each session and contribute to team discussions and decision-making.

10

First, do the "pre-learning" ...

Students are required to do this **before** the class.

For this workshop, please read the first page only of your handout and identify the key points

- **Do not turn over the page - yet!**

Team-Based Learning: a well-developed method for engaging students in the classroom.

1 This course uses the Team-Based Learning (TBL) teaching method. This method aims to help develop workplace learning skills. You will be required to work on significant problems that relate directly to the course, work on the same problems, and make specific choices using knowledge you then report your choices and decisions simultaneously so that you can discuss and critique by other teams. You will sit with your team during each session and contribute to team discussions and decision-making. You will be required to report your choices and decisions simultaneously so that you can discuss and critique by other teams. You will sit with your team during each session and contribute to team discussions and decision-making.

11

Now we will do the individual test

In the entrepreneurship classes, we use an individual answer card.

For this workshop, we use the second page of your handout:

- **Now turn over the page**

Entrepreneurial Courses Individual Test Sheet

Complete the following details (print clearly):

| | |
|------------------------|---------------|
| Your team number | 1 |
| Your Name | Sophia Vuuk |
| Your UniSAnet Username | WVUKK001 |
| Date | 14 / 4 / 2010 |

Each question is worth 3 points. Allocate the points across the possible answers (write clearly):


| Question | A | B | C | D |
|----------|---|---|---|---|
| 1 | | | | 3 |
| 2 | | | | 3 |
| 3 | 2 | | | |
| 4 | 3 | | | |
| 5 | | 2 | | 1 |
| 6 | | 1 | 1 | |
| 7 | | | 3 | |
| 8 | | | | 3 |
| 9 | 1 | 2 | | |
| 10 | | | 3 | |
| 11 | 1 | | | 2 |

12

Now, turn over the sheet of paper

Go to "2. Answer these questions on your own"
 Mark which one of the four answer options for each question you considered to be the "best".

Do not refer back to the other side of the sheet of paper!



| | A | B | C |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 1. The following principle underlies the Team-Based Learning method: | Self-reliance | Learning content through class discussion, using the knowledge to make specific choices. | Significant learning is achieved through individual practice, self-reflection, and peer review. |
| 2. Team-based Learning involves: | Preparing to answer questions by reading and discussing the material on their own. | Learning together through discussion and team decision-making. | Preparing to answer questions by reading and discussing the material on their own. |
| 3. The focus of the test items is to: | Test team members' knowledge of the material. | Test students' ability to apply their knowledge to solve problems. | Test students' knowledge of the material. |
| 4. The instructor should be assigned to: | Monitor student progress. | Monitor student progress and facilitate discussion. | Monitor student progress and facilitate discussion. |
| 5. The Test-Bases Learning method is designed to address the following in the cognitive domain of Bloom's taxonomy: | Knowledge, comprehension, synthesis. | Knowledge, comprehension, application, analysis, evaluation. | Knowledge, comprehension, application, analysis, evaluation. |


2

3. Now answer the same questions in your "team" do not refer back to the materials on the reverse of this sheet of paper answer with your team members. You will refer to your individual answer card and not "scratch" cards. Negotiate with your team members, and then counting of the selected answer option for each question. A star indicates a 4. Compare your team responses with your instructor answers. There are different ways in which answers can be scored for the individual items. In some cases, you can directly compare your responses.

4. Discussion.

Now let's get ready for the team test ...

In the classroom all tests count for assessment – and are done under exam conditions. You have each completed the test as an individual. Now you will complete the same test as a team using the scratch card.



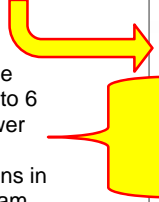
14

In your team, test the scratch card ...

This is an IF-AT scratch card

If you scratch the boxes in row 1, you will see that one box reveals a star (for the correct answer).

You will use rows 2 to 6 to answer the five questions in your team




| 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. | | | | | |

15

Now answer the same questions in your "team"

Negotiate with your team members which option to select, and scratch the corresponding box on the "scratch and win" card.

Do not refer back to the other side of the sheet of paper!




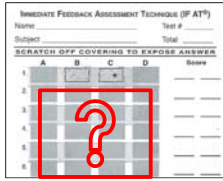
| IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF-AT®) | | | | | |
|--------------------------------------------------|--------|---|---|---|-------|
| Name | Test # | | | | |
| Subject | Total | | | | |
| SCRATCH OFF COVERING TO EXPOSE ANSWER | | | | | |
| | A | B | C | D | Score |
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |

16

Let's review your answers

As we review each question:


- One person in your team holds up a colour A, B, C, D card corresponding to your team answer.

17

How did you go?

We'll record the team scores (the number of questions correctly answered) by show of hands



18

For discussion

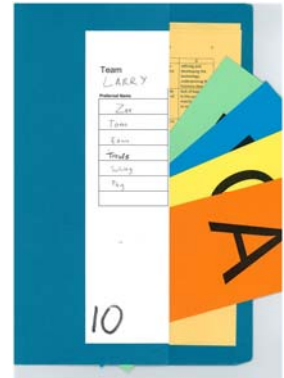
- How did your team score compare with individual scores?
- What is the purpose of the scratch card?
- How were your team dynamics?



19

So, how do these tests work to start a class?

- Each team gets a folder that includes:
- The question sheet for the session – one copy for each team member
 - An individual test sheet – one for each team member
 - ABCD display cards – for discussions at the end of the test
 - One Readiness Assessment Test appeal form



20

The individual test

Individual test forms can be designed for manual calculation of scores, or can use forms for scanning using Scantron, Zip-Scan machines, or PDA video scanners that can be used in the classroom

Entrepreneurial Courses Individual Test Sheet

Complete the following details (print clearly):

Your team number: 1

Your Name: Sophia Vuuk

Your UMS/Net/Signname: VNUUK001

Date: 14 / 4 / 2010

Each question is worth 3 points. Allocate the points across the possible answers (write clearly):

| Question | A | B | C | D |
|----------|---|---|---|---|
| 1 | | | | 3 |
| 2 | | | | 3 |
| 3 | 2 | 1 | | |
| 4 | 3 | | | |
| 5 | | 2 | | 1 |
| 6 | | 1 | 1 | 1 |
| 7 | | | | 3 |
| 8 | | | | 3 |
| 9 | 1 | 2 | | |
| 10 | | | | 3 |
| 11 | 1 | | | 2 |



The team test



IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF-AT®)

Name: [blank] Test #: 11

Subject: [blank] Total: [blank]

SCRATCH OFF COVERING TO EXPOSE ANSWER

| | A | B | C | D | Score |
|----|---|---|---|---|-------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |

Tests are carried out for assessment

This individual and team test process means that:

- There is a clear incentive for students to attend class
- There is a good reason for students to pre-learn course materials
- During the team test, each member invariably is asked to voice and defend their choice on every question
- The resulting discussions produce immediate feedback that show clearly to what degree individual students have prepared
- Students are made accountable for individual learning and for team contribution as they have to produce specific answers.

Test marks are split between individual and team marks:

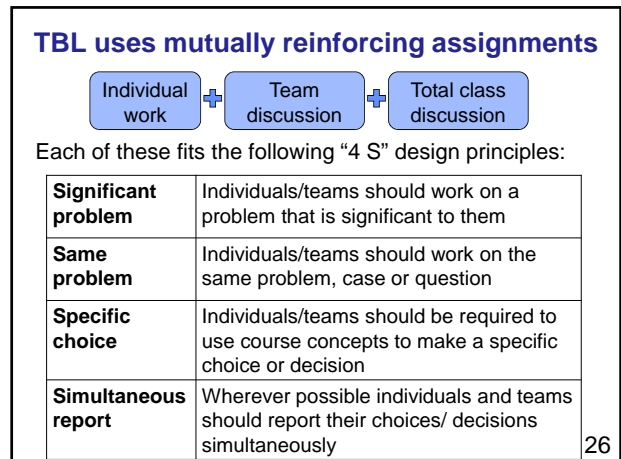
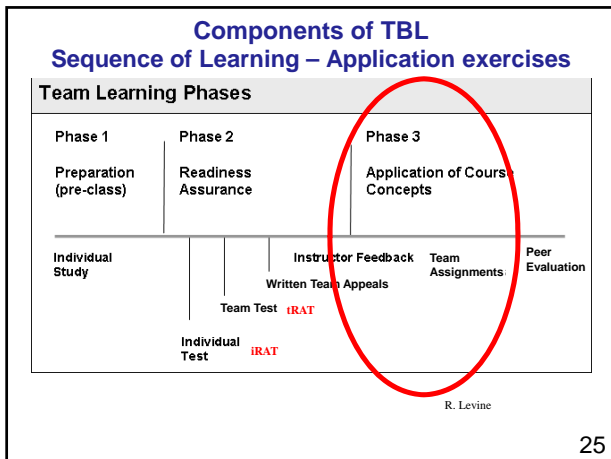
- The way in which this is done depends on the particular class.

23

Typical test results for a class

| Test | 1 | 2 | 3 | 4 | 5 |
|-------------------------|-----------|-----------|-----------|-----------|-----------|
| Maximum Points | 48 | 48 | 51 | 48 | 51 |
| Individual High | 44 | 36 | 44 | 41 | 45 |
| Low | 5 | 8 | 12 | 6 | 10 |
| Average Students | 23.5 | 23.4 | 24.5 | 28.3 | 30.2 |
| Team High | 48 | 43 | 47 | 46 | 51 |
| Low | 37 | 30 | 26 | 36 | 39 |
| Average Teams | 43.1 | 37.6 | 39.6 | 42.3 | 46.4 |
| Teams | 14 | 15 | 15 | 15 | 15 |

24



TBL exercise example

You and your colleagues must design and implement a new course: “Entrepreneurial Foundations”. This is an elective for students from across the University. This semester-long course will include practical exercises to encourage students to apply the principles and practices of enterprise and entrepreneurship.

Question: The BEST way to get students into teams will be to:

- A. do it randomly
- B. have students select which teams they want to be on
- C. organise a process to have students from a mix of study streams in each team
- D. use standardized test scores to assign students so every team has similar scores

27

TBL exercise example

Question: Most students dislike evaluating their peers in a formal way. What would be the BEST approach to Peer Feedback for this course?

- A. Omit it because the students do not value it
- B. Have the students determine its grade weight, and you provide instruction on Peer Feedback
- C. Use only qualitative Peer Feedback, no grade impact
- D. Set a 20% grade weight, instruct students on how to give feedback to peers

28

TBL exercise example

Question: Five weeks into the new course, two students from one team come to your office and ask if they could be changed to another team because one of the team members dominates the sessions and has led the team to make many wrong answers – their team score is near the bottom of the class. What would be your approach to this situation?

- A. Schedule a meeting with the team to discuss their performance
- B. Suggest that they bring up the issue with the whole team
- C. Suggest that they poll the other members of their team and if they concur, move the ‘dominating’ one to another team
- D. Suggest that they use the Peer Feedback forms at the end of the course to express their feelings

29

TBL exercise example

Question: One of your colleagues is distressed because she feels that TBL will not ‘cover’ all of the content that ‘must be covered’, and students will be upset they are not being ‘taught’ everything. What could you say that might reassure her?

- A. “We don’t cover everything now anyway!”
- B. “If we focus on what we want our students to be able to do with content, then they will master the content.”
- C. “The IRAT and GRAT test process will make sure that they cover the content they need to know.”
- D. “We can place all the ‘other’ content on the website where they can access it in their own time.”


30

Another example of a “4-S” assessment

Each entrepreneurship class works on the same business idea.

Teams submit a feasibility plan as a 2-page poster

- This allows teams to appraise other plans in a classroom “gallery walk” exercise
- Students critique plans and question other teams during a review session
- In this way, students learn from others



So, TBL Promotes idea exchange

This is done by:

- Using assignments/activities that require team interaction
- Removing barriers to participation, as team members are **forced** to interact
 - international students particularly appreciate this!
- Requiring in-class team work
- Setting up diverse teams with five or six members

32

Components of TBL

Sequence of Learning – Teamwork feedback


| Team Learning Phases | | |
|------------------------------------|--------------------------------|-----------------------------------------------------------------|
| Phase 1 Preparation (pre-class) | Phase 2 Readiness Assurance | Phase 3 Application of Course Concepts |
| Individual Study | Individual Test iRAT | Instructor Feedback Written Team Appeals Team Assignments |
| | Team Test iRAT | Peer Evaluation |

R. Levine

33

Feedback example

Software (eg “SparkPlus”) is used to allow each team member to provide anonymous feedback on team contribution to other members



So, what makes Team Based Learning work?

As you have seen, TBL engages students with course concepts in the following way:

Individual work + Small-group discussion + Total class discussion = Impact on learning

In particular, we have seen that TBL:

- Promotes ongoing accountability
- Uses mutually reinforcing assignments (4S)
- Promotes idea exchange

Michaelsen, LK, 1998 *Teaching Excellence: Toward the Best in the Academy, Vol. 9, 1997-1998*, The Professional and Organizational Development Network Essay Series POD Network, Ames, IA, 1998.

35

Research shows that TBL produces better learning outcomes

Implementation of team-based learning in pharmacy courses (with over 140 students) that used standard tests for final course assessment showed that

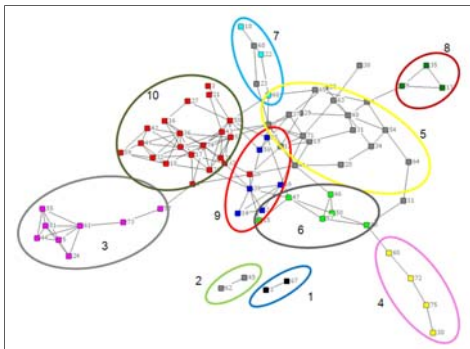
- Course grades were higher using the TBL method, compared to the traditional lecture-based method used previously
- Individual multiple-choice tests and team contribution scores significantly predicted overall course grades

Letassy, NA, Fugate, SE et al, 2008, Instructional Design and Assessment: Using Team-based Learning in an Endocrine Module Taught Across Two Campuses, *American Journal of Pharmaceutical Education*, Vol 72, No 5, pp. 1-6

36

And what do entrepreneurship students think of TBL?

Qualitative research using concept mapping analysis shows that this method engages students in specific ways:



37

This research shows that TBL engages students in the following ways:

- Encourages competition between teams
- Makes it easier to understand course content
- Encourages preparation and study
- Helps me to get to know other people
- Learn to communicate in a team and improve teamwork
- Allows us to learn from others
- Teamwork helps to improve our scores and marks
- A real world exercise
- Makes learning fun and enjoyable
- Stimulates thinking and ideas

38

Here are some educator observations ...

There are great benefits:

- Team dynamics in the class are greatly improved – there is a real buzz!
- Allows us to focus instruction on areas that we can see students have not fully understood (ABCD card session)
- Allows us to relax – we feel “liberated” from content delivery – and spend most of my time facilitating class exercises
- It’s efficient; we can teach relatively large numbers in one class
- There is a great support network through the TBLC

There are some drawbacks:

- Set-up – preparing the multiple choice question bank takes time and thought
- Administrative overhead – folders and contents to be assembled for each session, processing and communicating results
- Attention to detail, accuracy and timeliness – operations/ implementation must be impeccable for students to see this as a credible method

39

So, why do it?

It definitely improves student interaction and appears to improve team functioning

Feedback shows that students enjoy the process and are more engaged in the course

Research into TBL shows that it improves learning effectiveness

Team-Based Learning achieves the engagement in entrepreneurship courses that is strongly recommended in the literature (Gibb 2002, Biggs 2003, Jones 2007, etc)

... And it is fun!

40

Some further information

This approach was developed by Prof Larry Michaelsen (UBC, now Uni Western Missouri) over 20 years ago, and is now used in a wide range of study areas.

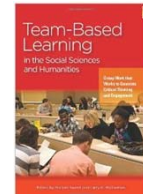
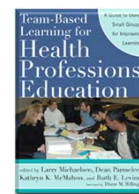
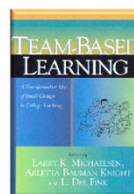
There are **very** extensive resources on the website of the Team-Based Learning Collaborative (TBLC):
<http://www.teambasedlearning.org/>

The presenters are collaborating with academics around the world to help them to introduce TBL and to improve and research teaching methods. You are welcome to contact them: peter.balan@unisa.edu.au, nahmad@aus.edu

41

There is a large quantity of resources:

<http://www.tbllcollaborative.org>



42

Team Based Learning in Entrepreneurship Classes



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Any Questions?

43

Team-Based Learning Workshop Evaluation

On the blank sheet of paper,
please score this workshop on a scale from 0 to 10

0 1 2 3 4 5 6 7 8 9 10

0 = total waste of time 10 = superb

Please:

- Write the **whole number** on your page
- Give **two reasons** for your score
- Suggest **two improvements** to this workshop

Thank you!

44



ICSB 2015 Dubai, UAE
Hosted by United Arab Emirates University (UAEU)

Another workshop from these presenters:

10.30am Today in this venue.
#30 Ensuring Student Buy-in for Pre-learning in Flipped or Team-Based Learning Classes