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Team Based Learning @ NTU

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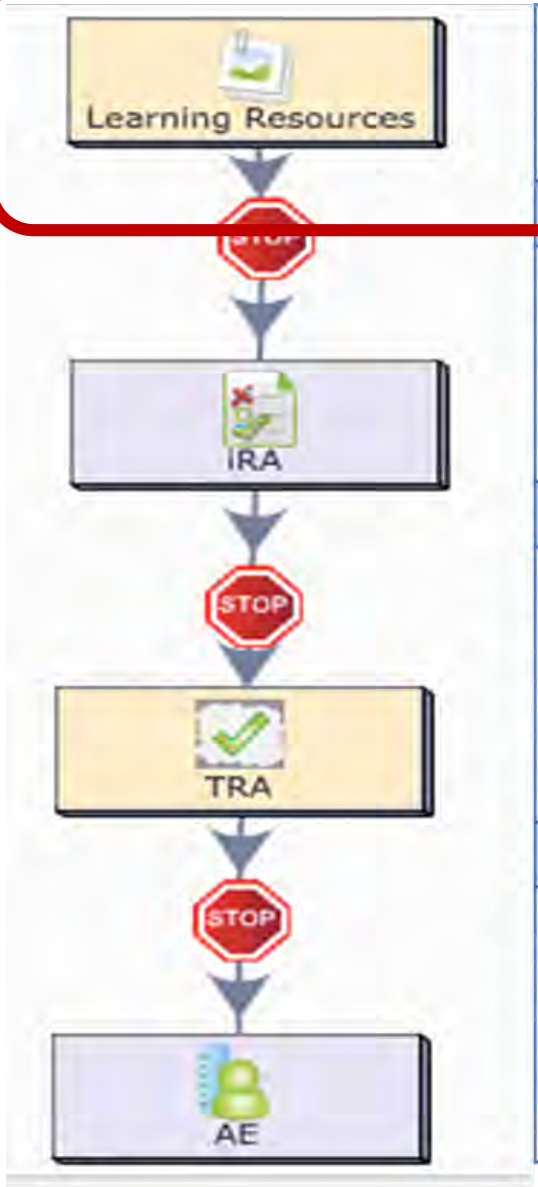
Team Based Learning in NTU

- Well-defined learning sequence that focuses on team interaction and accountability

- Preparation:
  - Professors are TBL-trained
  - Physical spaces retrofitted
  - Online systems developed
  - Devices provided

TBL Methodology (webfaced)



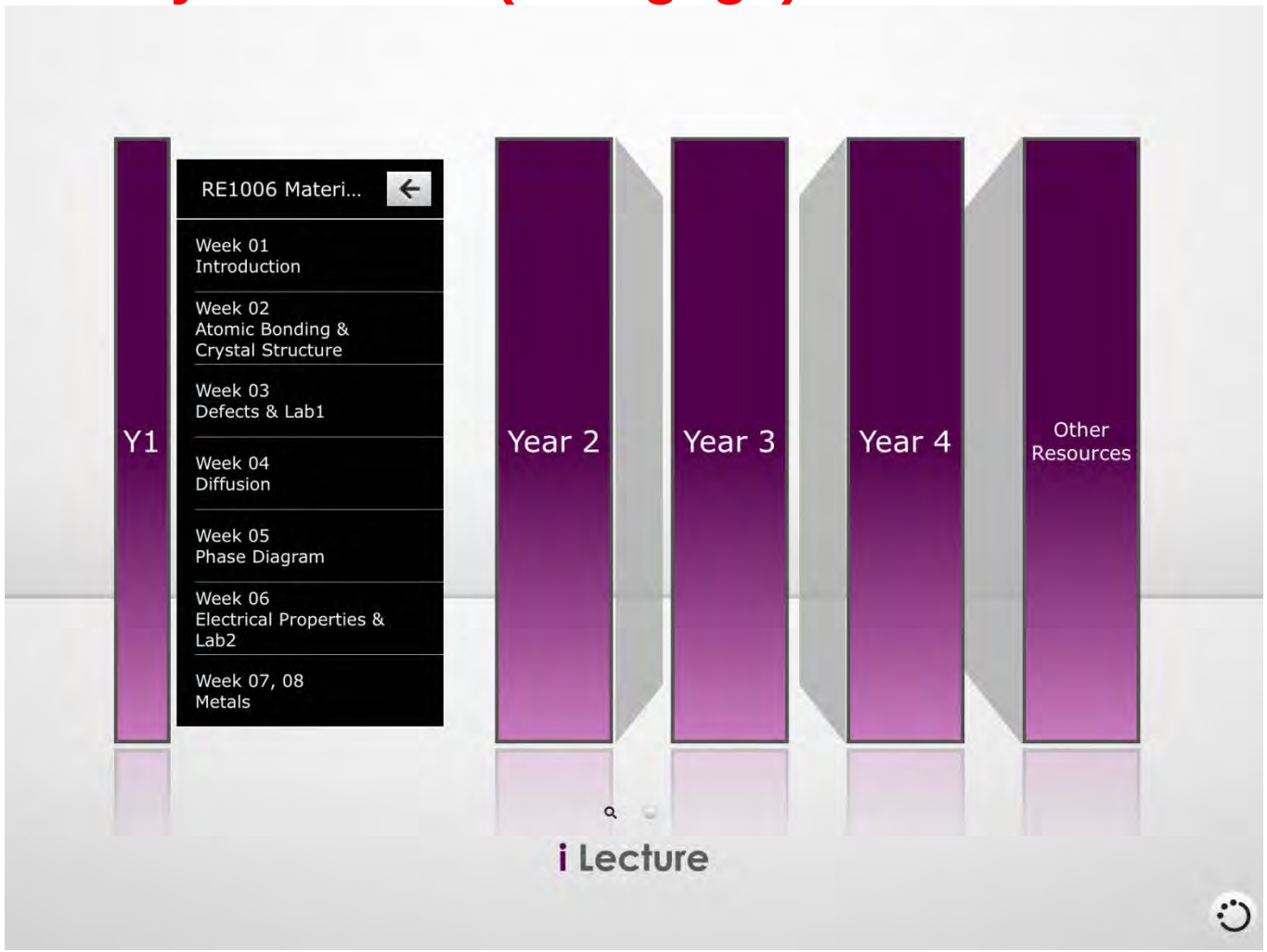
Learning Resources/Preparatory Materials are in the form of videos, slides, journals, book chapter, etc., are pushed online about 1 to 2 weeks in advance.

Individual Readiness Assurance (iRA), taken individually under exam conditions, these are usually MCQs that sample the materials broadly to assure students have gone through the preparatory materials.

Team Readiness Assurance (tRA), is a repetition of the iRA, but this time the team members are allowed to discuss (but not refer to preparatory materials) and decide on an answer together. There is immediate feedback and the teams are allowed to try again if they got the answers wrong on their earlier try.

Application Exercises (AE) are usually practical questions/problems, that dwell on deeper understanding in terms of application of the concepts It follows the 4S requirements: Significant Problem, Same Problem, Specific Choice and Simultaneous Reveal of Answers.

Preparatory Materials (in iNgage)



Course materials arranged by weekly topic

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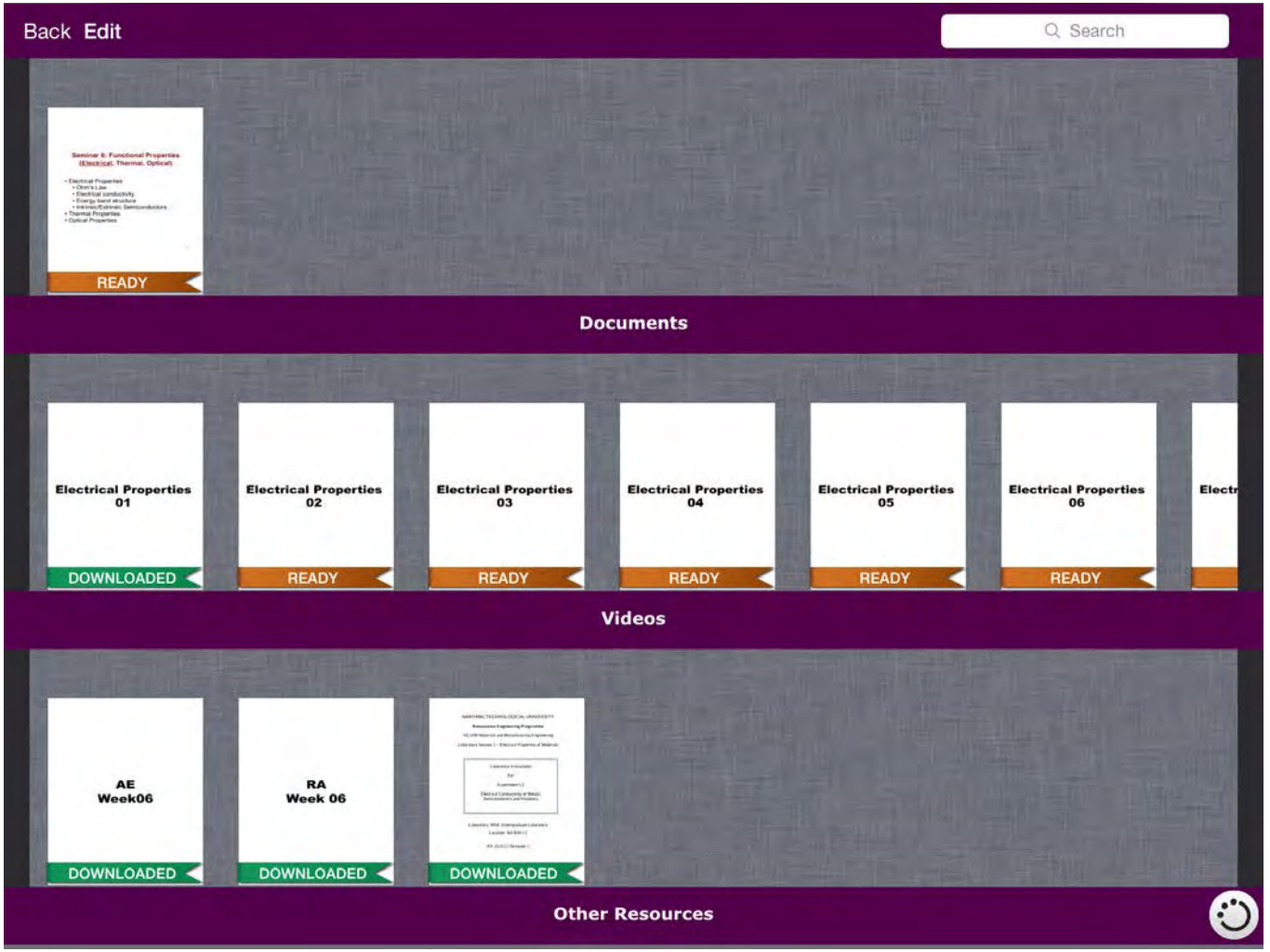
Preparatory Materials (Bb/iNgage)



Course materials include notes, video recordings &

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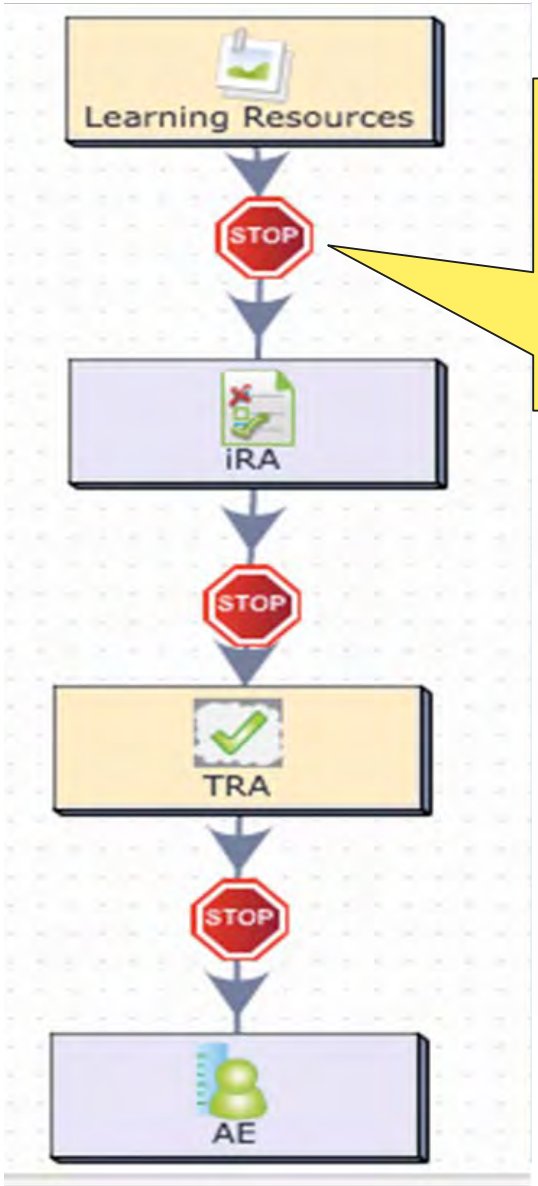
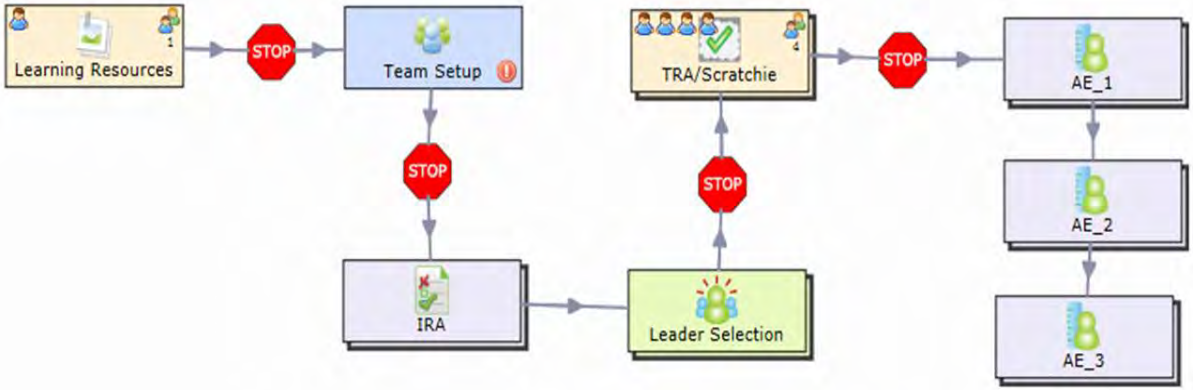
TBL Methodology



From this point, TBL is delivered F2F while all materials can be completely streamed online to the classroom thru LAMS. .



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Individual Readiness

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Team Readiness

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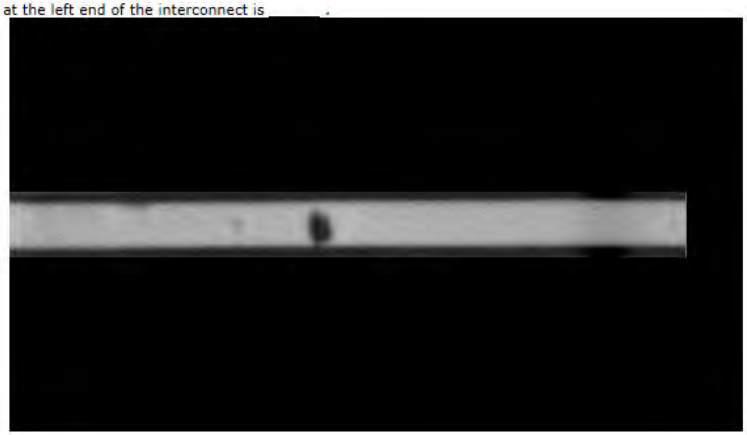
Class Activities –
Team Readiness Assurance

Question 11

In this movie (top view), the atoms are diffusing _____ and the potential at the left end of the interconnect is _____ .



A) Rightward; negative

B) Rightward; positive

C) Leftward; negative

D) Leftward; positive

- **Teams can retry until they find the correct answer – IMMEDIATE FEEDBACK.**

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Application Exercises – a set of challenging activities

- Real life, scenario or thought based
- AEs impose 4S conditions:
  - Same problem
  - Significant problem
  - Simultaneous reveal of answers
  - Specific choice

Application Exercises

What do we know so far?

These are based on university-wide scholarship of teaching and learning:

- Studying objective results
- Surveys of students
- Focus group discussions

Scholarship of TBL

Facets	Anchor questions	Method/Activity
Academic Performance	• Do the students perform better with TBL? • Do students perform better as a team than as individuals?	• **Comparisons between individual and team scores and between TBL and non-TBL courses.** • **Literature survey.**
Student / Teacher Experience	• Do the students prefer TBL over non-TBL? • What is the impact of TBL on instructors' teaching?	• ***Focused Group Discussions.*** • ***Face-to-face interviews.***
Behavioural/ Attitudinal Effect	• Do students' ability to work in teams improve through TBL? • Do students' attitudes and behaviour affect their performance on TBL?	• ***Teamwork quality survey.*** • ***Correlating intro-extroversion with performance.***
Extended Outcomes	• Can TBL deliver the required university graduate, as well as, organizational outcomes?	• ***Outcome based curriculum mapping and validation.***

** Future studies under consideration*

FGD: How do you compare this method of teaching with those of your other courses?

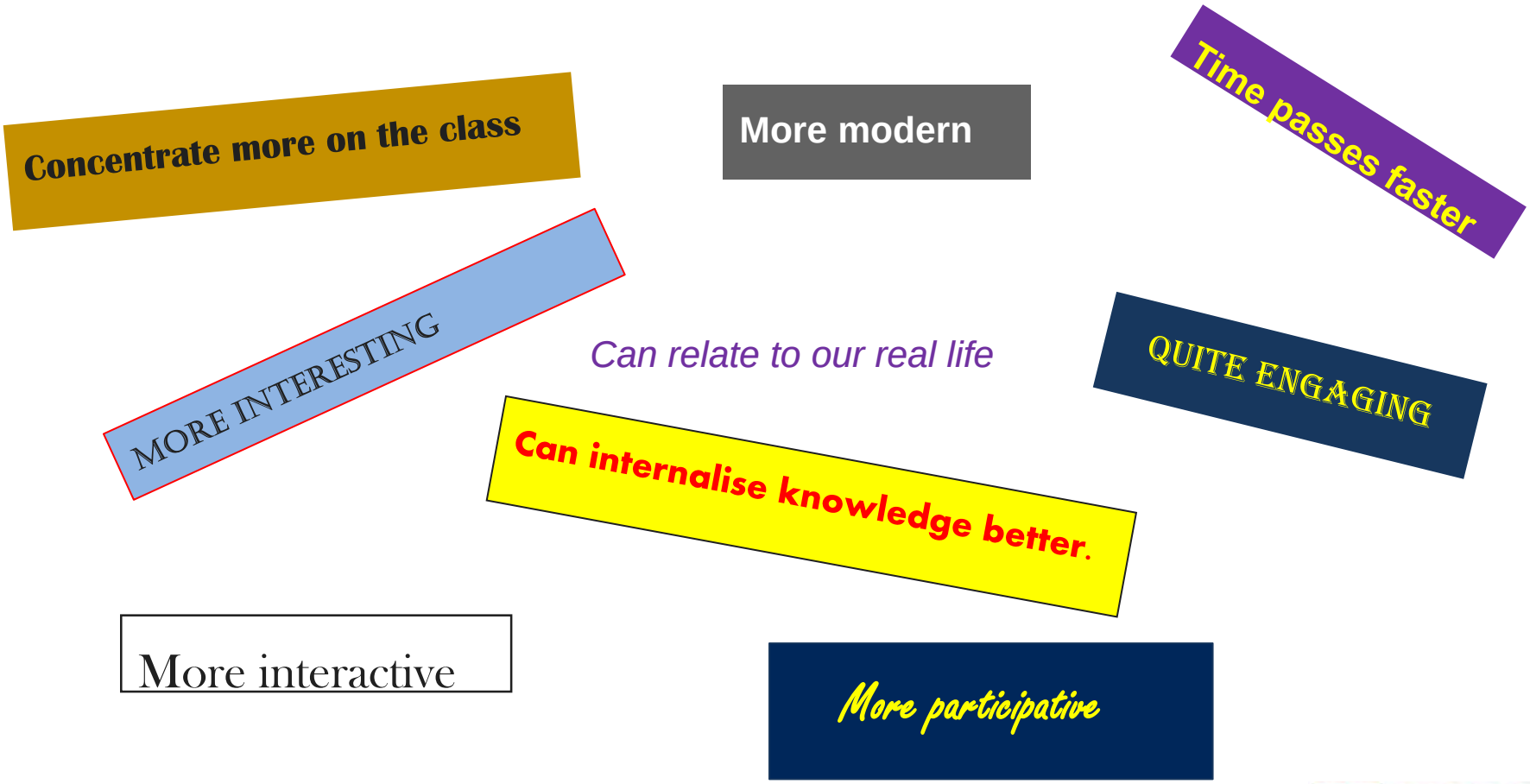
Self-directed – has **autonomy** to decide how much you want to learn.

More effective – compared with lecture, usually halfway we automatically shut down. With TBL, it is **easier to concentrate** because it is difficult to shut down.

Learning is more consistent because you have to **study regularly**.

More social – we discuss with our team in a **friendly environment**.

FGD: How do you compare this method of teaching with those of your other courses?



Student and Teacher Perception

	Generally Positive Comments	Concerns
Students	• **Very engaging** - Always focused on the discussion • **Discussions help us learn more** - Diverse point of view is better • Learning more important than scoring • More fulfilling - Can contribute to the group	• **Too much material** - Too many assessments - Must come prepared unlike in lectures • Need the instructor to confirm our answers - Cannot trust another student's answer beforehand unlike lectures
Teachers	• **Students come better prepared** • Can tackle more complex problems at the outset • Conscious planning in the curriculum and learning activities.	• **Masking occurs in teams,** • Students still rely on teachers • A lot more work than anticipated in the shift from non-TBL to TBL.

Results: Behavioural/Attitudinal Effects

TEAMWORK QUALITY SURVEY [Week 3 vs Week 15]	
Communication	**Value Diversity**
Mutual Support	**Expertise**
Cohesion	**Team Performance**
Trust	**Overall**

BLUE – Significant difference **RED** – No significant difference

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Other Benefits of TBL

- Improves academic performance of a academically diverse but not of the academically advanced class
- Harness life skills:
  - Leadership - Teamwork
  - Negotiation - Influencing others