An introduction to Team Based Learning
TRANSFORM YOUR CLASSROOM INTO A PLACE OF EXCITEMENT
Executive Summary

This resource will give you an overview of what Team Based Learning (TBL) is, its origins and how it works.

It will also outline the structure of a TBL module and describe in detail each component:

1. **Individual pre-class work** – preparatory material for students to study before class.
2. **Individual Readiness Assurance Test (IRAT)** – a short multiple-choice quiz completed individually by students.
3. **Team Readiness Assurance Test (TRAT)** – the same quiz students now retake in teams of 5-7 members.
4. **Appeals** – a chance for students to defend their team’s answer (in writing) if they feel a question was scored incorrectly.
5. **Clarification Session** – an opportunity to review and discuss the more challenging concepts with your class.
6. **Focused Application Tasks (FATs)** – more complex problem-solving activities completed by students in the same teams as before.

The last section will list some of the advantages of TBL for the different stakeholders involved:

- **For students:** Developing teamwork skills, better preparation for the workplace, increased engagement etc.
- **For teaching staff:** The ability to continuously monitor student progress, easily determine which topics your students are struggling with, a more rewarding teaching experience etc.
- **For administrators:** The ability to use TBL in large-class settings, using online technologies to save time and gather detailed analytics etc.

Whilst looking over this resource, please keep in mind that this is only a suggested guide. The TBL method can be adapted as needed to suit your unit.
What is Team Based Learning?

Team Based Learning (TBL) is an active teaching and learning method which centres around students applying their knowledge to real-world problems.

Through an organized structure that encompasses both individual and group work, it equips students with the necessary skills to prepare them for their future careers.

This teaching and learning strategy adopts the “flipped classroom” approach, where students individually learn assigned content before class, and are then given the opportunity to apply this knowledge in class through group activities.

As an educator, your role in the classroom shifts from delivering a lecture to facilitating discussions between teams of students.

An old method, reinvented with new technologies.

TBL first started back in the late 1970s with Dr Larry Michaelsen, a professor at the University of Oklahoma’s Business School. When his class sizes tripled from 40 to 120, Dr Michaelsen developed TBL to encourage students to become more engaged in their learning.

Since then, TBL has been adopted by a number of educational institutions worldwide (Kamei, R.K. et al., 2012; Fatmi, M. et al., 2013).

Today, new technologies – including software specifically designed for administering TBL – streamline some of the steps involved in conducting a TBL module, as well as displaying student results both in real time and tracked over a period of time. With this information right at your fingertips, you’re able to better understand your students and focus your attention on the more challenging topics that need further explanation to the class.
How does TBL work?

1. **INDIVIDUAL PRE-CLASS WORK**

   Individual work is done by students before they even step foot inside the classroom. You can assign readings, presentation slides, pre-recorded video lectures or any other material that your students can review to prepare for their TBL lesson.

2. **INDIVIDUAL READINESS ASSURANCE TEST (IRAT)**

   At the beginning of class, students are quizzed on the preparatory material studied before class. This takes the form of an online multiple-choice test comprising of 10-15 questions.

   You can choose to make this quiz *certainty-based*, so that depending on how confident students are with their choice, they can assign all their points to one answer; or, if they are undecided, split their points up between multiple answers. This gives you an insight into the risk-taking behaviours of students and how these behaviours may be changing throughout the session.
The IRAT holds students accountable for their preparation outside of the classroom, and ensures they have the foundational knowledge needed to solve the more complex questions later on in the lesson. It also gives you an idea of which concepts are well understood by your students, and which concepts require further explanation.

3. **TEAM READINESS ASSURANCE TEST (TRAT)**

Once the IRAT is complete, the class is split into smaller groups of 5-7 students. The students re-take the exact same test, but this time are required to work together as a team to choose the correct answer. They will remain in the same team throughout the session.

*Immediate feedback* can be implemented for these quizzes. This means that when a team answers a TRAT question, they will know straight away whether or not their answer was correct. If they choose the wrong answer, they will have to re-attempt the question until they answer it correctly, earning less points for each subsequent attempt.

4. **APPEALS**

If a team feels that a question was scored incorrectly or poorly worded, they can submit a written appeal to argue why they believe their answer is correct. This must be done as a team – not individually – and students must supply written evidence to back up their claim.

The appeals process encourages students to review the preparatory material and further clarify their understanding on the more difficult concepts covered.

5. **CLARIFICATION SESSION**

The last part of the readiness-assurance process is a clarification session where you can review and discuss with your class some of the more challenging concepts covered.

The IRAT and TRAT results should give you a good indication of which topics your students still have some confusion about. You can see this step as being a form of ‘mini lecture’ where you can really focus on these challenging topics. This ensures that all your students are up to speed with the key concepts and have the fundamental knowledge needed for the more complex problem-solving activities that follow.

You may also choose to have teams who understood the concepts explain them to teams having a bit more difficulty and act as a facilitator for this discussion. This is a great way for the whole class to become more active in the learning and teaching process.

Teams struggling with a topic can benefit from having the concept clarified by their peers who have undergone the same learning process as them, and teams who already have a good grasp on the material can further solidify their understanding by communicating their knowledge to other classmates.
6. **FOCUSED APPLICATION TASK (FAT)**

The second part of the TBL process involves more complex problem-solving activities where students put into practice the knowledge they have acquired. These are completed in the same teams as before and should take up the majority of class time.

The activities should be characterised by the 4 S’s:

- **Significant Problem**
  - The problem presented must be significant to the students – i.e., relevant to their future careers. This is crucial in ensuring the students are actively engaged and motivated to participate in the discussion.

- **Specific Choice**
  - The problem should require a specific answer, or “specific choice”, rather than being an open-ended question. This gives students the opportunity to compare their answers with one another and inspires a healthy debate between teams.

- **Same Problem**
  - All teams must be given the same problem. This allows the entire class to participate in the same debate, rather than passively waiting for their issue to be discussed.

- **Simultaneous Report**
  - Teams are required to report their answers at the same time – for example, by holding up a card to the class with their choice written on it. This holds students accountable for their choice and encourages teams to both challenge each other’s answers and defend their own.

Once teams have revealed their specific choice to the rest of the class, you can facilitate an inter-team debate, where students compare – and sometimes vote for and rank – the different solutions suggested.
What are the advantages of TBL?

**For students:**

Students develop teamwork, critical thinking & problem-solving skills.

TBL prepares students for the workplace.

- Students are given the opportunity to apply their knowledge to real-world problems and case studies. This immediately puts into context the information they have learnt, and better equips them for using this knowledge outside of the classroom.
- With TBL, students are required to work as part of an allocated team to solve problems under time-pressure. This reflects many real-life working environments – meetings, for example – and is great practice for the workplace.

Students learn about the value of teamwork.

- In most cases, the worst performing team still scores higher than the best individual student in the class (Michaelsen, L.K. et al., 1989).
- After making individual attempts at multiple-choice questions, percentage scores have been found to increase when students re-address these questions as a team (Conroy, J. et al., 2012).
- Allowing your students to compare their results as individuals vs. teams, as well as giving them time to reflect on their peers’ contributions over time, will help them appreciate the value of teamwork (Michaelsen, L.K. & Sweet, M., 2008).

Students learn about their strengths and weaknesses as team members.

- Through peer evaluations, students can find out what they’re doing right, and what they can improve on.
- As TBL is built around group work, students can gain a thorough understanding of how their fellow team members interact and work with one another, as well as developing strong interpersonal relationships. This is likely to lead to more accurate and honest feedback during peer evaluations (Michaelsen, L.K. & Sweet, M., 2008).

TBL’s immediate feedback approach is beneficial to student learning and team dynamics.

- In most units, students are only provided feedback intermittently throughout a session – i.e. when assignments or exams are graded. With TBL, students are given constant, immediate feedback with every group quiz they complete.
- Feedback facilitates content learning and retention (Michaelsen, L.K. & Sweet, M., 2008). Immediate feedback also improves team dynamics (O’Dwyer, B., 2017). In traditional group activities, a more vocal student may have a larger influence on a team’s chosen answer, whilst a quieter student may lack the confidence to defend their choice. However, with immediate feedback, team members know straight away which answer was in fact correct and learn to equally value every member’s contributions.

TBL’s incentive structure encourages student engagement.

- When TBL is properly implemented, students are held accountable for both their individual and team efforts.
- Individual accountability gives students an incentive to “do their homework” outside of class, ensuring they are well prepared for class tests and activities. Students will likely be more engaged if they’re up to speed with what’s going on.
- Group accountability and peer evaluation motivates students to make valuable contributions within their team.

TBL is fun!

- Through team tests and problem-solving activities, TBL fosters friendly competitiveness in the classroom.
- Individual and group accountability ensures students are better prepared and more engaged, which makes class discussions more enjoyable for everyone.
**For teaching staff:**

Using online technologies to run TBL, you're able to see student results in real time.
- This will allow you to see straight away which concepts are well understood by students and which ones require further clarification. This way you're able to focus your attention on the topics that matter.
- Immediate and constant feedback also allows you to continuously monitor how your students are progressing throughout the session – not just when assignments or exams are marked.

Teaching well-prepared students is a more rewarding experience.
- Due to individual and group accountably, TBL students are more likely to be prepared for class and stay up to date with course content. This way, you're able to facilitate informed discussions with your class, rather than spending hours “spoon-feeding” content.
- With TBL, students also become more active in the learning and teaching process. You'll spend most of your time facilitating discussions, rather than presenting lecture slides. This will lead to more personally rewarding relationships with your students (Michaelsen, L.K. & Sweet, M., 2008).

Staff and students alike work as a team.
- To successfully implement TBL, you are encouraged to co-ordinate with other unit directors to ensure students are given manageable workloads outside of class. It is also recommended that you seek feedback on your TBL module from a knowledgeable peer before the first class (Levine, R. & Hudes, P., 2014).
- In instances like these, teaching staff work together as a team to deliver successful educational programs, not only enhancing the quality of their units but acting as role models for how students should be working (Conroy, J. et al., 2012).

**For administrators:**

TBL works in large-class settings and is cost-effective.
- In traditional courses, large class sizes may seem like an obstacle to student learning and class engagement. With TBL however, many students see a large class size as being beneficial to their learning (Michaelsen, L.K., Knight, A. & Fink, L.D., 2002).
- Large class sizes make TBL a cost-effective method. The whole cohort can learn simultaneously in the same room whilst still being active participants, eliminating the need to book multiple rooms to run numerous classes.

TBL saves time and resources.
- Whilst it takes some initial effort to design a TBL module – or to convert an existing module over to TBL – it can save time in the long run.
- Using online technologies streamlines the entire process - from tracking individual student results throughout the session to an automatic grading process, saving time on marking.
- Immediate and continuous feedback means teaching staff don’t waste their time figuring out which topics students need more clarification on – the information is right at their fingertips.
- The nature of TBL encourages all students to become team players and contribute to group activities, reducing the potential for hostilities within teams which may need staff intervention (Michaelsen, L.K. & Sweet, M., 2008).
- In some cases, TBL students have achieved the same results – if not higher – than non-TBL students in less curricular time (Conroy, J. et al., 2012).

The data collected from TBL can help optimise learning outcomes.
- Using online technologies provides teaching staff and administrators with analytics on how students and teams are performing throughout the session.
- This data can be used to measure the success of the unit, as well as figuring out how the unit can be improved in future sessions to ensure learning outcomes are being met by students.


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