Team-Based Learning (TBL)

What is it?

TBL capitalises on some aspects of the flipped classroom. Students are invited to prepare in advance for a large or small face-to-face class, which is organised to support collaborative learning in teams. The term TBL is sometimes used erroneously, related simply to working as part of a team. However, TBL has a specific methodology, as outlined below. Originally developed within business education, it has been heavily used in medicine but can be used in any discipline that requires collaborative discussion and problem-solving.

How does it work?

Like most forms of active learning that incorporate a flipped classroom approach, TBL requires students to have done some individual preparation before working collaboratively in the classroom. According to Michaelsen and Sweet (2011), the four key elements of TBL are as follows:

1. Strategically formed, permanent teams – the teacher puts students into small groups and students remain in their groups for the rest of the course (usually a semester). Parmelee et al (2012) note that the group size should be 5-7 students, who are fully accountable to their team; however, Reimschisel et al. (2017) note that most published studies include groups of 5-6 students.
2. Readiness assurance – after completing the pre-session work, students test their 'readiness' for learning through an individual readiness assurance test and then a team readiness test, whereby the members of the team discuss their answers and agree on their preferred answer. A scratch card can be used to enable the team members to scratch off their preferred answer, getting immediate feedback, until they get the correct answer. As they scratch off more answers, their score for that question will half. The readiness tests can be used purely formatively, or summative marks can be derived from the individual and/or team tests. The lecturer then presents a short lecture to clarify any misconceptions. (Later on, student groups can provide a written appeal if they feel one of their team answers was erroneously marked as incorrect.)
3. Application tasks – In teams, working in tandem, students are assigned authentic problems to solve, choosing a single pre-identified solution; they then report their agreed answer to the class at one time (usually by a multiple-choice letter), leading to a class discussion of potential solutions. The problem should be significant, lead to a specific choice, the same for all the groups, who simultaneously report their answer (the principle of 4-S).
4. Peer evaluation – students provide feedback to each other on their contributions to the tasks, which helps improve their collaborative learning skills.

A TBL facilitator oversees the process, accompanying the subject expert(s) in the room (Rajalingam et al., 2018), or an instructor can facilitate and be the content expert at the same time (Thompson et al. 2007 citing Michaelsen, Knight and Fink 2002).

Does it work?

One of the champions for TBL is Simon Tweddell from the University of Bradford, who presented evidence at the Active Collaborative Learning 2019 conference (report in preparation). Large scale adoption of TBL across the university led to higher attainment and higher level of progression, while

most attainment gaps were reduced, and student attendance in TBL modules was higher. Students were initially sceptical but demonstrated high engagement and satisfaction with TBL, and 92% of staff new to TBL planned to use it again.

A systematic review of 118 articles by Reimschisel et al. (2017) reported that there was strong evidence of TBL leading to increased student enjoyment, participation and deep learning; however there were 'a handful' of studies that were less positive in terms of learner experience. In terms of learning outcomes, there was strong evidence for TBL leading to increased performance in course assessments, with academically weaker students in particular benefiting from the switch to TBL.

What do I need?

Any active learning classroom with furniture that supports groupwork may be used, what Rajalingham et al. (2018) refer to as 'team-centric learning spaces'; circular tables (as used by the SCALE-UP method) can be used, or any shape of table (rectangular or plectrum), as long as it encourages several students to engage in discussion and problem-solving. If teams are to share their answers with the wider class, microphones can be helpful, and are essential in larger classes.

You will also need paper or scratch cards (IF-AT cards) for the individual and team readiness tests respectively, or you can use electronic voting software (such as YACRS or Echo360 Active Learning Platform) to record the students' answers; the latter makes summative marking administratively easier, particularly for the individual tests. Such a system also allows student teams to ask 'burning questions' (Rajalingam et al., 2018).

Commented [CG1]: You can also use the electronic scratchcard that I developed at Keele University - it's free to use: https://tbl.cgottardi.com

Like SCALE-UP, TBL requires a constructive alignment ('backward design') approach to course design. Staff in Academic and Digital Development (in LEADS) can help you redesign your course for TBL. As with all collaborative learning methods, it is worth inducting your students into learning in this way. Factors for success include a wide adoption of TBL across courses, rather than atomistic use as an add-on to traditional teaching, as well as the need for time for staff and students to become familiar with this method (Thompson et al., 2007).

Links

This video of TBL at Nanyang Technological University by Dr Preman Rajalingham demonstrates how TBL works in practice; watch the whole of Dr Rajalingham's keynote address at the 2019 UofG L&T conference or jump straight to the part of the keynote on TBL.

The Team-Based Learning Collaborative provides an introduction to TBL and advice on getting started, as well as links to relevant books and journal articles. The site also acts as a community of practice for TBL practitioners.

References

Michaelsen, L. K., & Sweet, M. (2011). Team-based learning. *New Directions for Teaching and Learning, 2011*(128), 41-51. doi:10.1002/tl.467

Parmelee, D., Michaelsen, L. K., Cook, S., & Hudes, P. D. (2012). Team-based learning: A practical guide: AMEE Guide No. 65. *Medical Teacher, 34*(5), e275-e287. doi:10.3109/0142159X.2012.651179

Rajalingam, P., Rotgans, J. I., Zary, N., Ferenczi, M. A., Gagnon, P., & Low-Beer, N. (2018). Implementation of team-based learning on a large scale: Three factors to keep in mind*. *Medical Teacher, 40*(6), 582-588. doi:10.1080/0142159X.2018.1451630

Reimschisel, T., Herring, A. L., Huang, J., & Minor, T. J. (2017). A systematic review of the published literature on team-based learning in health professions education. *Medical Teacher, 39*(12), 1227-1237. doi:10.1080/0142159X.2017.1340636

Thompson, B. M., Schneider, V. F., Haidet, P., Levine, R. E., McMahon, K. K., Perkowski, L. C., & Richards, B. F. (2007). Team-based learning at ten medical schools: two years later. *Medical Education, 41*(3), 250-257. doi:10.1111/j.1365-2929.2006.02684.x