Team-based Learning - An Orientation Guide for Students

Welcome!

This guide will provide you, as a student, an introduction to team-based learning.

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Introduction

You might be wondering why your class is structured this way. Hopefully by the time you are done reading this student orientation guide, you will have good insight into the benefits of team-based learning (TBL).

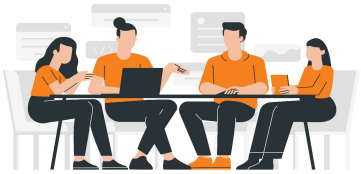
Contained within, we will give you a brief introduction to TBL, how TBL works, and how TBL will enhance your overall learning experience. Dabbled throughout is a bit of science and also real world classroom data to help you see why TBL is such a great learning tool.

The biggest thing to know about TBL is that **you will be very active and hand-ons with course content.**

The essence of TBL is captured in the words of Aristotle:

> "For the things we have to learn before we can do them, we learn by doing them."

What is team-based learning?



Individuals and teams engage in deep and complex problem-solving

Better prepared for the workforce

Team-based learning, a collaborative learning strategy, was developed in the 1970s by Dr. Larry Michaelsen who was a Professor of Organizational Psychology. With TBL, he devised a new way to continually engage you - the learner - and your teammates in **deep and complex problem-solving that promotes the application of course content** while also making sure individuals and teams are prepared for this work. In short, you and your team will literally **use and apply what you are learning to real world stuff** versus simply memorizing and recalling the information.

TBL makes teamwork the primary face-to-face or web-based activity. TBL then uses a particular sequence of steps, or procedures, to transform groups into **high-performance learning teams** *(note: the sequence will be introduced later on in the orientation guide)*. Because TBL is structured where students are continually engaged in learning with their team, and avoids typical issues with group work (e.g., not doing your fair share of the work, splitting up work to avoid interaction), TBL not only forms cohesive teams over time but **cultivates engaged and active learners**.

How is team-based learning different from traditional lecture classroom?

Team-based learning

VS

Traditional lecture classroom

This is not a classroom where you will sit and listen to your instructor for the majority of class time. TBL is one kind of "flipped classroom" so that **lectures are kept to a minimum** and most of your class time will be used doing **creative, complex, and fun problem-solving applications** with your team. Again, the goal is for you to learn how to use the course material so you can then take those skills and knowledge out into the real world.

Bonus! Compared to other classroom formats (e.g., lecture-based courses), research has shown that **student learning and academic performance improves** with active learning methods, including TBL, and also **increases students' level of engagement in class and with course content**.[1]

[1]See, for example, Deslauriers, McCarty, Miller, Callaghan, & Kestin, 2019; Espey, 2018; Kesterson, Lai, Ahamed, & Selim, 2021; Liu & Beaujean, 2017; Rajati, Scharifirad, Babakhani, & Mohebi, 2018; Swanson, McCulley, Osman, Lewis, & Solis, 2019

Why do you need to work in teams?

You might be asking why you need to work in a team. We will give you a few reasons.

1

Permanent teams provides ample time for team members to develop cohesion and build trust for one another, thus more active discussions can occur.

In other class formats, you may occasionally form groups. These groups may or may not be with the same students. TBL is different from other formats because **teams are permanent**. Why you might ask? Science! It can take anywhere from 4-6 months to become a high powered team.[2]

Hence, when learning happens in a semester-system or quarter-system, it is imperative that teams are permanent during that time frame. This way you have ample time to get to know your teammates, **develop cohesion**, and **build trust** (super important!), which **allows disagreements to occur** and **differing points of view to emerge**.

It is through **active learning** with your team members, which includes collaboration, discussion, and problem-solving, that the magic happens - you learn together and **what you learn is being reinforced through teamwork**![3]

2

Working in teams allows you to develop soft skills that are useful in the workforce.

TBL provides a great opportunity for you to continually practice your **interpersonal skills**. This will be particularly **useful in the workforce** as employers increasingly want employees with a strong set of "soft skills," such as teamwork, communication, conflict management and negotiation, creativity and agility, and ethical decision-making. A strong knowledge-base in your field is a good starting point, but soft skills will **increase your marketability**[4].

In short, having well developed "soft skills" becomes an additional asset on the job market. You can use your TBL experience to talk about these skills to your prospective employers. You could even add on your resume, "Actively participated as a student in a team-based learning course."

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[2]Rutter, 2021
[3]See, for example, Espey, 2018; Kamei, 2021; Leupen, Kephart, & Hodges, 2020; Repice, Sawyer, Hogrebe, Brown, Luesse, Gealy, & Frey, 2016
[4]Succi & Canovi, 2020; Succi, 2019

What is the team-based learning process?

The TBL process consists of **three main components**, which will repeat for each unit or module of the course.[5] TBL also includes you **assessing and evaluating your teammates' contributions** to your team, typically a few times a semester.

Each component will be described briefly below.

1 Outside Preparation

For each unit/module of course content, you will need to **prepare outside of class**. Think of this as learning the basics outside of class so you can come to class and then do creative things with those basics.

Outside preparation may consist of reading (e.g., textbook, journal articles, websites) or watching (e.g., videos) course content so that you can learn about the **key concepts and main ideas** you will be applying in class.

2 Readiness Assurance Process

The **readiness assurance process (RAP)** is an initial "check" to see if you mastered the basics outside of class. Think of it as akin to a pre-unit/module quiz. It **consists of multiple-choice questions** (typically 20 or less questions).

You will first take this individually. You will then take the same exact RAP with your team. Here, you have multiple brains to collaborate and discuss to answer the questions.

After these two parts wrap up, traditionally your team will have an opportunity to appeal questions. For example, your team may have a strong argument, based on course content, that your team's answer is more appropriate compared to the answer chosen by your instructor.

[5] Terminology may vary. Some instructors will use "unit" of material while others will use "module" of material.

How should you prepare for the RAP?

Research does give us a few pointers here:[6]

- **Space out your reading** and **test yourself** in between rereading.
- Do not mark up the text on the first read. Mark important information **the next time**.
- Review your notes **prior** to the RAP.
- Create a **skeleton outline** and **identify main points** within the sections. Remember, not everything in the reading is important.
- If using flashcards, be able to recall the information correctly (say it out loud) at least **three times** before removing the flashcard from the pile.

How much time should you spend preparing?

Each student is unique so the amount of time you will need to prepare for each RAP will vary. Generally, and for TBL classes, **time management** is a very helpful skill for you to develop and has been shown to be a predictor of academic performance.[7]

If available at your institution, we encourage you to **attend a workshop or seminar on time management** to help you organize and prioritize your course work in relation to other aspects of your life (e.g., jobs, family, friends).

In the meantime, here are a few tips:

- Make a "**to do list**". For TBL, what do you need to read and/or watch to prepare? Are you making flashcards, a skeleton outline, taking notes?
- **Organize** your to do list. Ask yourself, which tasks are more time sensitive and which tasks can wait a little bit?
- Estimate the amount of time to accomplish each task. Note, we are very good at *underestimating* how much time we need. Hence, try to **break up prep work** in order to give yourself time to learn the basics. This strategy should also help to reduce your stress and anxiety versus waiting until the last minute to prepare.
- The biggest thing is **discipline**. We are pulled in many directions so give yourself some goals. For example: (a) My RAP reading will be done on Monday; (b) My notes and flashcards will be done by Wednesday; (c) I will study for 30 minutes on Thursday and Friday; and (d) I will review my notes Monday morning prior to the RAP.

After the RAP, your instructor may give a "**mini-lecture**" to clarify any course content that seemed problematic or unclear during the RAP.

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[6] Miyatsu, Nguyen, & McDaniel, 2018

[7] See, for example, Rashid, Sharif, Khn, & Malik, 2020; Yilmaz, Yoncalik, & Bektas, 2006

3 Applications

The remaining time in the unit/module is spent **applying material in creative ways** with your team. Here you and your team get to use those basics and apply them to real world problems. Applications will be what you and your team are working on for the majority of time spent in each unit/module.

4 Peer Evaluation

As part of TBL, you will be asked to **evaluate the contribution** of your team members.

Why? Peer evaluations of your teammates are an important component of the TBL process, because all team members are responsible for the success of their team. The most successful teams collaborate and have engaged team members.

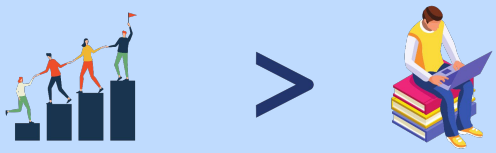
Peer evaluations therefore help to **ensure team accountability**. Additionally, this is practice to work on your skills to learn how to give constructive feedback (*nudge*: another thing that will be valuable in the workforce).

What if I have concerns about taking a team-based learning course and how will it affect my course grade?

Working in a permanent team may be new to you as well as some part of your grade coming from teamwork. So, you may sit in class on the first day and wonder how TBL might influence your own academic performance, which is natural and okay.

You might also have concerns about potentially having a teammate who does not do their fair share of the work. Recall, the powerful tool of **peer evaluations**!

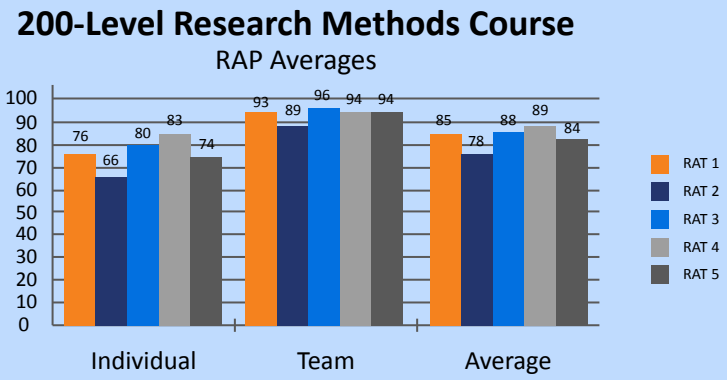
Here we tell you about some research on academic performance and also show you some real world classroom data which may help alleviate this concern.

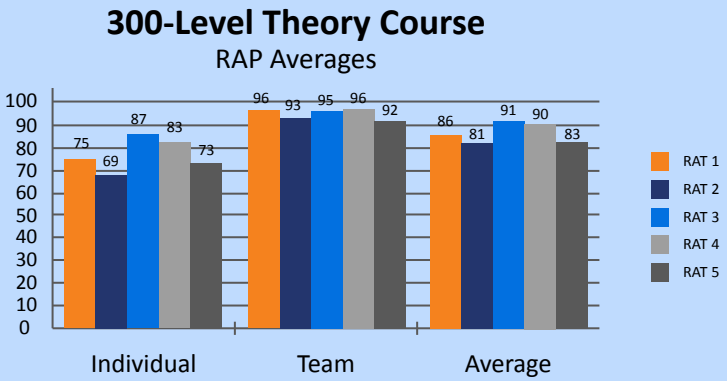


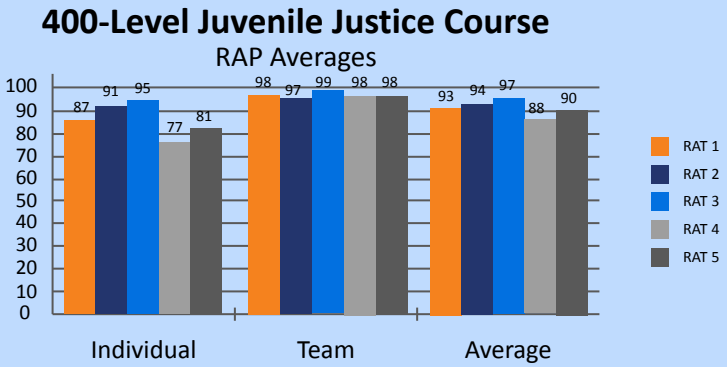
- Research has shown that in TBL classrooms, the **team actually outperforms individual team members**. Moreover, **teams have been shown to outperform even the highest scoring student in the class**.[8]

[8] See, for example, Michaelsen & Sweet, 2008; Najdanovic-Visak, 2017; Park, Kim, Park, & Park, 2015; Rania, Rebora, & Migliorini, 2015

- Here is an illustration using some real classroom data. The following bar charts show you the **average score** for the individual RAP, the team RAP and the overall class average. *(Note: Data is at aggregate classroom level to protect student identity.)*







Here is a condensed version of the data:

	200-Level Research Methods Course	300-Level Theory Course	400-Level Juvenile Justice Course
Individual Average	76%	77%	86%
Team Average	93%	94%	98%

As you can see, the **team averages are consistently higher** compared to the individual student averages.

Pulling it all together…

Team-based learning (TBL) is a collaborative learning approach that has been shown through science to benefit you as the student. If you are new to TBL, we encourage you to **trust the process, embrace the challenge, and have fun**. This will be a new way to learn.

It may feel a little scary or overwhelming. But remember, research tells us you will learn more (even if it does not necessarily feel like it at the time).[9] Moreover, study after study in multiple disciplines tell us that **students prefer and enjoy TBL more than other methods of teaching.**[10]

Here is some feedback from students about TBL:

> The strengths of this course are the team based learning aspect. I **really like the iRAT and tRAT [*RAP*] approach instead of having formal exams**. I think I have **learned more in this course than others** I am in based on this collaborative approach to learning. I also really appreciate the group activities.
>
> *- Anonymous student, 400-level course*

> One strength of this course was that it was **very organized**. I loved the concept of Team-based learning. It really **helped to grasp the concepts even more** and I didn't feel like I was just being lectured at.
>
> *- Anonymous student, 400-level course*

> The strengths were the group work and the assignments that we did in class. I felt like they helped **build my understanding throughout each module**.
>
> *- Anonymous student, 300-level course*

So, by the end of the academic term, we hope you join the chorus of TBL students who have engaged in active learning to bolster their knowledge and skills in the classroom and beyond!

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[9] Kamei, 2021
[10] See, for example, Craig, Nodeland, Long, & Spivey, 2020; Najdanovic-Visak, 2017; Santana, Oliveira, & Ramos, 2019

Curious to learn more? Contact us!

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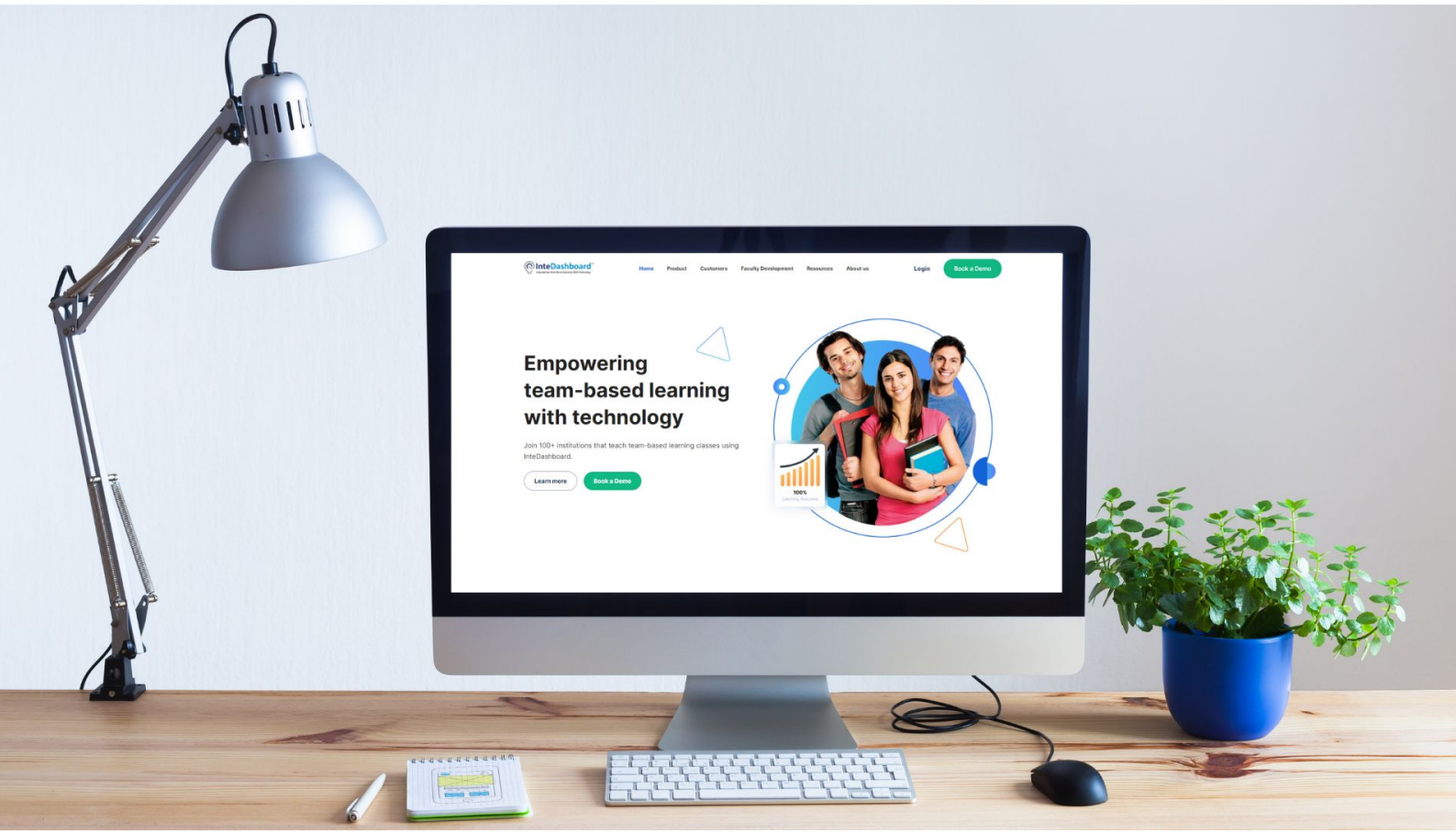
4 Benefits of TBL for Students



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References

Craig, J. M., Nodeland, B., Long, R., & Spivey, E. (2020). Student perceptions of team-based learning in the criminal justice classroom. *Journal of Criminal Justice Education*, *31*, 372-389. https://doi.org/10.1080/10511253.2020.1742756

Deslauriers, L., McCarty, L. S., Miller, K., Callaghan, K., & Kestin, G. (2019). Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom. *PNAS*, *116*(39), 19251-19257. www.pnas.org/cji/doi/10.1073/pnas.1821936116

Espey, M. (2018). Enhancing critical thinking using team-based learning. *Higher Education Research & Development*, *37*(1), 15-29. https://doi.org/10.1080/07294360.2017.1344196

Kamei, R. K. (2021). *Strategic learning: A holistic approach to studying*. World Scientific Publishing Co.

Kesterson, C., Lai, J., Ahamed, M., & Selim, M. (2021). Mixed active-traditional learning versus team-based learning: a comparative study for a freshman programming course. Retrieved from: https://dr.lib.iastate.edu/handle/20.500.12876/7rKoNW8r

Leupen, S. M., Kephart, K. L., & Hodges, L. C. (2020). Factors influencing quality of team discussions: Discourse analysis in an undergraduate team-based learning biology course. *Life Sciences Education*, *19*(1), 1-13. https://doi.org/10.1187/cbe.19-06-0112

Liu, S. C., & Beaujean, A. A. (2017). The effectiveness of team-based learning on academic outcomes: A meta-analysis. *Scholarship of Teaching and Learning in Psychology*, *3*(1), 1-14. http://dx.doi.org/10.1037/stl0000075

Michaelsen, L. K., & Sweet, M. (2008). The essential elements of team-based learning. *New Directions for Teaching & Learning*, *116*, 7-27. https://doi.org/10.1002/tl.330

Miyatsu, T., Nguyen, K., & McDaniel, M. A. (2018). Five popular study strategies: Their pitfalls and optimal implementations. *Perspectives on Psychological Science*, *13*(3), 390-407. https://doi.org/10.1177/1745691617710510

Park, H., Kim, C., Park, J., & Park, E. (2015). Effects of team-based learning on perceived teamwork and academic performance in a health assessment subject. *Collegian*, *22*(3), 299-305. https://doi.org/10.1016/j.colegn.2014.05.001

Rajati, F., Sharifirad, G., Babakhani, M., & Mohebi, S. (2018). The effect of team-based learning on public health students' educational outcomes. *Journal of Education and Health Promotion*, *1*, 140. https://doi.org/10.4103/jehp.jehp_124_17

References

Rania, N., Rebora, S., & Migliorini, L. (2015). Team-based Learning: Enhancing Academic Performance of Psychology Students. *Procedia - Social and Behavioral Science*, *174*, 946-951. https://doi.org/10.1016/j.sbspro.2015.01.716

Rashid, A., Sharif, I., Khan, S., & Malik, F. (2020). Relationship between time management behavior and academic performance of university students. *Journal of Business and Social Review in Emerging Economies*, *6*(4), 1497-1504. https://doi.org/10.26710/jbsee.v6i4.1481

Repice, M. D., Sawyer, R. K., Hogrebe, M. C., Brown, P. L., Luesse, S. B., Gealy, D. J., & Frey, R. F. (2016). Talking through the problems: A study of discourse in peer-led small groups. *Chemistry Education Research and Practice*, *17*, 555-567. https://doi.org/10.1039/C5RP00154D

Rutter, D. (2021). How long does it take to build a team? Retrieved from: https://www.artofteamwork.com/how-long-does-it-take-to-build-a-team/

Santana, V. C., Oliveira, C. R., & Ramos, R. B. (2019). First-year students' perceptions of team-based learning in a new medical genetics course. Revista Brasileira de Educação Médica, *43*(3). https://doi.org/10.1590/1981-52712015v43n3RB20180256

Swanson, E., McCulley, L. V., Osman, D. J., Lewis, N. S., & Solic, M. (2019). The effect of team-based learning on content knowledge: A meta-analysis. *Actively Learning in Higher Education*, *20*(1), 39-50. https://doi.org/10.1177/1469787417731201

Succi, C., & Canovi, M. (2020). Soft skills to enhance graduate employability: comparing students and employers' perceptions. *Studies in Higher Education*, *45*(9), 1834-1847. https://doi.org/10.1080/03075079.2019.1585420

Succi, C. (2019). Are you ready to find a job? Ranking of a list of soft skills to enhance graduates' employability. *International Journal of Human Resources: Development and Management*, *19*(3), 281-297. ISSN: 1465-6612

Yilmaz, I., Yoncalik, O., & Bektaş, F. (2006). Relationship between the time management behavior and academic success. E-Journal of New World Sciences Academy, 5(3), 187-194. Retrieved from: https://www.researchgate.net/publication/351112206_Relationship_Between_Time_Management_Behavior_and_Academic_Performance_of_University_Students