**Team-Based Learning** (TBL) is the use of learning teams to enhance student engagement and the quality of student learning. TBL was developed by Larry Michaelsen in early 70s. It is an instructional strategy that is based on procedures for developing high-performance learning teams where individual work is done outside the class and teamwork is completed in class. Students interact as in-class teams to apply content to simple and complex problems with the feedback of the instructor as the content expert.

The four main features of the Team-Based Learning approach are the following:

1. **Permanent (term-long) and instructor-assigned groups** of 5-7 students with diverse skill sets and backgrounds evenly distributed among teams.

2. **Readiness Assurance: Individual accountability** for out-of-class work such as reading and preliminary homework being done prior to the first class meeting of each course segment - a division of the course generally based on a theme and lasting from one to three weeks. A four-step process called the Readiness Assurance Process (RAP) ensures the accountability. In this process, students (a) take a short individual readiness assurance test; iRAT (5-15 multiple-choice questions). (b) Immediately afterward, they take the same test again with members of their team (tRAT), working on a single answer sheet using Immediate Feedback Assessment Technique scratch cards (IF-AT). (c) Students who have already received their individual and team RAT scores make written appeals on any questions that the team missed on the tRAT, in case they find statements in their assigned reading that supports their view. (d) the instructor takes questions from the class on any of themes brought up by them and may give a brief lecture to clarify the muddiest points.

3. **In class application** exercises that promote both learning and team development. Feedback on these assignments should be both frequent and immediate. According to Michaelsen, "most of the reported "problems" with learning groups (free-riders, member conflict, etc.) are the direct result of inappropriate group assignments." Michaelsen adds "assignments that require groups to make decisions and enable them to report their decisions in a simple form, will usually generate high levels of group interaction." In-class assignment should have four characteristics (4-S). (a) **Significant** (correlated to important course objectives, and meaningful to the future work that the course might prepare a student for). (b) The **same** for all teams in the course. (c) About making a **specific choice/decision** – providing a simple answer – based on complex analysis of data or application of course principles. (d) **Simultaneously reported** to the whole class and evaluated immediately by the instructor.

4. **Peer evaluation** - each team member evaluates other teammates formatively throughout the semester and summatively at end of the semester, so they feel accountable not only to the instructor but to each other. Based on peer evaluations, points are given to recognize contributions made to team efforts and withheld when a team member is acting as a freeloader or in some other way not pulling his or her weight or not working with teammates in productive ways.

**Benefits for using Team-Based Learning in Education**

Team-Based Learning has been suggested to help students who seem uninterested in subject material, do not do their homework, and have difficulty understanding the material. Team-Based Learning can transform traditional content with the application and problem-solving skills while developing interpersonal skills. Team-Based Learning in education can also be important for developing skills and abilities that are useful for businesses, organizations, careers, and industries where many projects and tasks are performed by teams. Learning how to learn, work, interact, and collaborate in a team is essential for success in this kind of an environment. Many of the medical schools have adopted some version of Team-Based Learning for several of the benefits listed above, and for greater long-term knowledge retention compared to a traditional passive lecture curriculum. Controlled studies of initial implementations of team learning have shown increases in student engagement and mixed results for other outcomes (ex. test results).