



UNIVERSITY OF  
**BATH**

# Team Based Learning in a Mechanical Engineering undergraduate programme



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# Goals of this talk

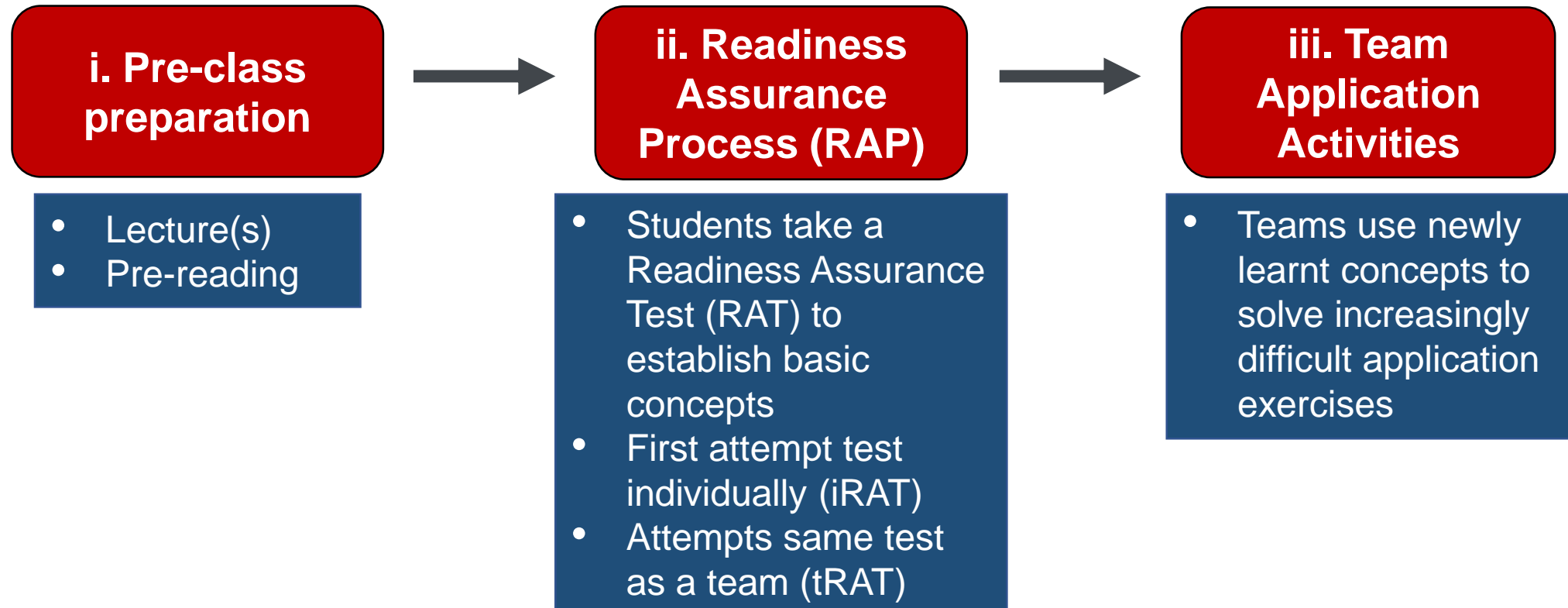
- If you are new to Team Based Learning (TBL)
  - To motivate you to talk to me, find out more and maybe give it a try
- If you are a TBL expert
  - To motivate you to provide help and guidance particularly on peer evaluation
- Anyone else
  - To motivate you to engage - all comments welcome!

Picture of Tutorial showing

- lack of peer engagement
- patchy attendance

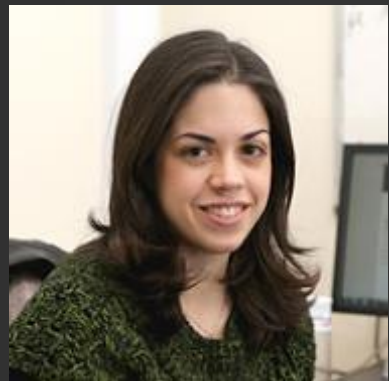
## Team-based Learning (TBL)

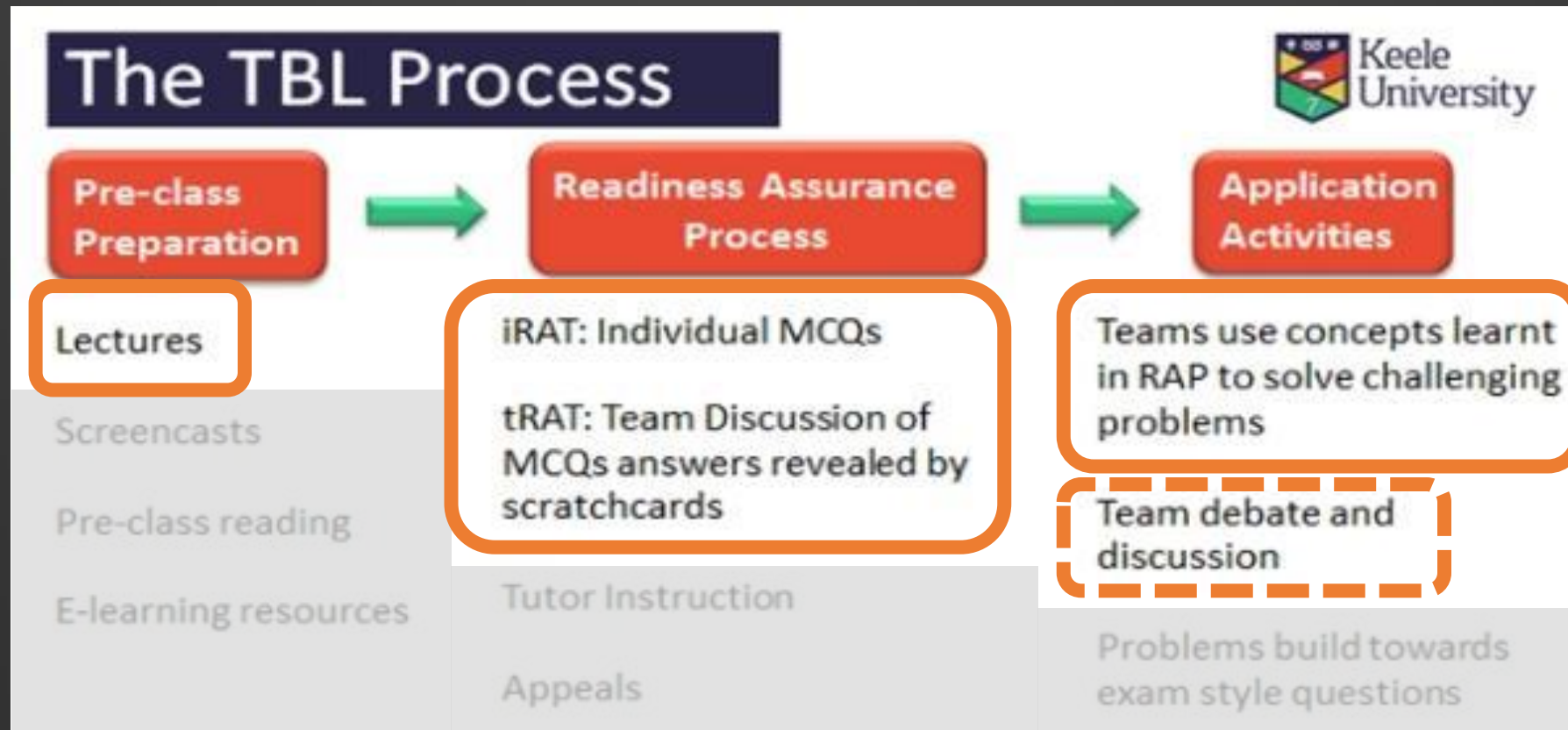
- TBL is a teaching strategy that brings the benefits of small group teaching into a large group setting.
- Students are given the responsibility for their own learning and are held accountable to their team.





## The TBL Process







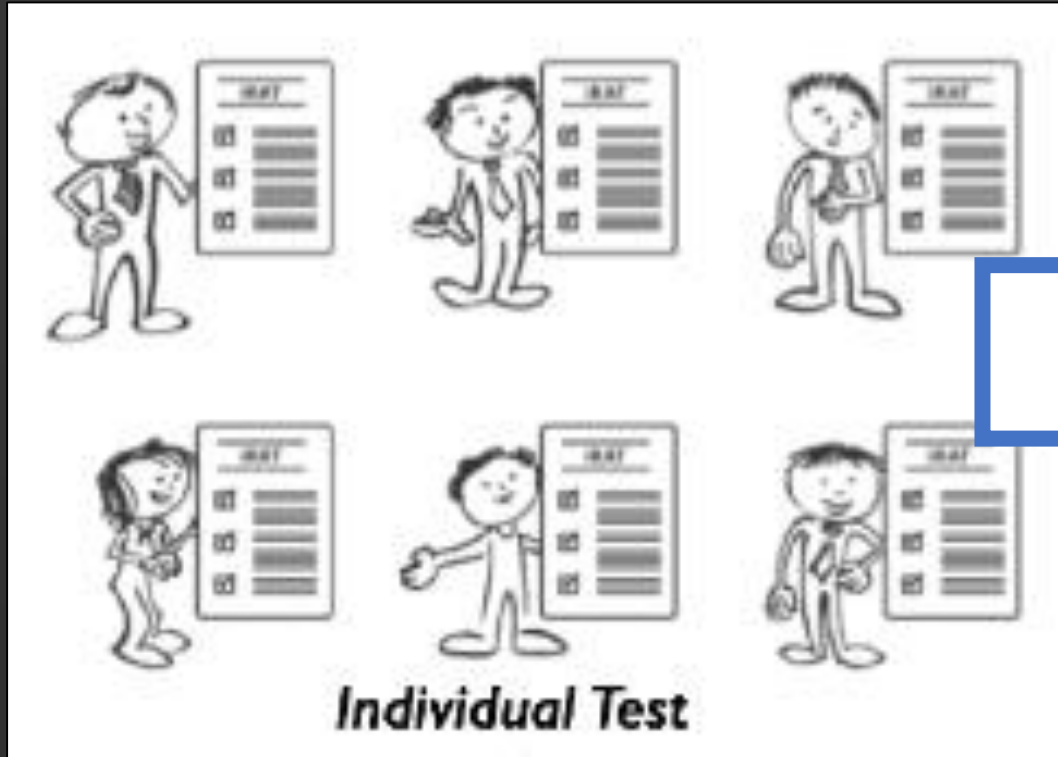
### Readiness Assurance Process

iRAT: Individual MCQs

tRAT: Team Discussion of  
MCQs answers revealed by  
scratchcards

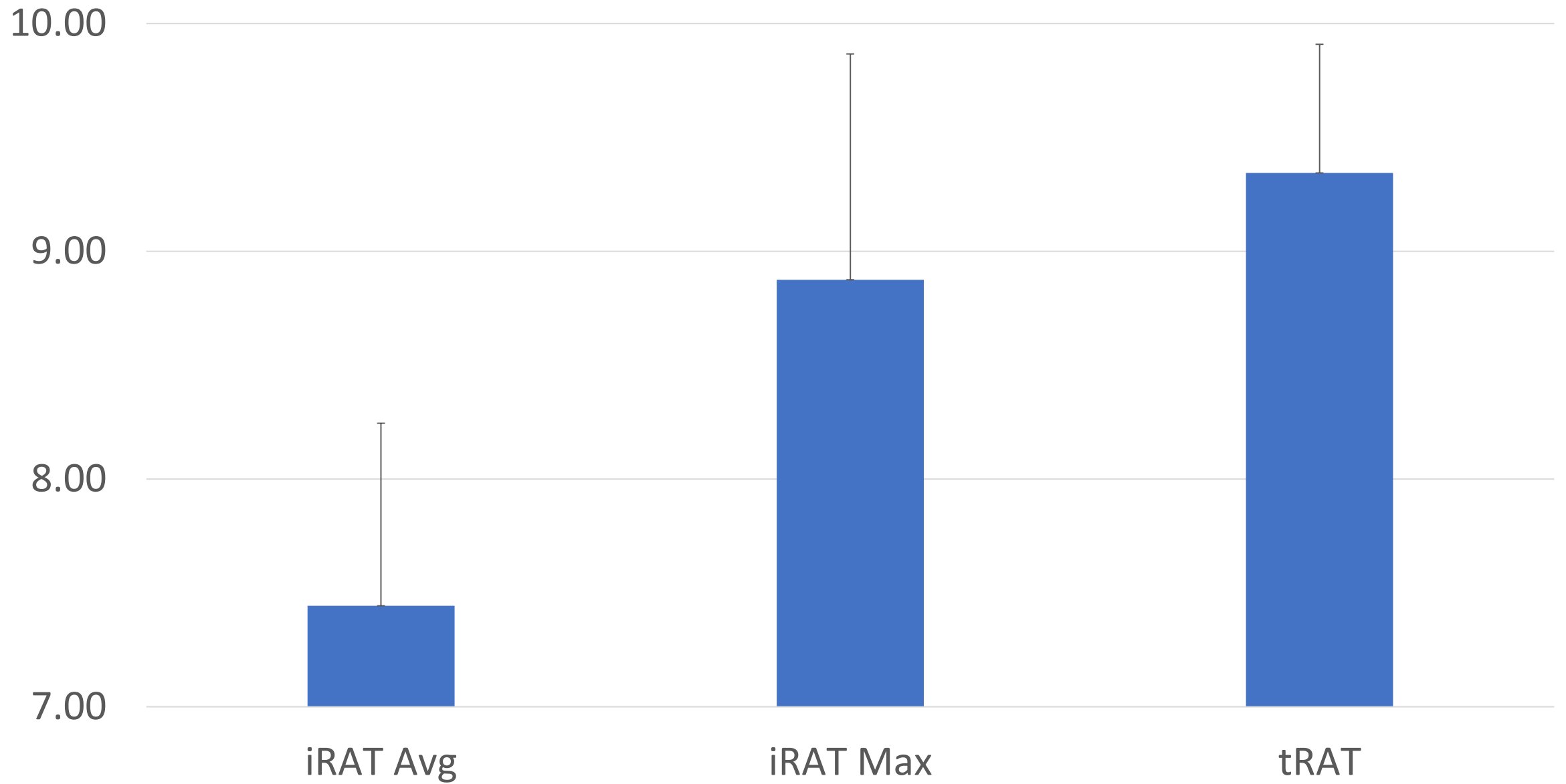
Tutor Instruction

Appeals

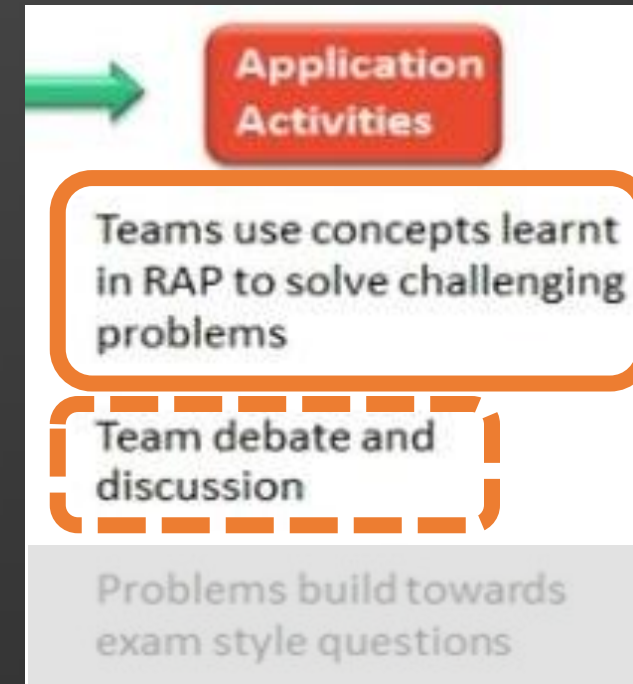




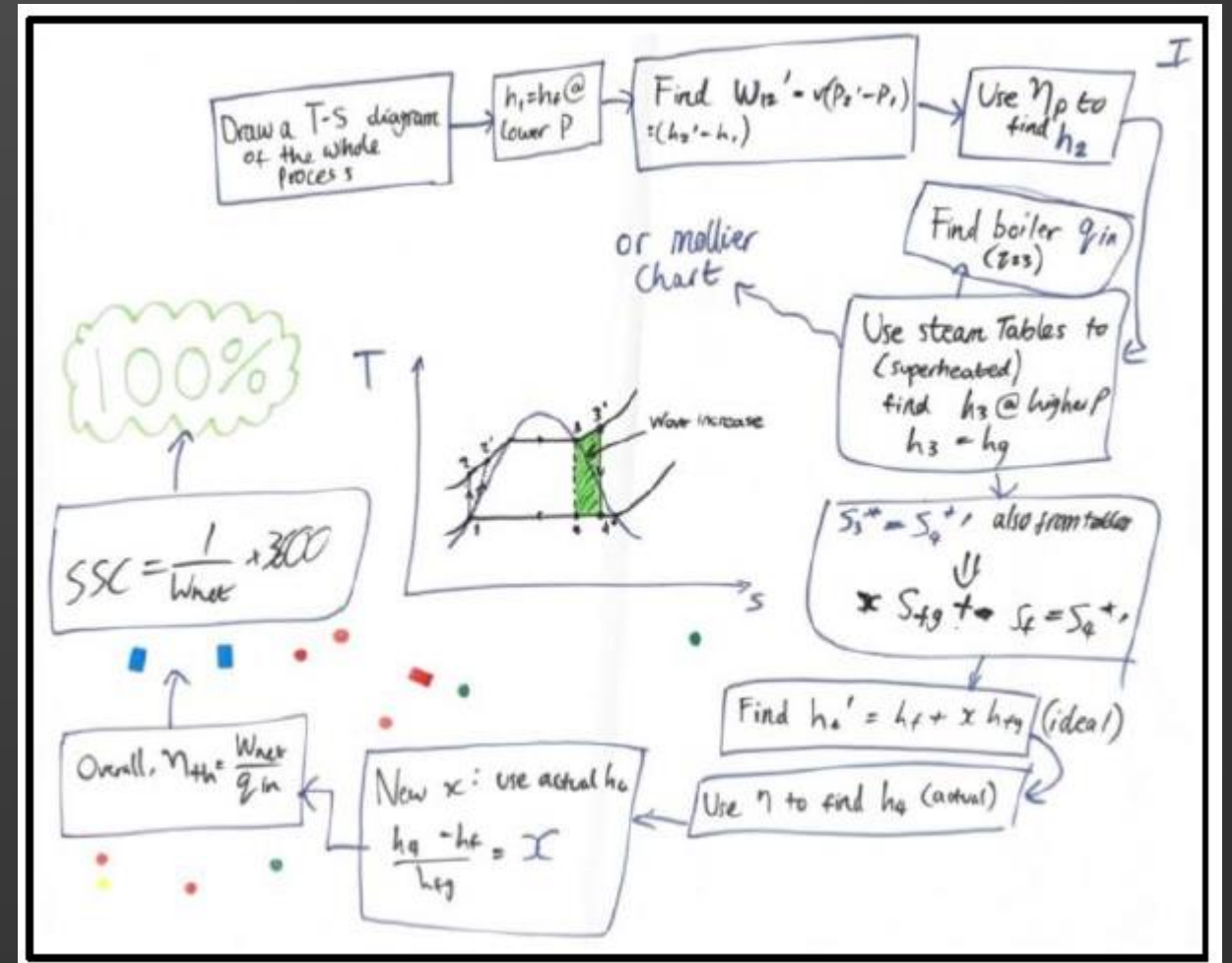
## Readiness Assurance Test Scores



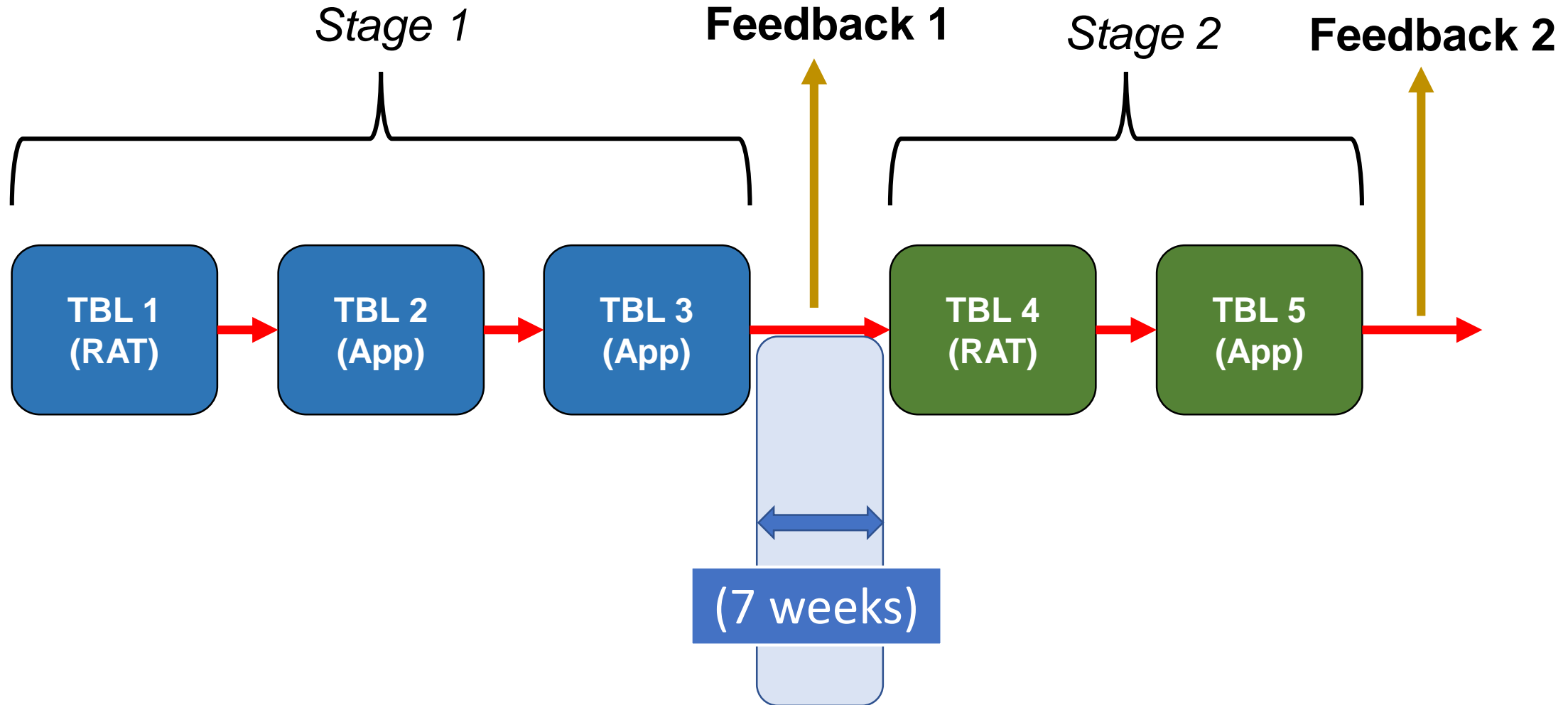
Picture of students engaged  
in iRAT/tRAT



# Picture of students engaged in Application Activity



# Methodology (Timeline)

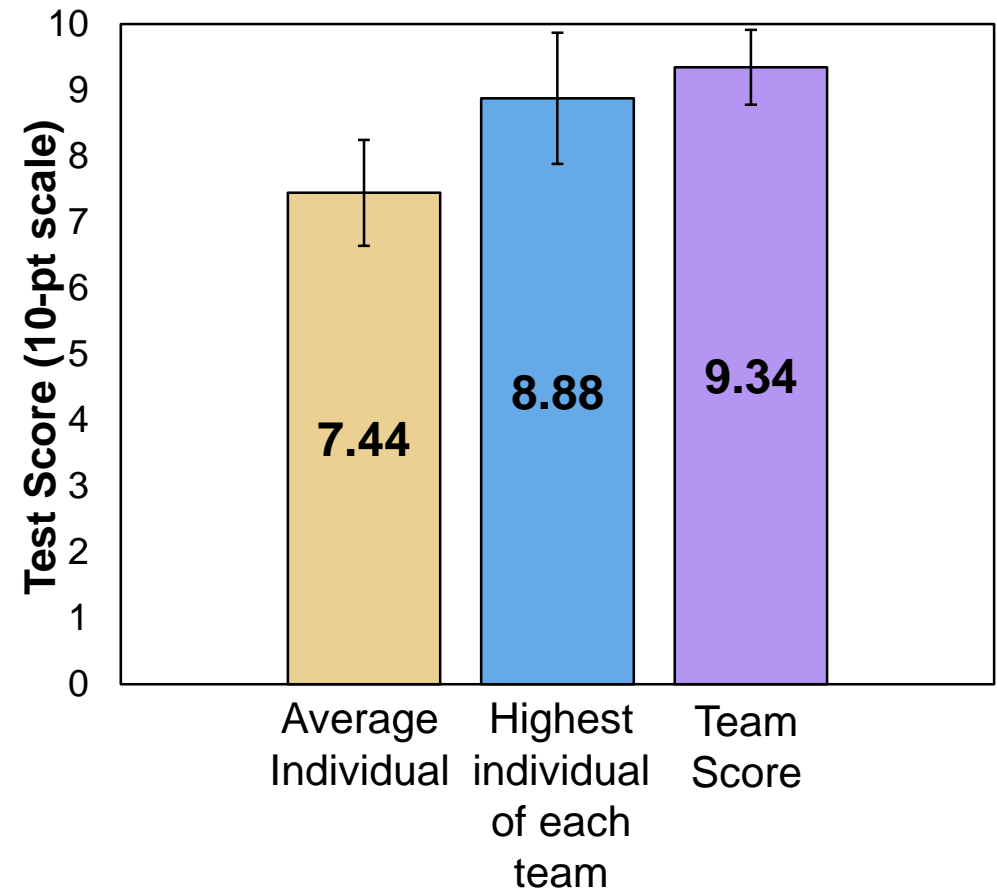


## What went well?

- The Readiness Assurance Test (RAT)
- Peer learning at a large scale

*“The quiz in TBL 1 was really useful”.*

*“Things learned are more memorable than standard tutorials”.*

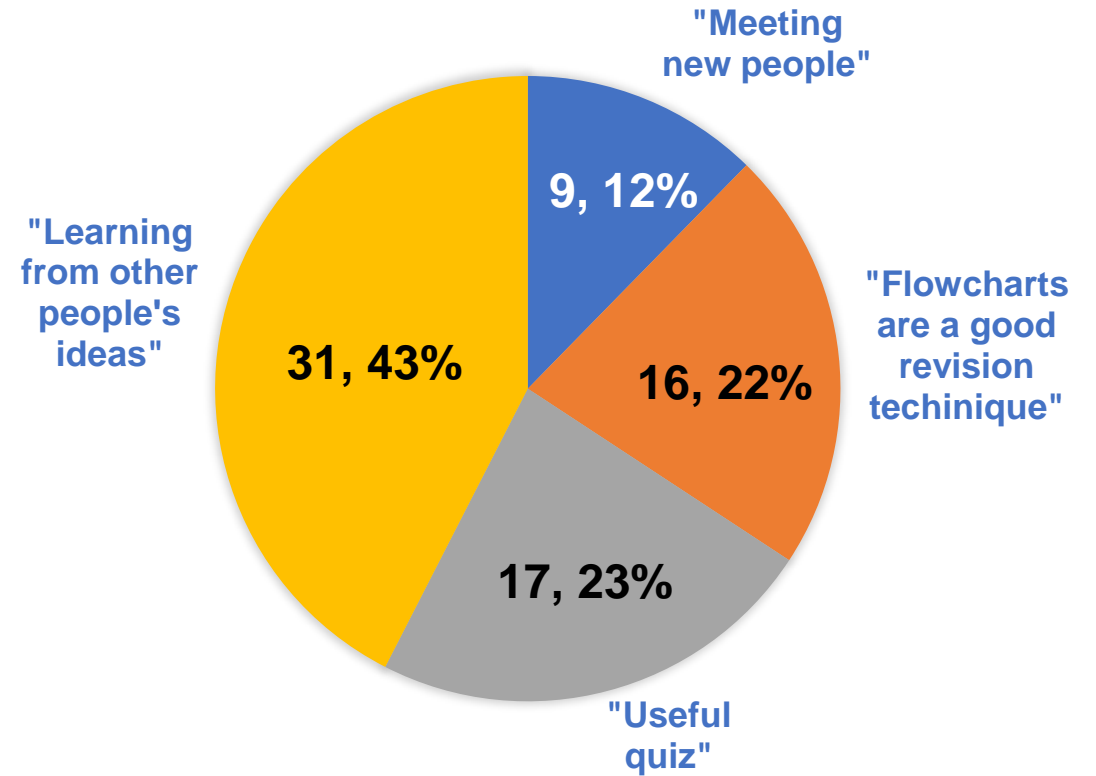




## What went well?

- The Readiness Assurance Test (RAT)
- Peer learning at a large scale

*“Encouraged learning together; useful to hear how other people worked through a problem; I find it easier to ask for help from friends than lecturers and helpers, so this session meant I could learn more”.*



## What did not go so well?

- Flowchart in TBL 2 and TBL 3
- Groups did not develop into high-performing learning teams

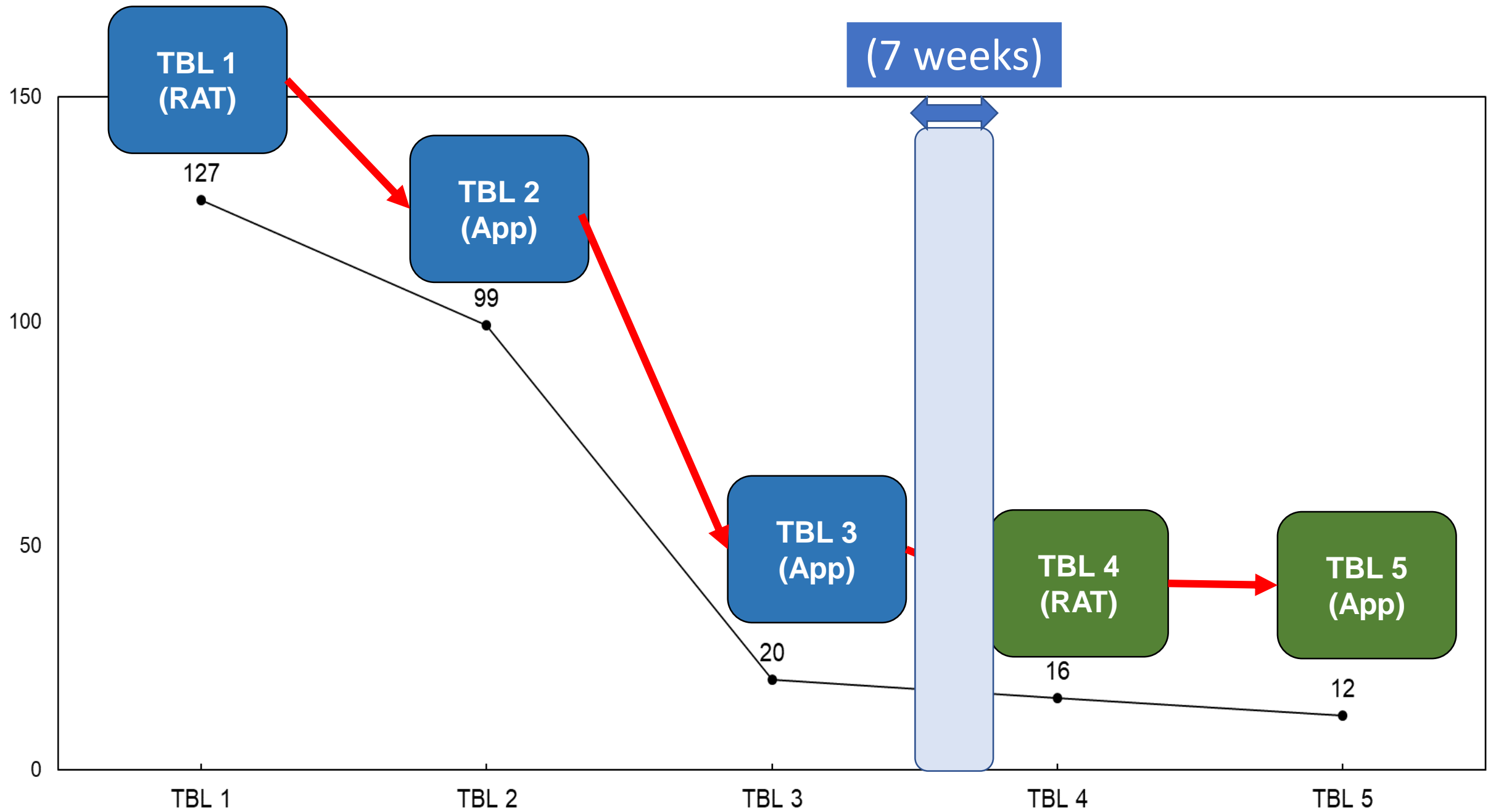
*“Need to be more general so that what we do is more applicable than just to attempt one specific question.”*

*“Variation needed.”*

*Not time efficient enough to keep up with how many questions we should have done... by this point...”*

The amount of material covered was:

Answer	No. Responses	Relative %
"Just right"	23	27%
"Too much"	7	8%
"Too little"	56	65%



# Self Assessment

## Four Essential Elements of TBL

1. Strategically formed permanent teams with a wide range of skillset
- $\frac{1}{2}$  2. The Readiness Assurance Process (e.g. Pre-reading, iRAT, tRAT, feedback)
- $\frac{1}{2}$  3. Effective group assignments that develop student's critical thinking skills
- ~~4.~~ Holding students accountable to their work and providing frequent feedback

## Conclusion

### The Easy part

- iRAT/tRAT worked!
- Scaling up of learning

### The Hard Part

- Designing Application Activities
- Building High Performing Teams (peer evaluation)

TBL does not play well with 'traditional' tutorial schedule/mindset