

**Imperial College
London**

Using and Abusing TBL to sow the seeds of interdisciplinarity

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- Introduction to Team Based Learning
- Adapting the Process
- Case Study: Lessons From History

- Developed by **Larry Michaelson and Michael Sweet**
- Pedagogical methodology for developing both conceptual and procedural knowledge in small group work
- Allows large scale interactive teaching with group work and peer learning

<http://teambasedlearning.org/>

- Students are introduced to a series of concepts over a number of ‘cycles’
- For each cycle
 - The students are given preparatory material
 - They then sit an individual multiple choice test (iRAT)
 - They repeat the test in their teams (tRAT)
 - Then the teams complete an application exercise

- Students are introduced to the process and make a number of choices about how things will work
- Teams are assigned by the instructor
- Students prepare pre-set material before the class
- The team test is the same as the individual test
- Students can submit written appeals after the test
- Appeals are clarified by the instructor
- All teams complete the same application exercise

More rules about the application exercise (tAPP)

- 4 S's
 - Significant – the groups should work on a question, problem or case demonstrating the concept's usefulness
 - Same – the groups should work on the same question
 - Specific Choice – the students should be required to make a specific choice
 - Simultaneous Report – the students should be required to report their answers at the same moment as the rest of the class

“A look at historical global phenomena and disasters to see what lessons can be taken forward to help better prepare the world to tackle global challenges”

- Optional 3rd/4th year undergraduate module – mixed science, engineering and medical students
- Course credit (10% year mark)
- 20 weeks of 2 hour classes

- We look at a range of historical disasters including:
 - Chernobyl
 - L.A. Riots
 - 2004 Indian Ocean Tsunami
 - B.S.E. Crisis
- We also have student choice cycles and have covered: Aral sea regression, Challenger disaster, Bhopal, Rwandan genocide, Vietnam War, 9/11, Cuban Missile Crisis, Great Chinese Famine, Haiti Earthquake, Eyjafjallajökull Eruption and more

- Are goal is to answer the question of whether we can learn from history
- Each topic is explored from a range of perspectives (social, economic, political, ethical, technical, policy)
- We aim to develop empathic engagement with all the key individuals in each disaster (victims, perpetrators, community leaders, world leaders)

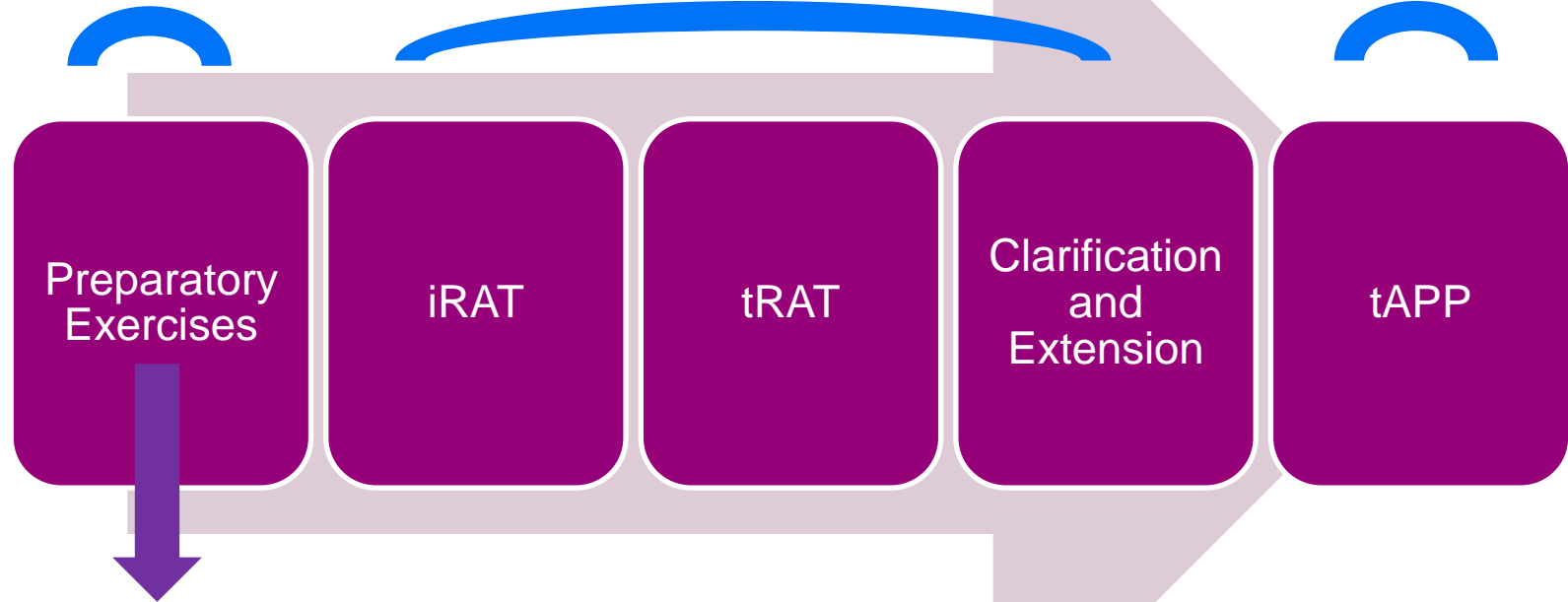
- Using TBL allows us to give the students lots of freedom
- The rigid repeating structure makes our expectations very clear
- It's a democratic process, so the students have a clear voice and make decisions about their learning (within the process)
- The repeating structure allows us to practice procedural skills and microskills – especially useful for students with less confidence
- Frequent feedback is motivating and useful for monitoring impact

Our TBL Process

Session 1

Session 2

Session 3



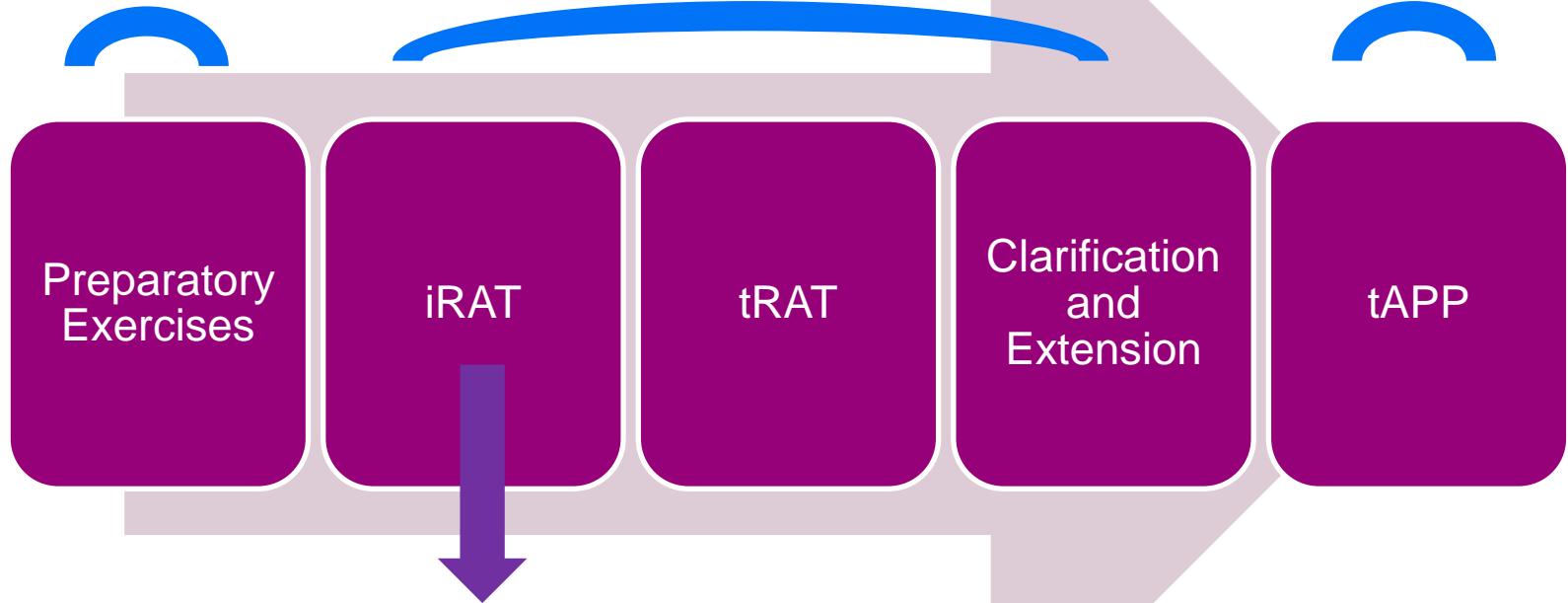
Preparatory Exercises – large group and study team activities to introduce the events that we will be studying, and to define what we need to learn for each event; portfolio of materials presented

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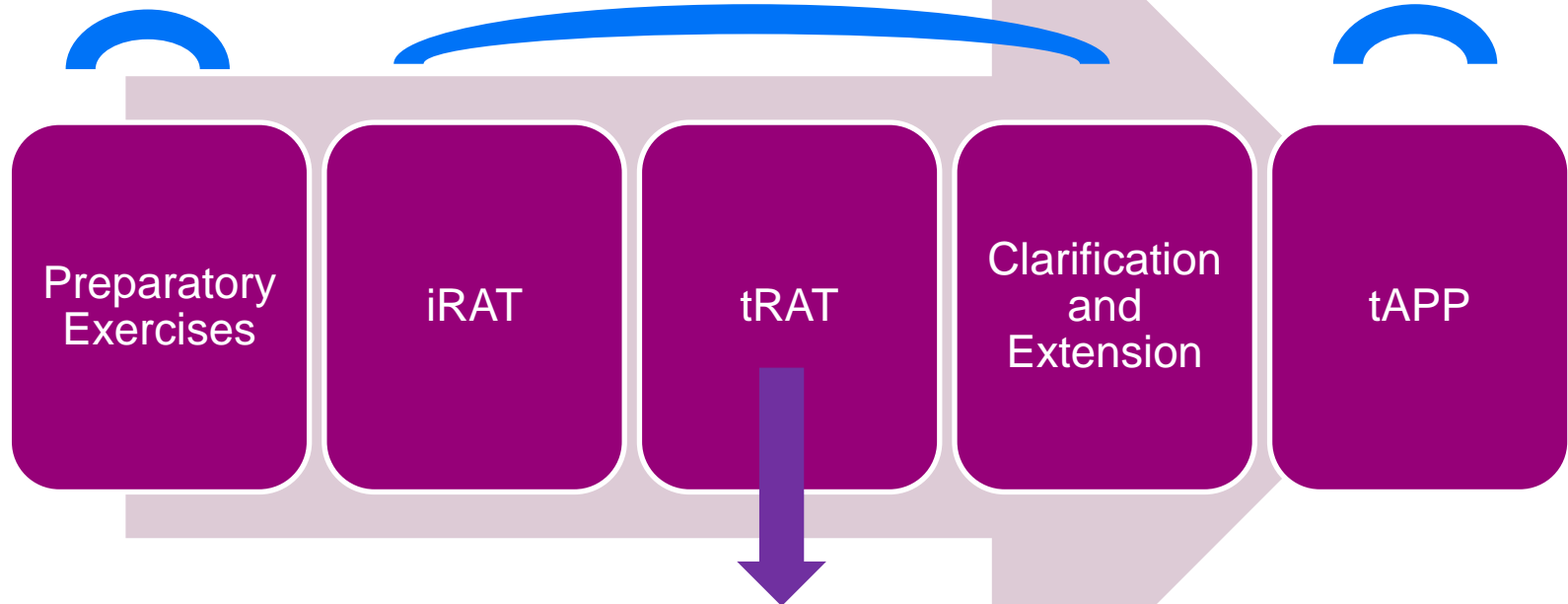
Individual Readiness Assurance Test – 10 multiple choice questions completed on paper under exam conditions at the start of the session – tests your understanding of the materials provided

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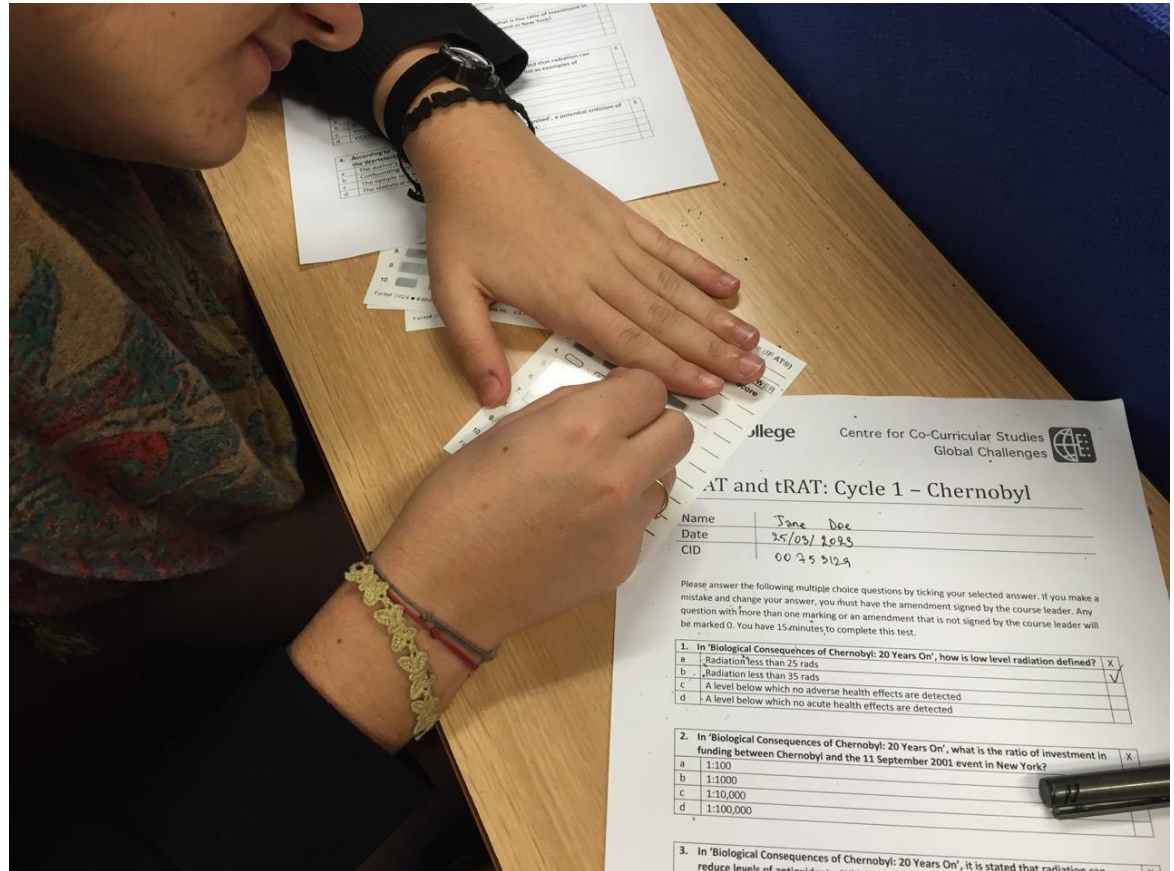
Session 2

Session 3

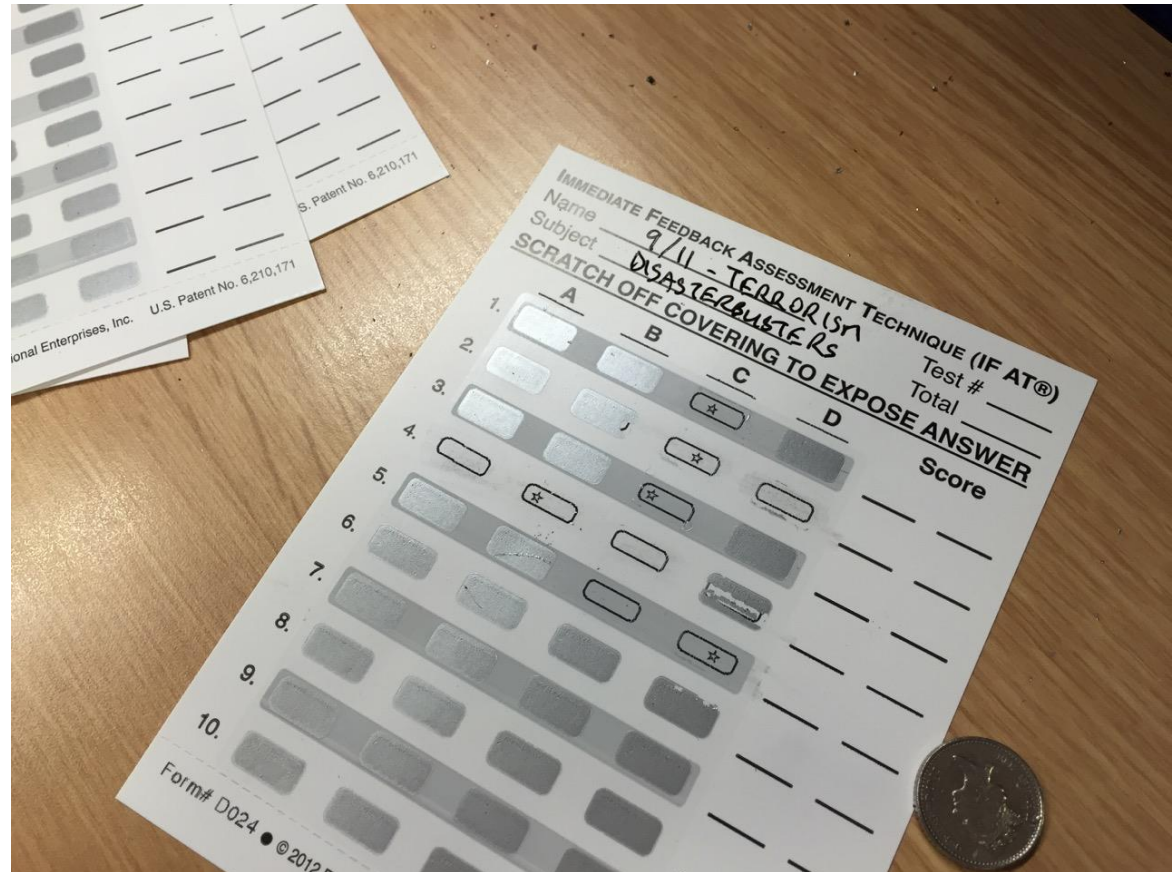


Team Readiness Assurance Test – repeat the test in your study groups – negotiate the correct answers and use the scratch card to see if you are right or not

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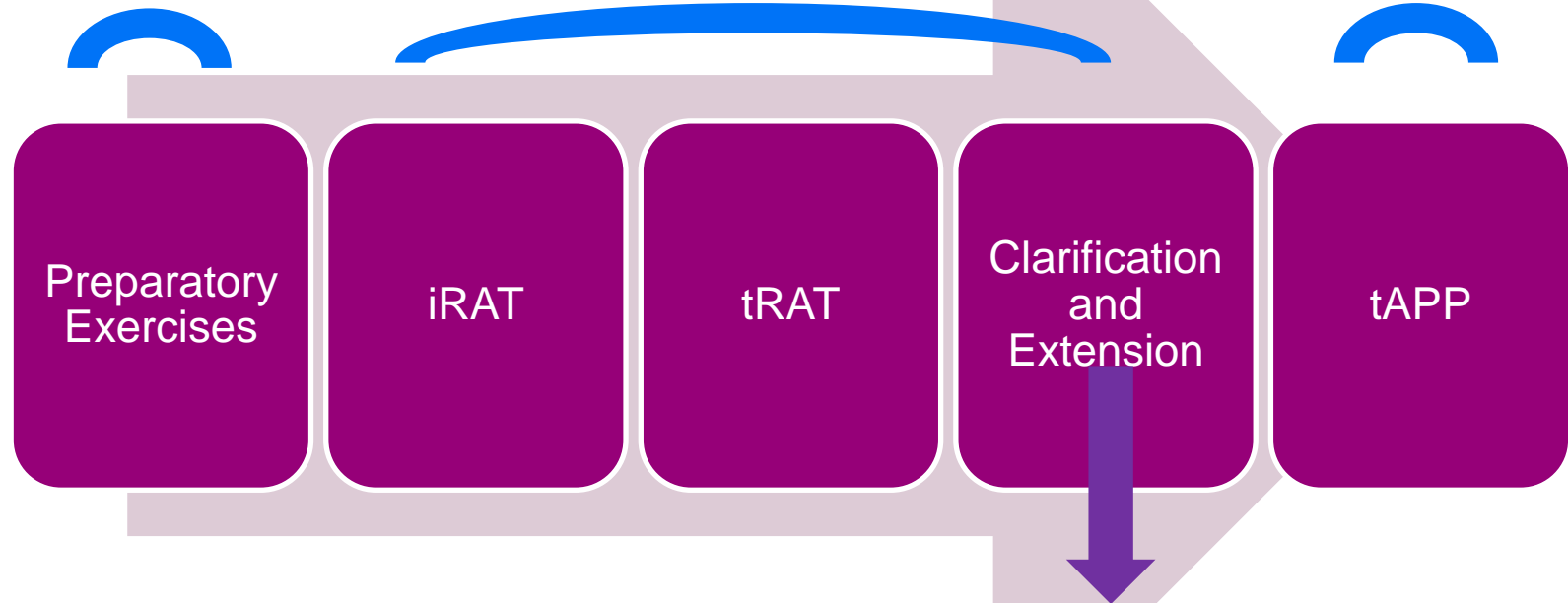


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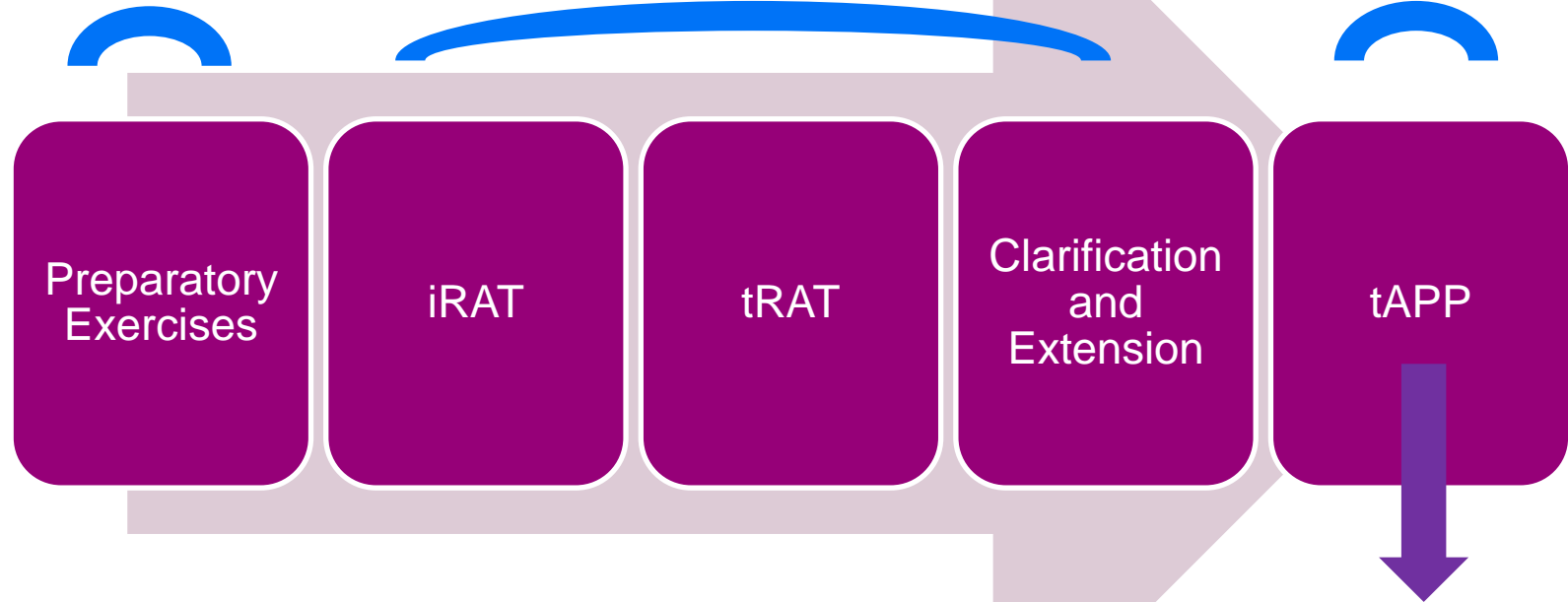
Clarification and Extension – check the answers to the tests, and then develop some key questions about the topic – these will be answered in class the next week

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Team Application Exercise – Research the answer to your application question – you will need to provide five pieces of evidence to support your answer – this must be uploaded to Blackboard Learn by the team secretary

1. We do our preparation together
 - We have a whole group preparatory exercise and then dedicated reading time in week 1

2. Written Appeals

- All our appeals must be made verbally in front of the whole class, and discussed and resolved with the whole class

3. Application Exercise

- Each team works on a different perspective
- They write their own yes/no question
- Each member provides three pieces of evidence that pertain to the question
- They select the five most pertinent pieces of evidence and write a 250 word answer to the question together
- All work is completed on a wiki

- This course is part of a wider programme
- Each course uses team working in different ways, but each team always contributes to the ‘whole’
- At the end of the course we have a comprehensive wiki resource
- The students have had intense feedback on their use of evidence and use of argument in writing
- We finish by writing longform essays together

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