

**A NEW PARADIGM OF LEADERSHIP & MANAGEMENT, TEACHING AND LEARNING  
IN HIGHER EDUCATION: GLOBAL AND LOCAL PERSPECTIVES AND PRACTICES**

SEAMEO RETRAC, July 13-14, 2023

# Could Team-Based Learning be used for post-graduate training?



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## Conflict of Interest disclosure statement

Concerning this presentation, I have no conflict of interest that needs to disclose

## What is Team-Based Learning (TBL)?

- An evidence-based collaborative learning-teaching strategy
- Designed around units of instruction
- Flipped classrooms
- Taught in a three-step cycle
  - Preparation
  - In-class Readiness Assurance Testing (RAT)
  - Application-focused exercise (APP)



Team-Based  
Learning™  
Collaborative

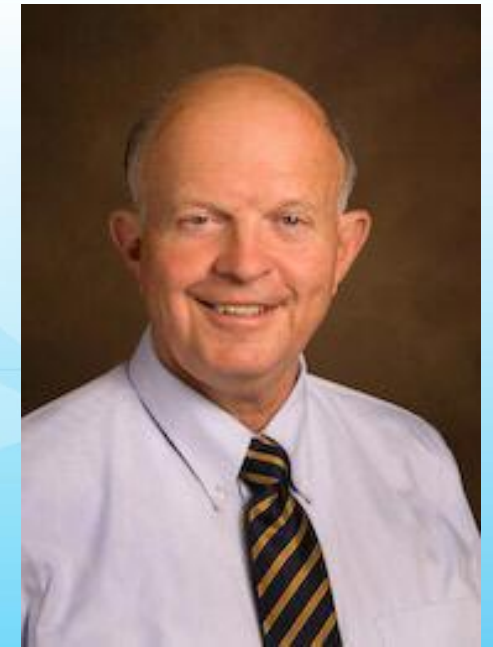
<http://www.teambasedlearning.org>

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## Why TBL?

- Considering the benefits of small group learning within large classes
- Flipping the classrooms
  - Avoiding wasting time on lectures
  - Using gained time for trainer-learner interactions
- Targeting cognitive gaps and concept linking
  - Finding, recognizing, and solving cognitive gaps
  - Connecting concepts, building long-term memories



Larry Michaelson

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## TBL users around the world

- Undergraduate training \*\*
  - Business schools
  - Medical schools
  - Social sciences
- Post-graduate training \*
  - Specific courses
  - Experiential use

\* Partial use

\*\* Universal use



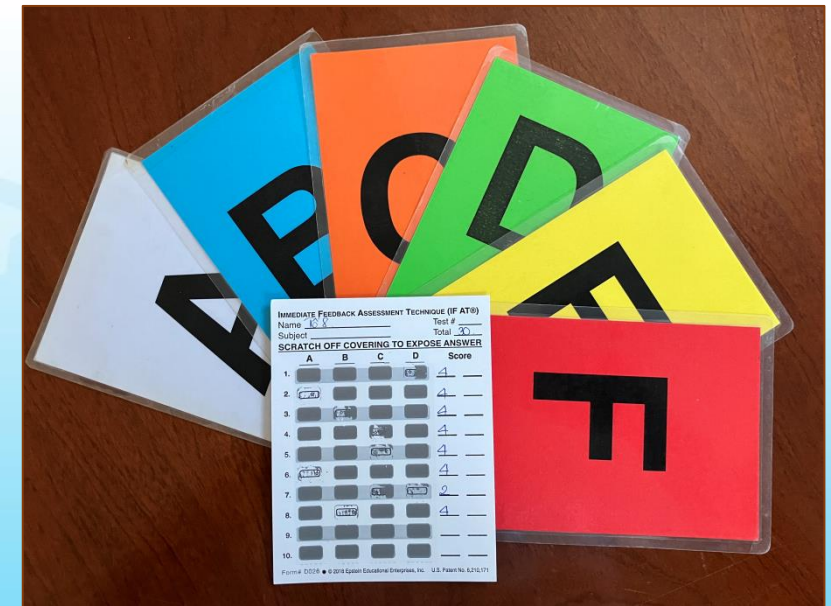
Based on data published by J. Minh Hong, 2020

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## Which characters feature TBL?

- Requires fewer resources
  - Fewer rooms
  - Fewer faculties
- Requires absolute learner accountability
  - During pre-class activities
  - During in-class activities
- Requires appropriate learning materials
  - Constructively aligned



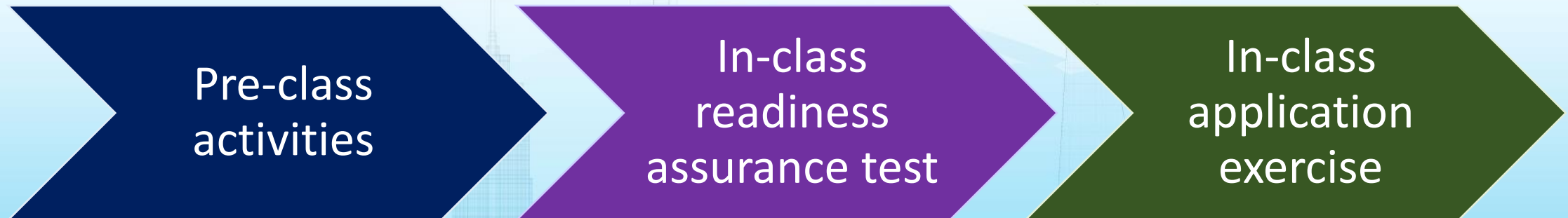
Department of OB-GYN, UMP, 2023

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## Which characters feature TBL?

- The three-step cycle of Team-Based Learning



- Require self-learning
- Focus on provided materials
- Allow self-awareness

- iRAT finds individual gaps
- tRAT confirms major gaps
- Immediate FB helps to solve gaps
- Appeal wraps the session up

- Same problem
- Significant problem
- Specific choices
- Simultaneous submission

Based on principles of TBL, TBLC, 2023

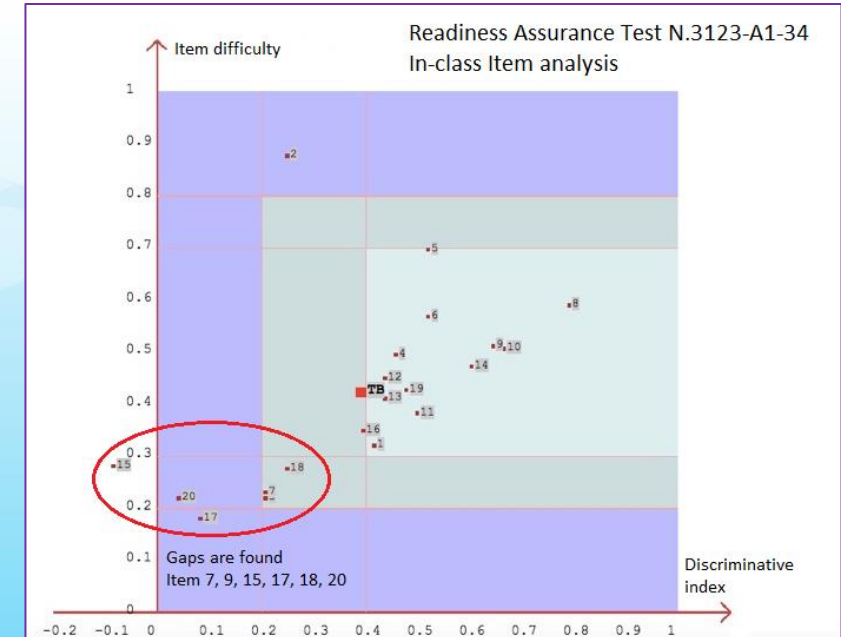
## Which characters feature TBL?

- Learner-learner discussions instead of learner-teacher Q&A
  - Let learners teach each other
  - Remember that the lecture might shoot the dialogue down
- Neither the lecturer nor the speech in TBL classrooms
  - Skilled facilitators
  - Expert presence is optional
- Wrapping learner discussion up instead of repeating the lecture
  - Mini-lecture is optional



## TBL for undergraduate training: what said the evidence?

- Teacher-learner interactions
  - Effectively enhanced
- Cognitive gaps
  - Accurately identified
  - Reliably patched
- Ability to connect learned concepts
  - Critically linked, applied and retrieved
  - Effectively supported (evidence-based thinking)



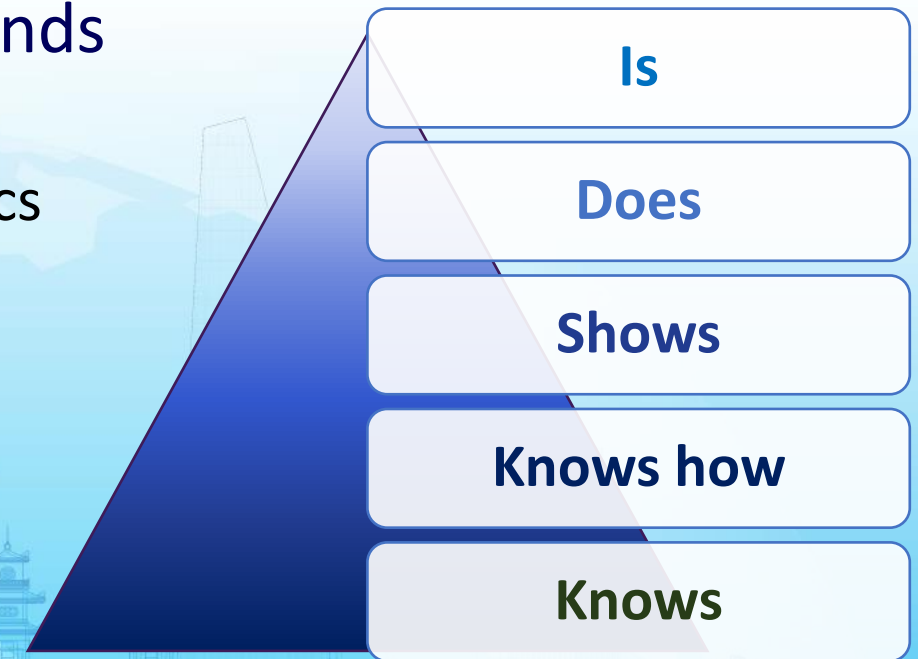
Reprod Med module, Year 3  
UMP, 2023

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# Which characters feature post-graduate training?

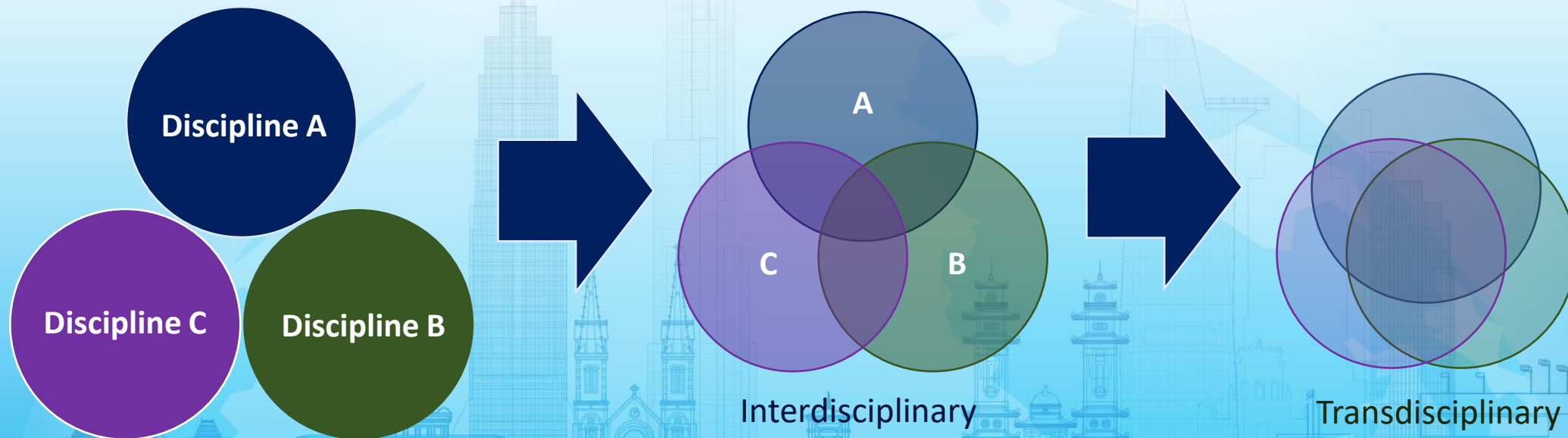
- Learners come from different backgrounds
  - Diversity in competency, experiences
  - Heterogeneity among learner characteristics
- Educational goals
  - Professional competency
  - Real-life issues



The extended Miller' pyramid, 2020

# Which characters feature post-graduate training?

- Educational environment
  - Trans/interdisciplinary replace the multidisciplinary approach

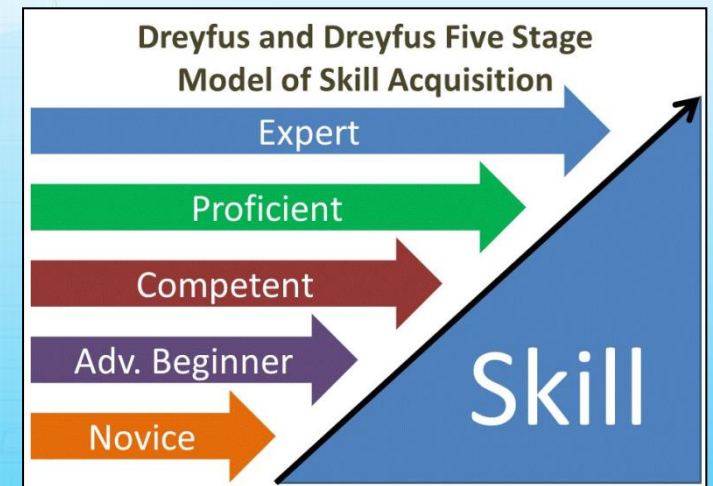


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Which characters feature post-graduate training?

- Educational environment
  - Real-life events replace simulation-based exercises



Dreyfus: the milestones of metamorphosis

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## Which characters feature post-graduate training?

	Undergraduate training	Post-graduate training
Targets	Knows, knows how, shows	Shows, does, trusts
Educational environment	Simulation-based	Workplace-based
Knowledge complexity	Simple, separate	Complex, linked, connected
Outcome measurement system	Pre-defined end-points	Milestone complex system
Validating criterion	Generally pass-fail	Trust-based judgement, decision
Learning subjects	Tailored application exercises	Real-life events (partially edited)
Learning materials	Standardized subjects	Real-life beings

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## TBL for PGT: what demonstrated experiential use?

- A few institutions implemented TBL in their PGT curriculums
  - Experiential
  - Partial
- Controversial findings
  - As effective as conventional approaches, with some minor advantages \*
  - Can be part of a residency training program but requires adaptations \*\*
- Consensus
  - Appropriate adaptations are the key to implementing TBL in PGT \*, \*\*

\* Graham, 2020 ; \*\* McMullen 2014

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## TBL for post-graduate training: areas for improvement


- Keys to making TBL more relevant
  - Involving TBL experts
  - Re-inforcing pre-class preparation
  - Avoiding excessive pre-session assignments
- Easy to say, hard to do
  - Complexity of knowledge
  - Ability to link new concepts to real-life practices

Medical Science Educator (2020) 30:631–642  
<https://doi.org/10.1007/s40670-019-00844-9>

ORIGINAL RESEARCH

Can Team-Based Learning (TBL) Be Used to Deliver Postgraduate Education in Transfusion Medicine for UK Physicians?

Jane Graham<sup>1,2</sup> • Conrad Hayes<sup>2</sup> • Kate Pendry<sup>3</sup>



Graham 2020

McMullen et al. *BMC Medical Education* 2013, 13:124  
<http://www.biomedcentral.com/1472-6920/13/124>

BMC Medical Education

RESEARCH ARTICLE Open Access

Team-based learning for psychiatry residents: a mixed methods study

Isabel McMullen<sup>1\*</sup>, Jonathan Cartledge<sup>2</sup>, Ruth Levine<sup>3</sup> and Amy Iversen<sup>4</sup>

McMullen 2014

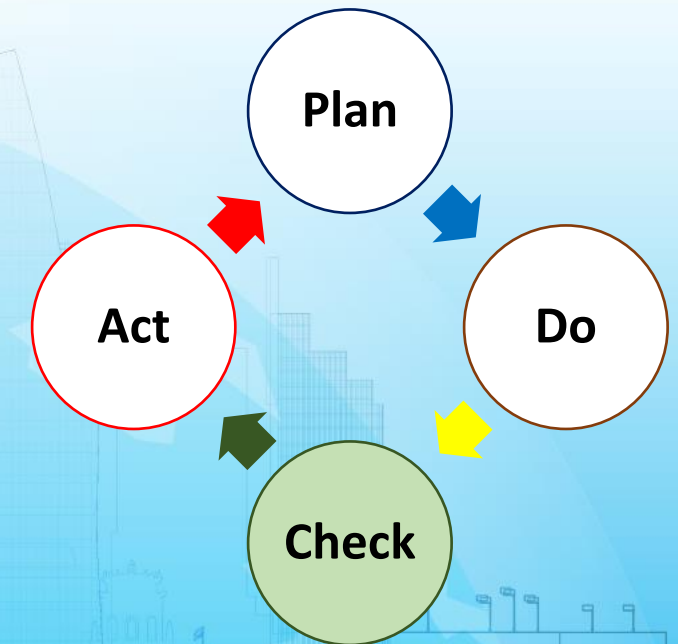
## Experiential use of TBL for PGT: the UMP's experiences

- In 2017, we built up and started the first PGT course using TBL
  - On reproductive medicine
  - This integrated course includes biology, molecular biology, physiology, biochemistry, endocrinology, gynaecology, and pharmacology
- Feedback is generally positive
  - Teaching-learning approach
  - Learner individual perspectives
- impacts of the PGT educational ecosystem on TBL course outcomes



## Experiential use of TBL for PGT: the UMP's experiences

- As of 2023, there were four experiential PGT courses completed
  - Partial use of TBL with some modifications applied
- Main areas for improvement identified
  - Involving experts
  - Preparing learning materials
  - Defining RAT goals
  - Composing authentic application situations
  - Selecting facilitators



The PDCA process in Quality Assurance

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## Adapting the practice of TBL to PGT

- Adapting to the PGT ecosystem while keeping the TBL principles
- Designing course syllabi
- Involving experts
- Preparing learning materials
- Composing relevant Readiness Assurance Tests
- Composing authentic application exercises
- Choosing facilitators

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## Adapting to the PGT educational ecosystem

- Domination of workplace activities in teaching-learning processes
  - Requires the use of the most authentic subjects
- Replacement of individual tasks by team works
  - Requires learner ability to work in teams
- Heterogeneity among learner characteristics
  - Requires appropriate team forming
- Once done, TBL enhances learners' ability to work in teams \*

\* Travis, 2016

## Designing course syllabi

- There are changes in the weighting of learning components
  - Increasing the weighting of practical activities
  - Decreasing the weighting of theoretical components
- Teaching theory should target various disciplines simultaneously
  - Encouraging inter/transdisciplinary approaches, which include assessments
  - Redirecting to practice-oriented issues
- Once done, TBL could put learners at ease while simultaneously working on several topics

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## Involving experts

- A primary prerequisite for designing a TBL course for PGT
  - Making the core of human resources
  - Helping learners develop professional competencies
- Experienced practitioners should work together
  - Forming an expert committee that includes  $\geq 1$  expert in the educational field
  - Designing course syllabi, ensuring assessments, composing learning materials, approving these materials and facilitating the TBL classrooms
- Conducting a series of ToT workshops is highly recommended

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## Preparing learning materials

- Learning materials should
  - Constructively align with designed ELOs
  - Consistently develop ideas throughout several disciplines
  - Directly target interdisciplinary links
- Learning materials should be
  - Simplified, structured, oriented and learner-centred
- Avoiding potential learners' overload is strongly recommended
  - The workload should not exceed the minimum required

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## Composing relevant RAT

- **RAT should**
  - Focus on connecting, applying, synthesizing, summarizing
  - Evaluate the ability to link integrated concepts
- **Expert committee should**
  - Identify commonly misunderstood reasonings, mistakes, and potential gaps
  - Put it all into the RAT
- **Irrelevant RAT might lose the ability to help learners effectively link separate concepts**

# Readiness Assurance Test focuses on high-order thinking

19. Các dẫn xuất nor-19 testosterone có thể gây ra được những tác động nào tương tự với tác động của progesterone?

- A. Giống nhau ở tác động genomic; khác nhau ở tác động non-genomic
- B. Giống nhau ở tác động non-genomic; khác nhau ở tác động genomic
- C. **Giống nhau ở nhiều tác động; cả tác động genomic lẫn non-genomic**
- D. Androgen và progesterone không có bất cứ tác động nào như nhau

Item 19: might require class level discussion

Difficulty: 0.3 ; Discrim: 0.5 ; r-pbis: 0.400, p = 0.02\*

Options	A	B	C*	D
Highest group	0	4	6	0
Lowest group	2	6	1	1
Proportion	10%*	50%	35%	5%*
r-pbis	-0.162	-0.168	0.400	-0.124
p value	0.100	0.100	0.020	0.100

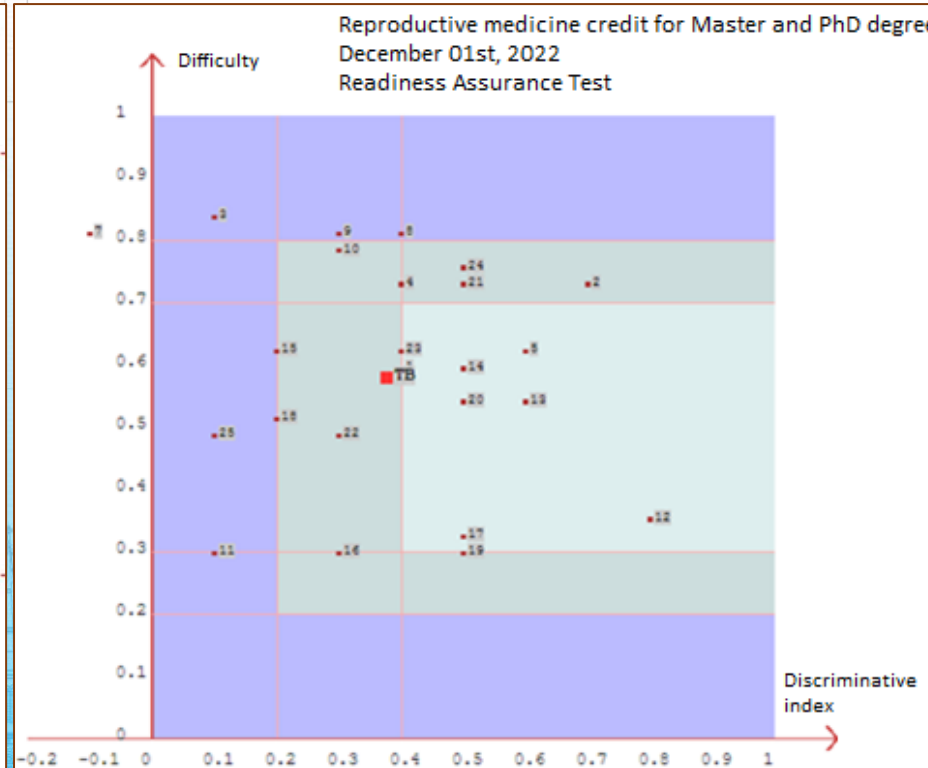
20. Hãy xác định phương tiện nào cho phép xác định tổng trữ lượng của các nang noãn nguyên thủy (dormant follicles) còn lại trên buồng trứng?

- A. Nồng độ Inhibin B ở thời điểm các đầu của chu kỳ kinh
- B. Nồng độ FSH ở thời điểm các đầu của chu kỳ kinh
- C. Nồng độ AMH ở thời điểm bất kỳ trong chu kỳ kinh
- D. **Khảo sát tiêu bản mô vô buồng trứng trên kính hiển vi**

Item 20: can be solved at the individual or at the team level

Difficulty: 0.54 ; Discrim: 0.5 ; r-pbis: 0.495, p = 0.002\*

Options	A	B	C	D*
Highest group	0	0	2	8
Lowest group	1	1	5	3
Proportion	5%*	5%*	35%	55%
r-pbis	-0.215	-0.263	-0.344	0.495
p value	0.100	0.100	0.050	0.002





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## Composing authentic application exercises

- Application situations should
  - Respect for the 4S principles
  - Focus on managing real-life issues and more complex subjects
- Solution submission should encourage learners to express more complex options
  - Limite the use of coloured clickers
  - Encourage the use of various ways of reporting

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# Authentic application situations with open-ended questions

## The very first visit

- Mrs. A, 25 yo, comes for counseling about her menstruation status and wishing baby
- Taking history:
  - Total absence of vaginal bleeding
- Clinical findings:
  - Height 155 cm, BMI 20 kg/m<sup>2</sup>
  - Presence of a small uterus
  - Absence of secondary genital signs, e.g. breast, pubis hair

What are the most relevant tests to do?

## Lab findings

- Karyotype 46,XX
- Hand X-ray (see beside)
- Very low level of serum gonadotropins
- Very low level of serum sex steroids
- Normal level of prolactin
- Normal level of AMH
- Ultrasound: small uterus, cervix:corpus ratio # 1, presence of some antral follicles
- MRI shows normal findings



What are identified as Rx goals?

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## Choosing facilitators

- Professional proficiency is the primary requirement for facilitators
  - Able to conduct discussion that concerns the highest degree of thinking
  - Able to help learners link learned concepts to real-life practices
- Skilled facilitators play a crucial role in TBL classrooms
  - Unskilled facilitators might shoot the in-class discussion down
- All trainers should regularly attend specific ToT on facilitating skills
  - Improving facilitating skills and exchanging their expertise

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## Take-home messages

- Evidence supports the use of TBL in PGT
- Experiential works confirm that the use of TBL in PGT is possible
- This implementation needs adaptations to new educational goals

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## Take-home messages

- To ensure the success of the use of TBL in PGT
  - Counting the impact of an educational ecosystem
  - Involving experts
  - Carefully designing course syllabi
  - Tailoring learning materials to achieve new goals
  - Composing relevant readiness assurance tests and applications
  - Involving trainers in ToT workshops

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On behalf of the UMP, I would like to thank all of you for your kind attention



On behalf of the TBLC, I am always ready to cooperate with you and your institution in all fields of TBL

If you have any inquiries, do not hesitate to contact us at:  
[aunhutluan@ump.edu.vn](mailto:aunhutluan@ump.edu.vn)