

Evaluating team-based learning
approaches in a Singapore
Bachelor of Nursing
Transnational Education program

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Constructivism as pedagogy

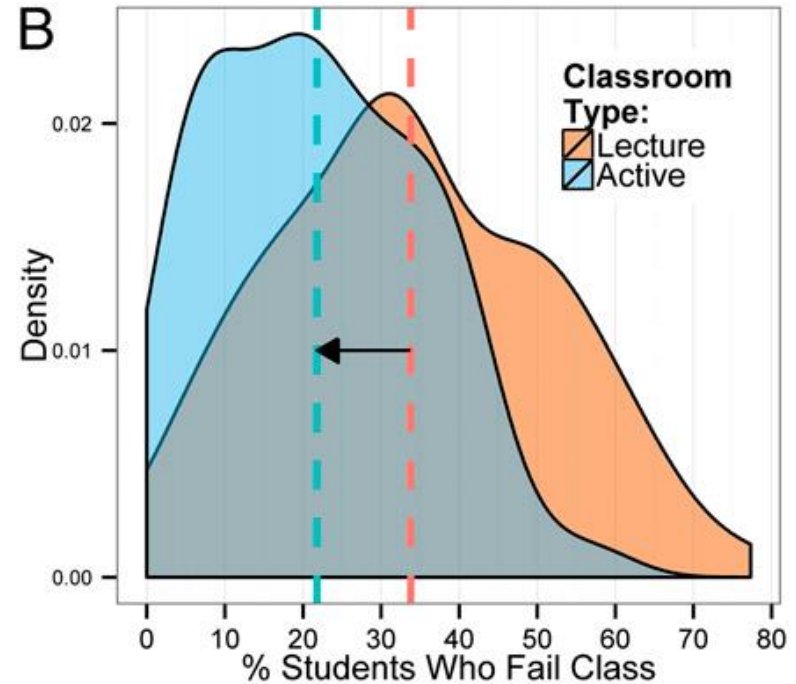
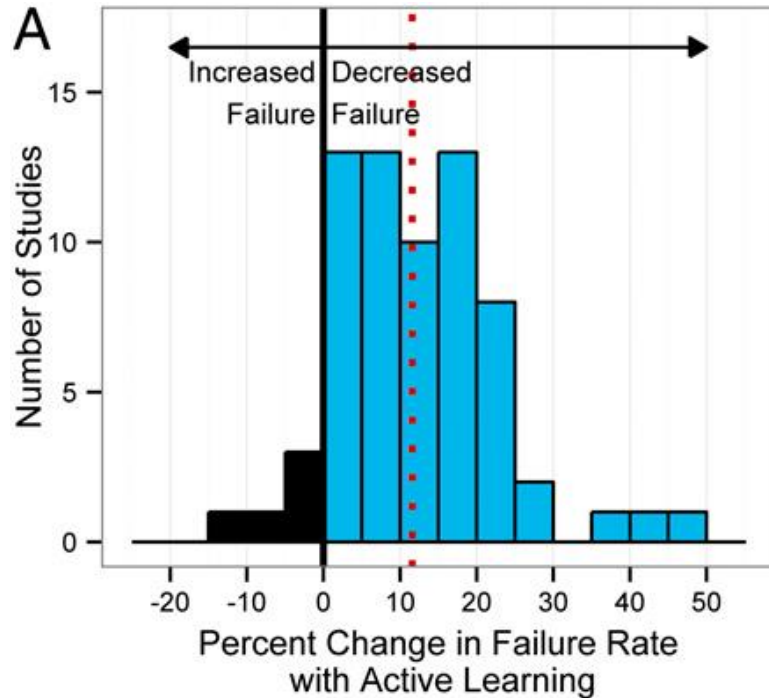
- **Active** and interactive – activity based learning
- **Social**/collaborative learning – small group/team learning
- Set **authentic problems** – close the theory/practice gap
- Encourage **reflection**
- Allow for **exploration, enquiry, multiple perspectives**
- Teacher as guide and **facilitator** of learning
- **Higher order learning**: critical thinking, problem solving, reasoning, decision-making, research.



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Integrates knowing, acting and being

Active Learning effectiveness



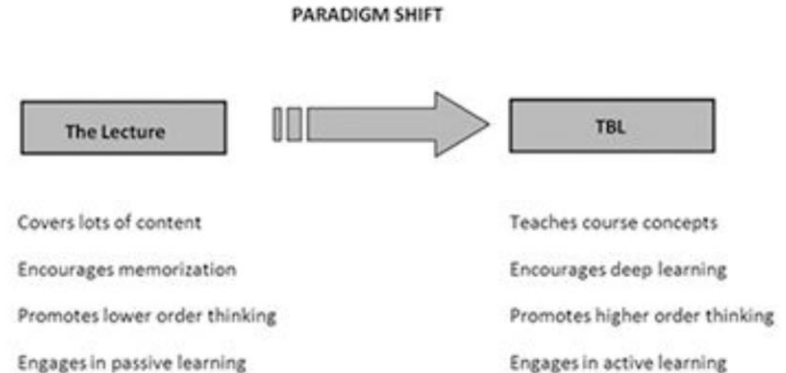
(Freeman et al., 2014)

Evidence for TBL

- Following implementation of TBL into psychiatry curriculum students:
 - performed significantly better on National Board test; scored higher on attitudes about teamwork, and reported team learning activities were more effective learning strategies (Levine et al., 2004).
- Koles et al. (2010) compared medical students' test performance on questions that assessed concepts learned by TBL or other methods:
 - Students had higher mean scores on questions that assessed knowledge learned via TBL vs content learned using other methods
 - Mean improvement of 7.9% in the lowest quartile compared to 5.5% overall
- 2 recent systematic reviews found mod positive outcomes and greatest improvement in lowest performing cohort (Dearnley, Rhodes, Roberts, Williams, & Prenton, 2018; Reimschisel et al., 2017)

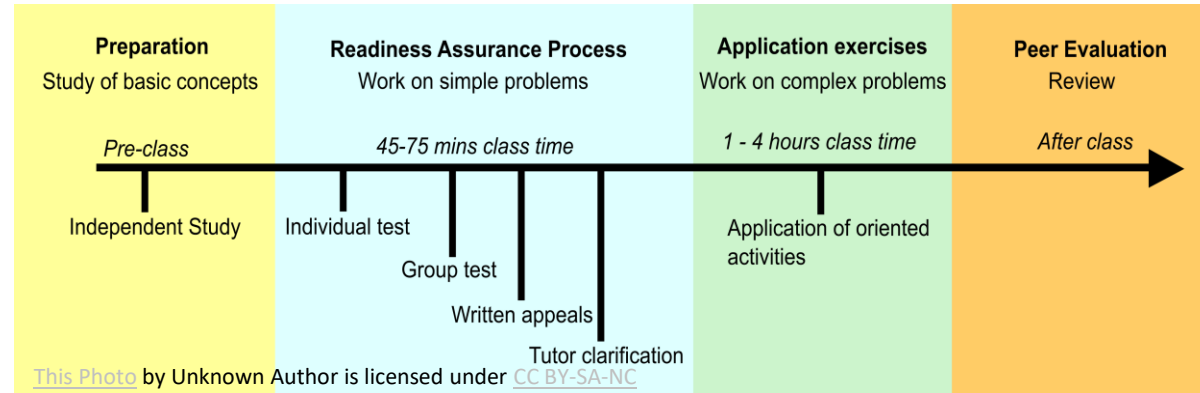
Team-Based Learning

- Involves small group instructional approaches facilitated through a structured set of activities including
 - individual work,
 - teamwork
 - immediate feedback to cover appropriate understanding and assessment of conceptual knowledge (Kibble et al., 2016)
- <http://www.teambasedlearning.org/>



Team Based Learning

- TBL is mainly delivered in 4 structured phases:
 - Preparation
 - Readiness
 - Application
 - Peer review



(Michealson & Sweet, 2011)

The status quo – pre TBL



Team Based Learning

- iRAT – Individual Readiness Assurance Test
- tRAT – Team Readiness Assurance Test



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Team Based Learning



Team Based Learning



Team Based Learning



IF-AT: Immediate Feedback Assessment Technique

IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT®)

Name _____ Test # _____
 Subject _____ Total _____

SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
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IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT®)

Name LO A Test # _____
 Subject VCN Total _____

SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.					A 3
2.					B 2
3.					A 2
4.					A 3
5.					D 3
6.					B 3
7.					A 3
8.					D 3
9.					D 3
10.					C 3
11.					B 3
12.					B 3
13.					C 3
14.					D 3
15.					B 3
16.					D 3
17.					D 3
18.					B 3
19.					B 3
20.					C 3
21.					D 3
22.					D 3
23.					D 1
24.					A 3
25.					B 3
26.					C 3
27.					C 3
28.					B 3
29.					B 3
30.					D 3
31.					C 3
32.					A 3
33.					B 3
34.					D 3
35.					D 3
36.					C 3
37.					C 3
38.					A 3
39.					B 3
40.					D 0
41.					B 3
42.					C 3
43.					A 3
44.					B 3
45.					D 3
46.					H 3
47.					B 3
48.					C 3
49.					D 3
50.					B 3

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IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT®)

Name _____ Test # L2
 Subject _____ Total _____

SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.					A 1
2.					B 1
3.					A 1
4.					A 1
5.					B 1
6.					B 1
7.					B 1
8.					B 1
9.					B 1
10.					B 1
11.					B 1
12.					B 1
13.					B 1
14.					B 1
15.					B 1
16.					B 1
17.					B 1
18.					B 1
19.					B 1
20.					B 1
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26.					B 1
27.					B 1
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41.					B 1
42.					B 1
43.					B 1
44.					B 1
45.					B 1
46.					B 1
47.					B 1
48.					B 1
49.					B 1
50.					B 1

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Team Based Learning



Scenario

- You are asked to design an assessment to test a junior nurse's understanding of medications used to treat Meniere's disease.
- What would you consider in preparing for this?

Team Based Learning

- Application Exercise

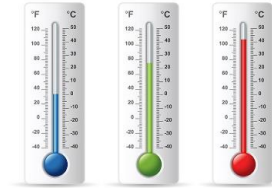


Team Response

- **“Junior Nurses” = Fresh graduates on probation**
- **Assessment:**
 - **Ipsative assessment**
 - **Formative assessment**
 - **Pre/Post discussion MCQ test**
- **Inform Nurses of objectives and set goals for them after every few days**
- **Flipped classroom will be used as they’ll read up at home before the next discussion**
- **Discuss the disease process and medications**
- **MCQ discussion and answer**
- **Application in clinical setting**
- **Provide feedback and reflection**

Peer Evaluation

Team	Student	Course
Things I Appreciated About Your Contribution	Things I wish You Would Improve	Thermometer rating (0-100)



Thermometer Rating Key:

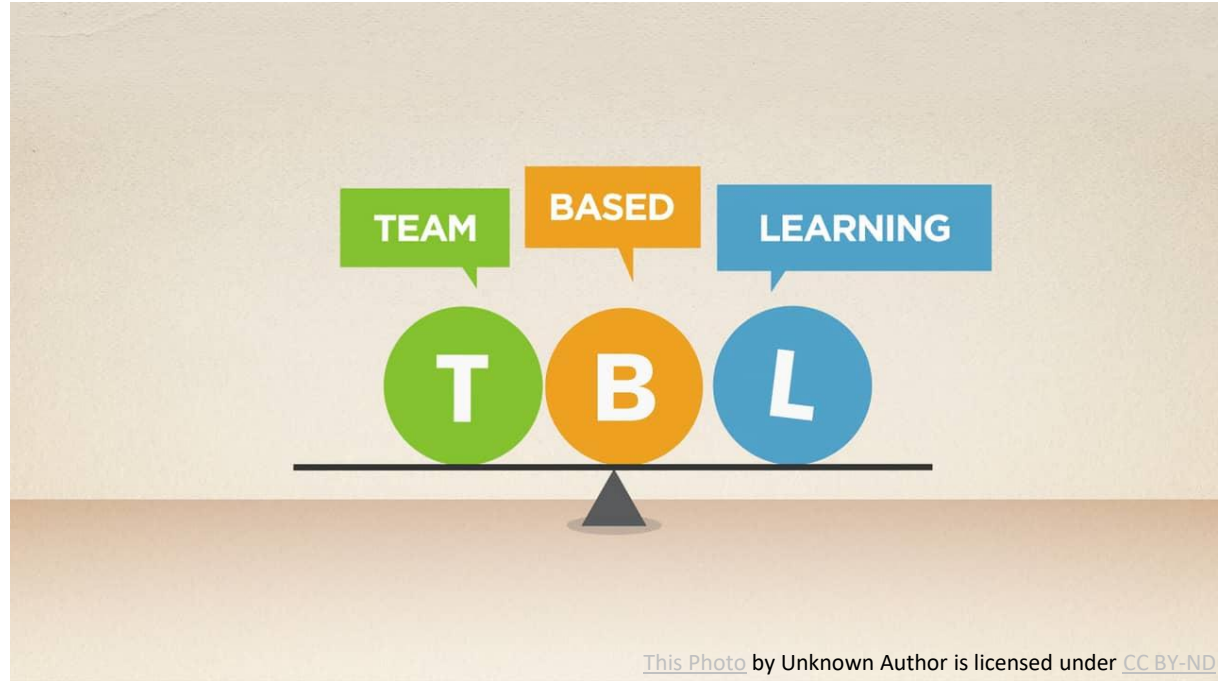
Cold: 0-35 Degrees: Does not contribute work with the team; does not join discussions; does not provide any input

Warm: 35-70 Degrees: Contributes work with the team; joins discussions; provides useful inputs

Hot: 70-100 Degrees: Dominates team; does not let others share their views; causes conflict in the team

Team Based Learning

'What is the impact of TBL on the engagement, learning and satisfaction of Singapore Bachelor of Nursing students'?



Team Based Learning

- Mixed Methods
- Ethics permission granted by the GU Human Research Ethics Committee
- Focus groups were conducted using semi-structured interview questions



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Team Based Learning

- Table 1: TBL Student Assessment Instrument descriptive statistics
- Subscale scores range from 6–30 (18 neutral), 16–80 (48 neutral), and 9–45 (27 neutral) for **accountability**, **preference**, and **satisfaction**. Higher scores indicate higher accountability, preference for TBL over lectures, and TBL satisfaction
- Moderately positive outcomes for all three subscales = moderately favourable overall experience with TBL vs lectures

Subscale	Mean (SD)
Accountability	22.2 (2.8)
Preference	52.7 (6.3)
Satisfaction	33.5 (5.1)
Overall	108.5 (12.2)

Team Based Learning

- Table 2 displays means and S.D. for questions rated on a scale from 1-10
- Higher scores indicate results in favour of TBL
- Modest positive results for all questions

Question (descriptive answer range)		Mean (SD)
How would you rate your experiences of the Team Based Learning approach overall? (poor to excellent)		6.8 (1.6)
How difficult/easy was it to adjust to learning via the TBL process? (very difficult to very easy)		6.2 (1.6)
How would you rate...? (poor to excellent)	...the engagement or interaction experienced in TBL classes?	6.7 (1.5)
	...your own level of learning from the TBL process?	6.6 (1.3)
Please rate the following TBL steps in terms of how useful each was to your learning. (not useful to highly useful)	The (self) preparation readiness assurance phase	6.3 (1.7)
	The individual (iRAT) and team test (tRAT) processes	6.4 (1.5)
	The IF AT test resources (Scratch card process)	6.5 (1.7)
How enjoyable were the individual (iRAT) and team test (tRAT) processes? (not at all to very enjoyable)		6.8 (1.7)

Team Based Learning

- *'[TBL] approach was very engaging and beneficial in understanding the course better'*
- *'[TBL] was good ...getting to know other team members during the PCN lecturer class. We actually create a group chat to share study information'*
- *'[TBL] used in teaching is a good approach. It engages students more than traditional teaching methods'*
- SEC Data



Team Based Learning

It helps to some extent and I like the pre-reading part in the sense that I can prepare myself before I come to do the lesson; the lecturer instead of going through everything he just pinpointed things that we don't understand. I like that structure but I think to some people they might not have the luxury of having the time to go through, read through and things like that.

It's a different learning approach. It's a lot self-directed and it's very different from our CHA module where we just have to listen to lecture and everything and then we get distracted once in a while. It's very hard to get distracted in team based learning because you know that the other person is expecting answers from you and you need to interact. Otherwise they would know that you're not participating.

Communication with other people. It improved our teamwork as well. To me it breaks my comfort zone so makes me a bit more daring to work with other people and no matter in what kind of situation maintain your professional communication whether you like it or not. So it pushed a little bit more.

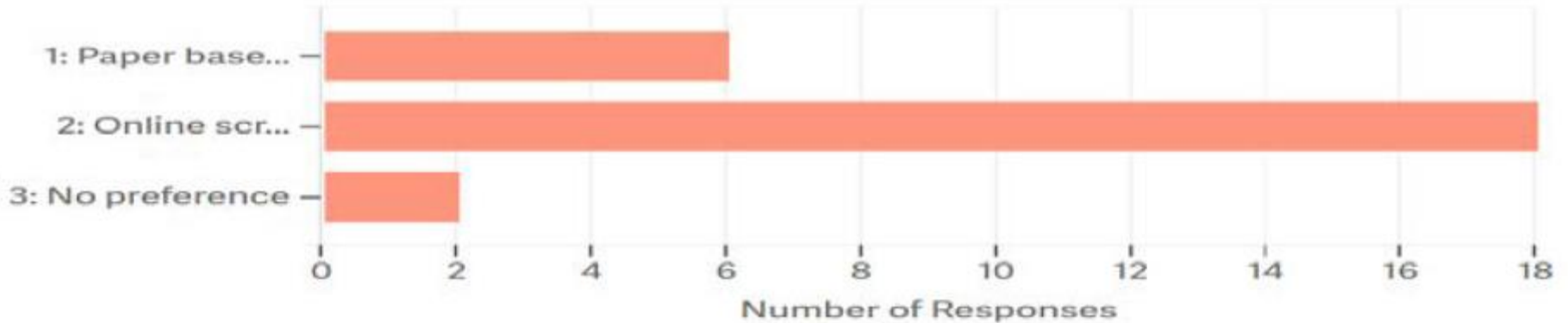
Focus Group Data

Individual V Team test results

Test	Individual	Group	Difference
1	27.6	35.8	7.9
2	29.8	37.9	7.8

Team Based Learning

Preference



Results: Average total score from individual to team increased by 1.61.

Team Based Learning



References

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