POSTGRADUATE

Teaching Practical Skills

Jon Cornwall

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Early Learning in Medicine

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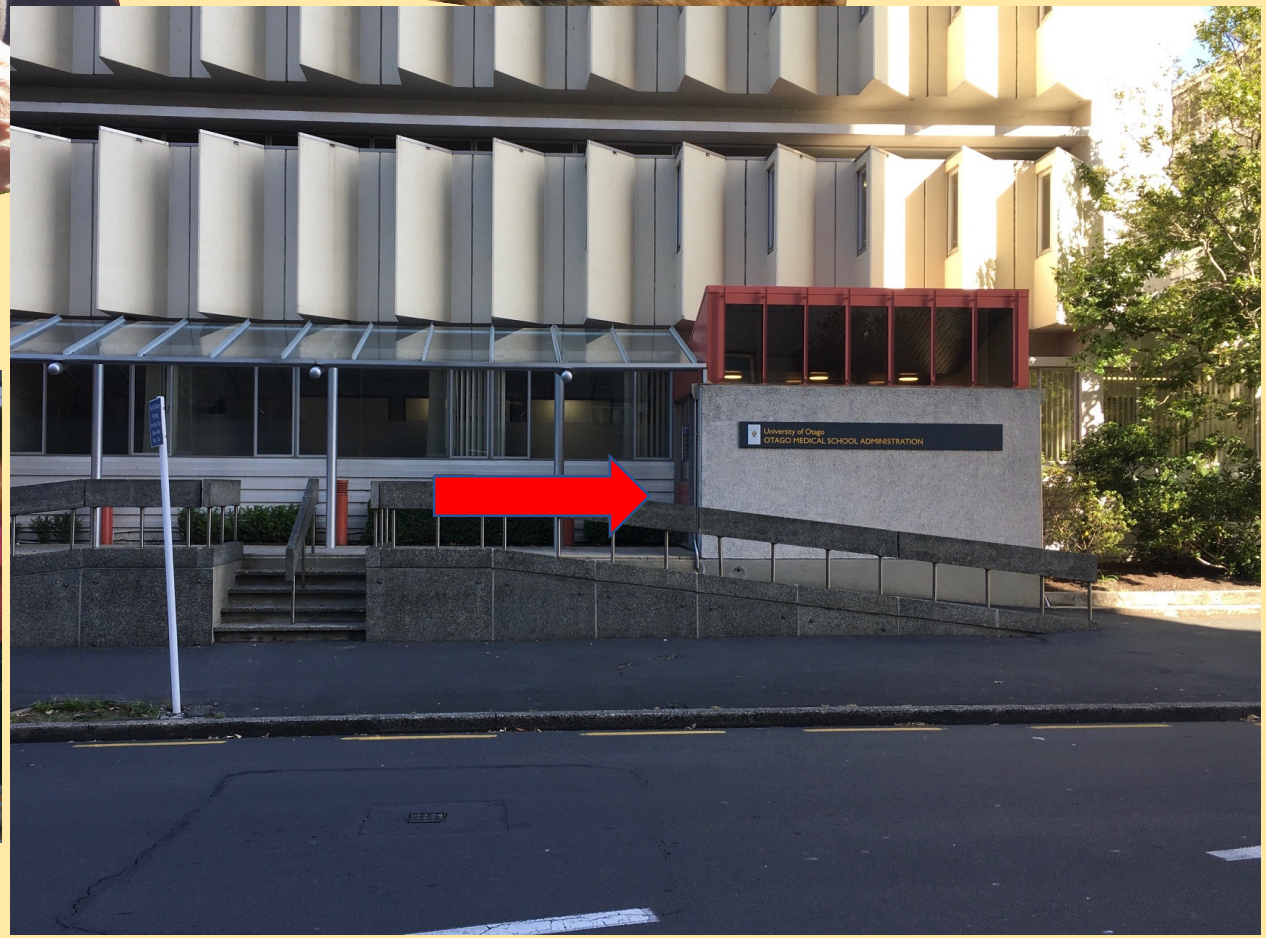
21 July 2021

Who is Jon?

Education Advisor ELM
Physiotherapist
Bioethicist
Lover of fine coffee, Islay single malts
Disliker of German opera



See one, do one, teach one

And other things

Today we will…..

Focus on: The ‘doing’ **Less focus on: Different tools / modes**

- **Aims:** Review theory around teaching practical skills, reflect on own practice, explore experiences and tips of other teachers

- **Objective:** Develop improved understanding of factors contributing to successful teaching of practical skills

Today we will…..

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The hour goes like this…..

1/3 – Background, theory, evidence, food for thought
1/3 – Groups, discussion around theory / practice, experience
1/3 – Expert panel, Q&A

[break in middle]

Expert Panel - Special Guests

- Dr Ruth Barnett – ELM Clinical Skills convenor, UoO
- Nick Phillips – IT Manager, UoO
- Dr Heleen Du Plessis – School of Performing Arts, UoO
- Alister George – Otago School of Physiotherapy, CHC

First third Background, theory, evidence

- Revisit good educational practice / ELM strategy guidelines
- Theories: Halsted, Peyton, George & Doto; Kolb's Model
- Evidence for 'stepwise' theories
- Other things to consider

What are the additions to your personal Toolkit?

Practical Teaching Sessions - Breaking it Down

- Before you start: planning / preparation
- During the session: structure, delivery
- After the session: repetition, upskilling, debriefing, revisiting

https://www.fiercehealthcare.com/practices/practice-lifestyle-changes-high-blood-pressure

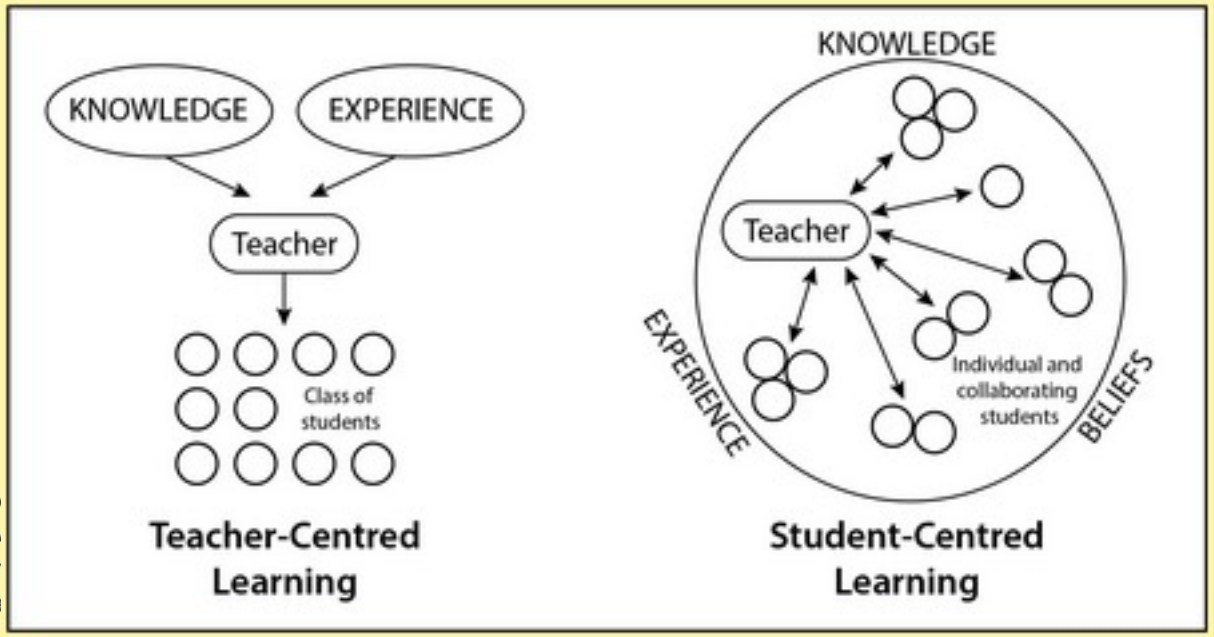
Other components to consider (but not today)

- How often? How long? [‘deliberate practice’]
- High fidelity v low fidelity (feel ‘more real’ v ‘less real’)
- Virtual v real
- Simulation / standardized patients
- Video feedback
- Recommendations for practice?
- Testing and retraining schedule?

ELM Teaching Strategy 2021: A Focus on Student-Centred, Active Learning involving Blended Delivery

The COVID-19 crisis of 2020 illuminated multiple elements surrounding the quality of teaching delivery in ELM. The rapid move to online delivery for many courses, and subsequent experiences of staff and students, indicated that improvements in teaching quality within ELM were not only entirely possible, but desirable and necessary. This move was necessary to ensure that students were given the best possible platform for learning in a course that is already difficult and replete with challenges. To this end, ELM is continually looking to move current teaching practice in line with international 'best practice' pedagogy that looks to incorporate three key elements of teaching practice in the sessions that are delivered. These three key elements include activities being student-centred, have delivery of material that includes opportunities for active learning, and provides experiences for students that incorporates blended delivery of teaching content.

ELM Teaching Strategy 2021: A Focus on Student-Centred, Active Learning involving Blended Delivery



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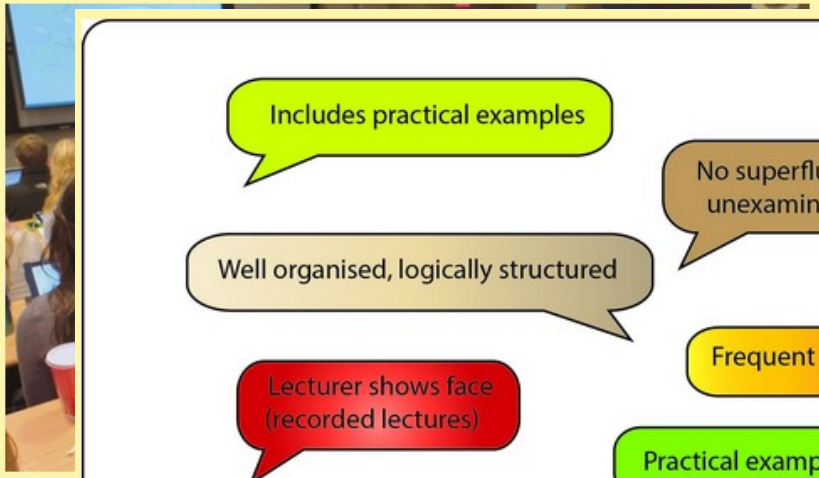

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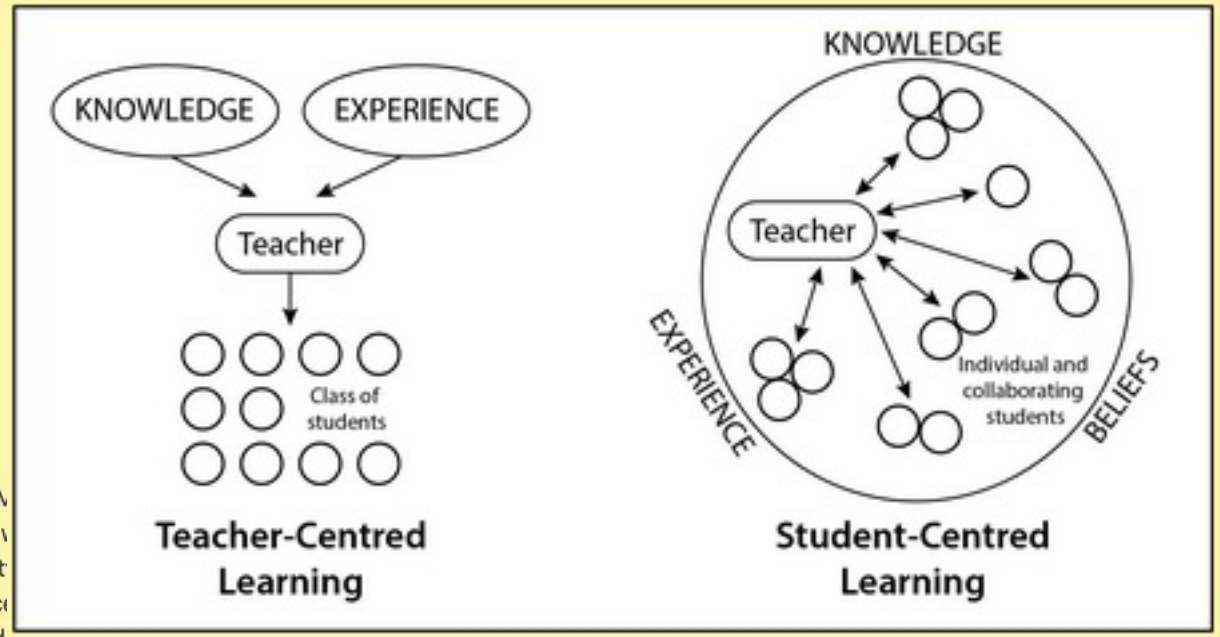

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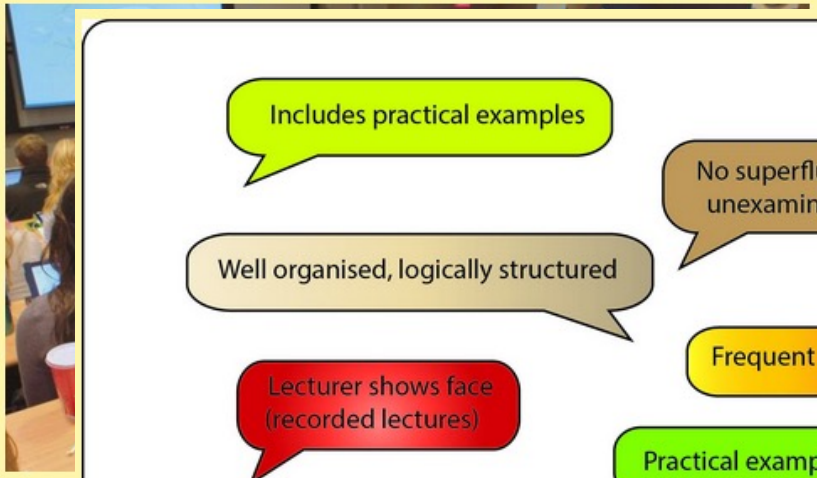

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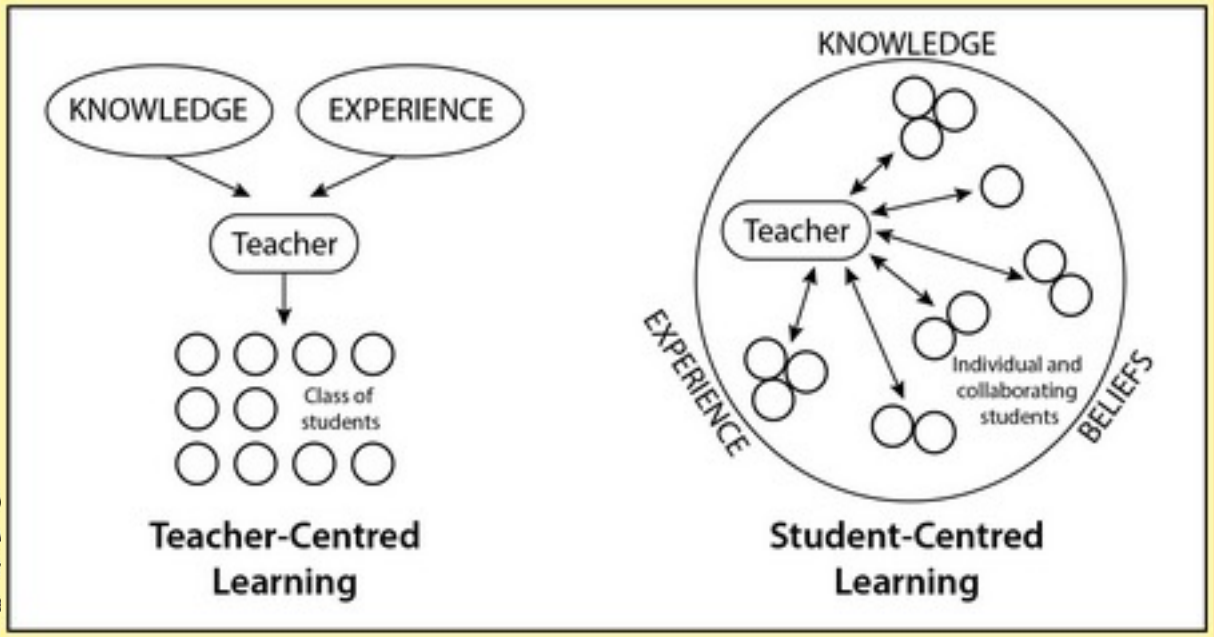

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Integral Components of any ELM Teaching Session

The choice of content delivery mode therefore depends on many different factors, however there are some key elements to keep in mind when planning and delivering sessions.

- Make the session student-centred, involve active learning, and ensure blended delivery
- Adopt a delivery mode that can accomplish objectives
- Emphasize objectives / key points a) at the beginning, b) as you get to them, c) as a summary at the end
- Limit the main points to five or fewer
- Create effective visuals, analogies, interactive content, demonstrations, and examples to reinforce the main points
- Integrate clinically relevant examples into the session, perhaps to tie in key points or scaffold difficult concepts

Theories around teaching of practical skills

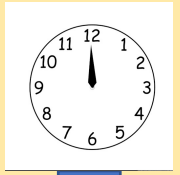
Herman Boerhaave (1668-1738): Founder of clinical teaching and modern academic hospital

"Healthcare skills are complex requiring multiple steps"

Halsted: See one, do one, teach one (~1900)

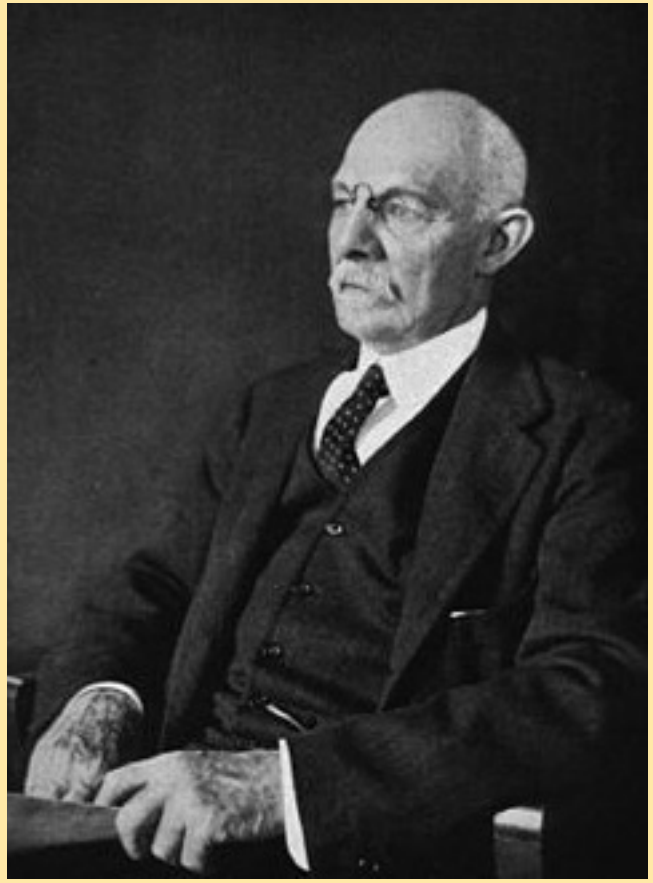
Peyton: Four step process (1998)

George & Doto: Five step process (1997, 2001)



(with a little educational theory added in)

William Halsted, MD 1852-1922

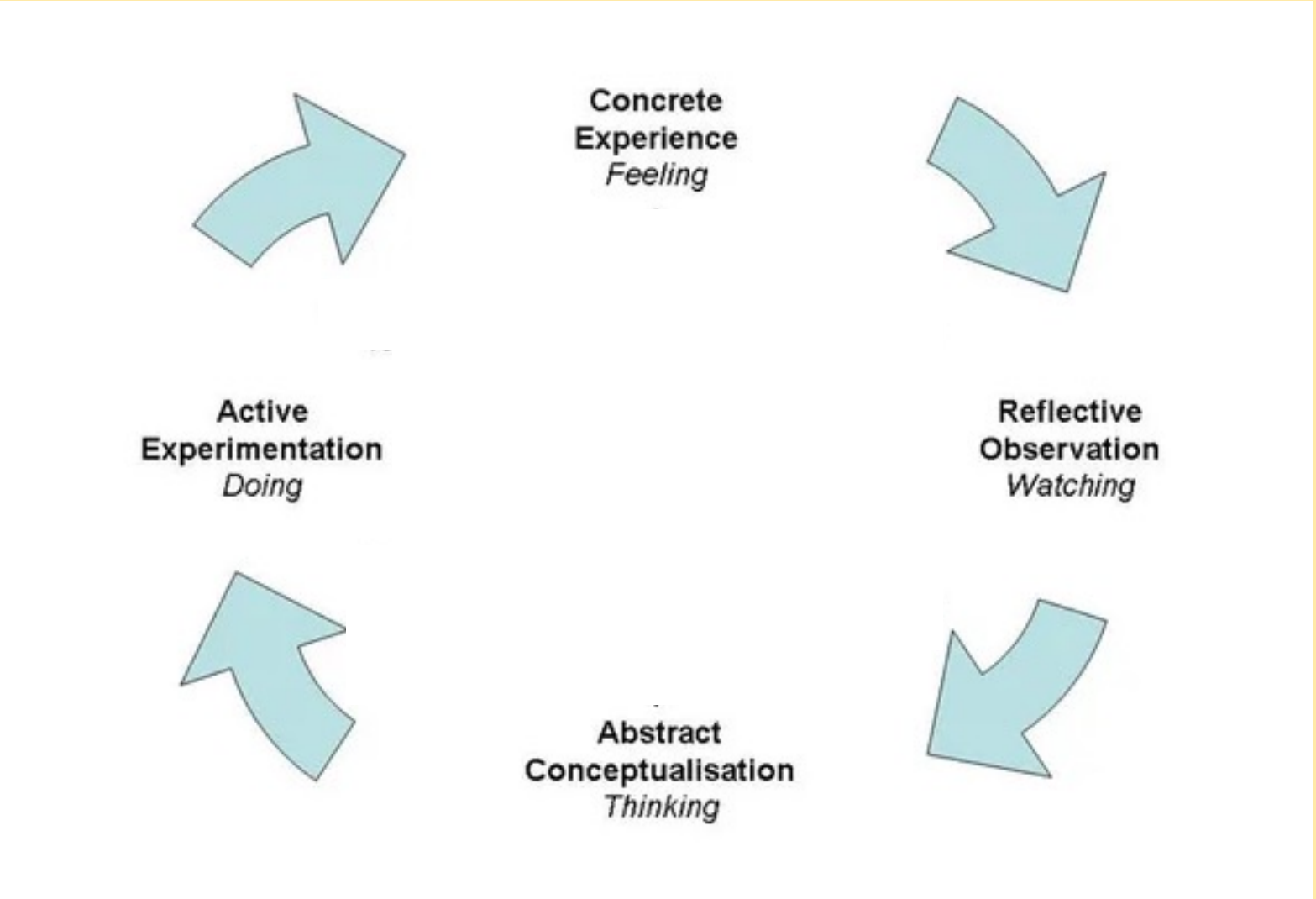


- Johns Hopkins founding Professor
- ‘See one, do one, teach one’ [surgical focus] ~1903
- Invented radical mastectomy
- Addicted to cocaine and morphine (but wasn’t illegal!)

Criticisms

- Doesn’t fit adult learning theory
- Patient safety

Kolb’s Reflective (Experiential) Model of Learning (1984)



[Humanistic / Constructivist theory of learning]

https://www.simplypsychology.org/learning-kolb.html

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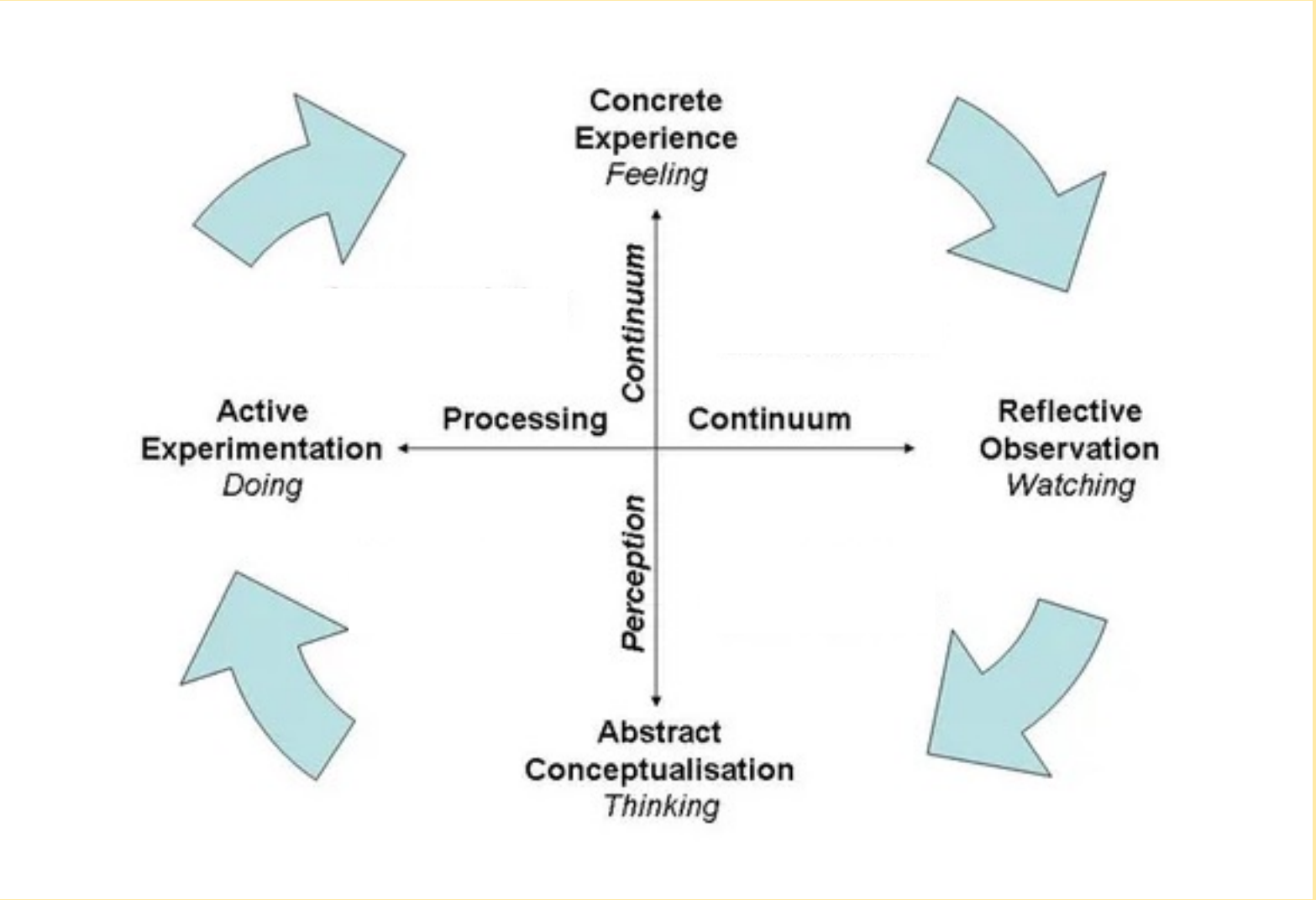

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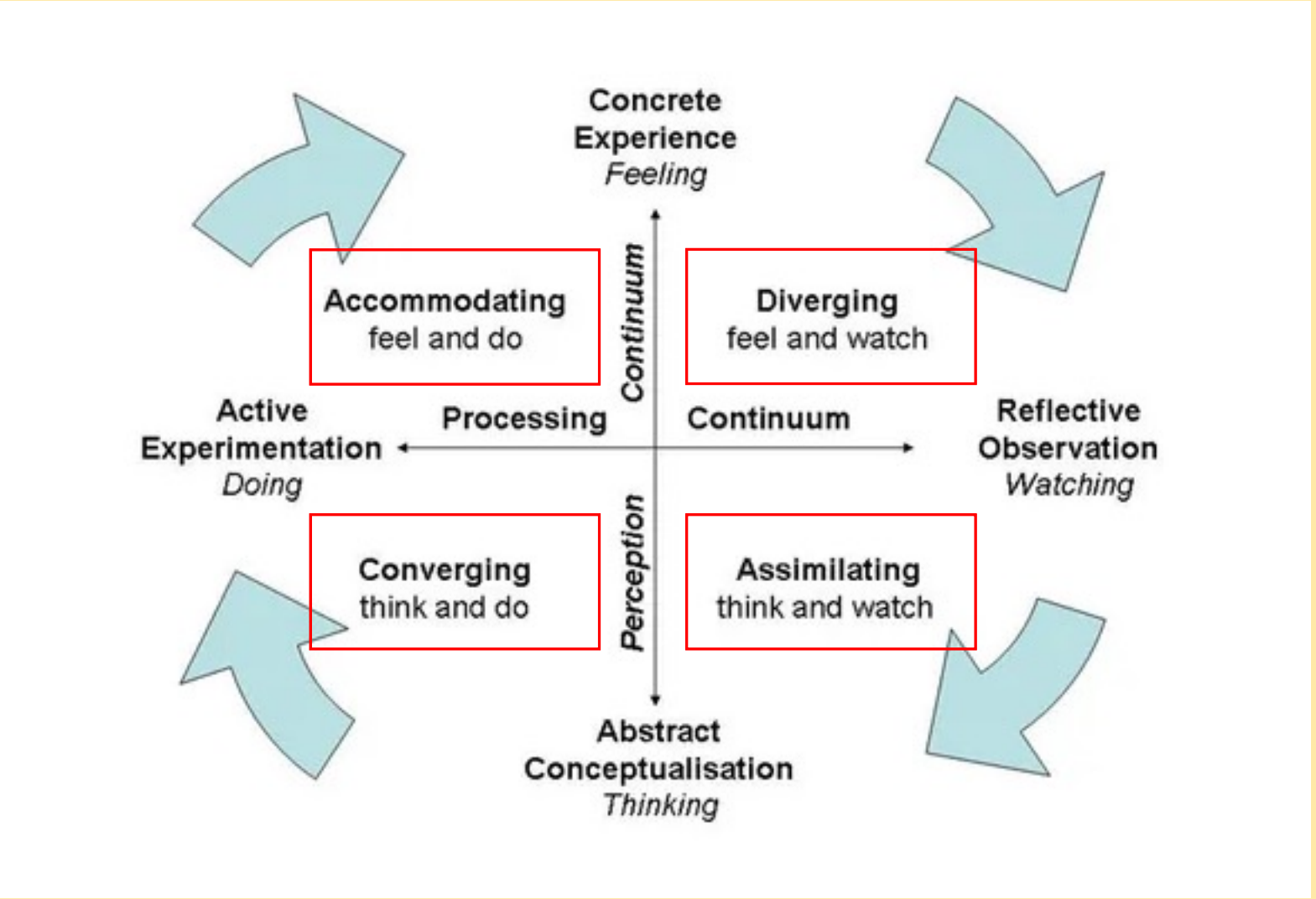
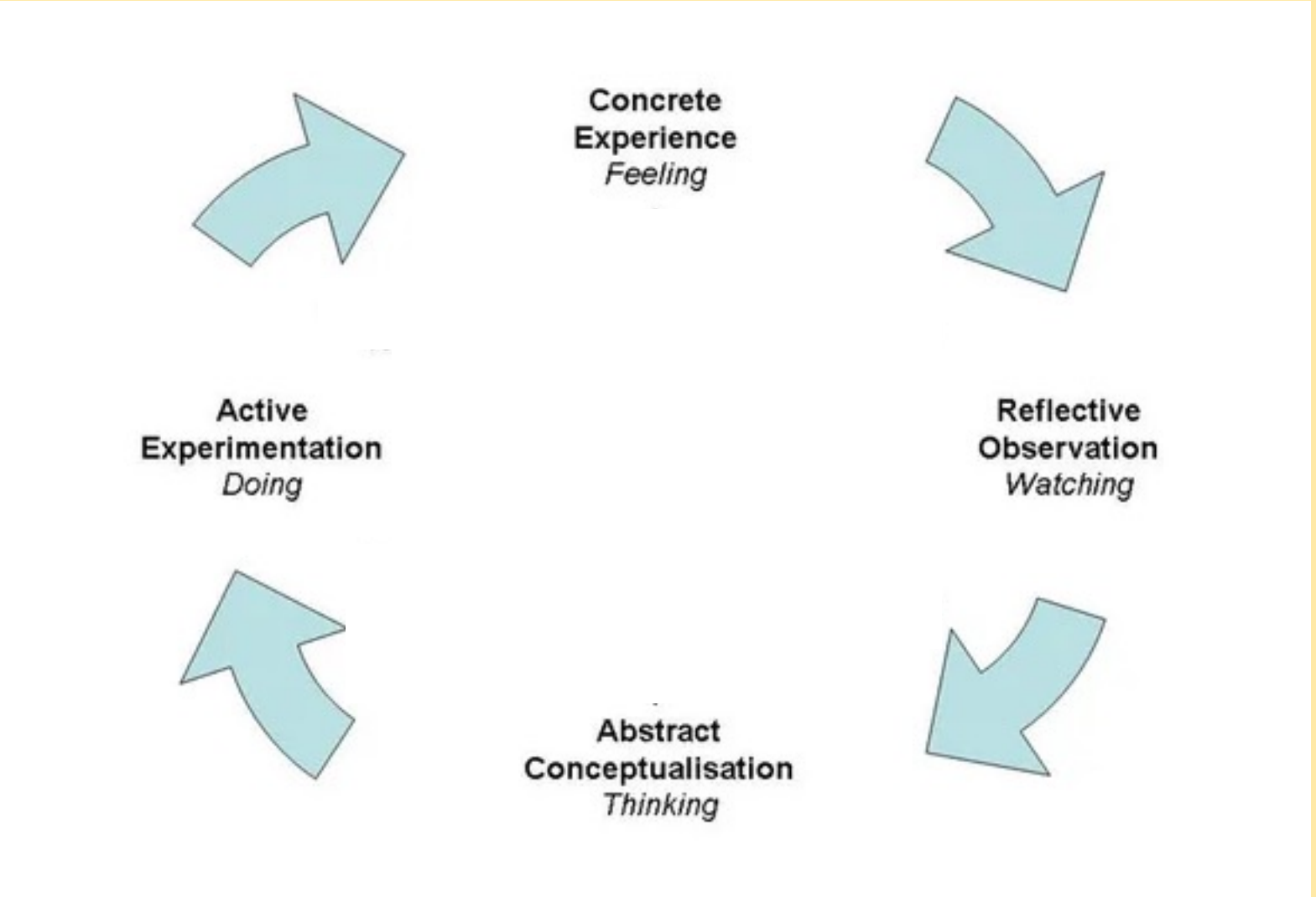


Important: the four learning preferences / styles can guide how teaching is most effectively delivered

https://www.simplypsychology.org/learning-kolb.html

Kolb's Reflective (Experiential) Model of Learning (1984)

Do One



See One

Teach One

https://www.simplypsychology.org/learning-kolb.html

Rodney JW Peyton

(Peyton's Four Step Process)

- "Widely regarded as the World's #1 surgical coach…"
- Trauma surgeon
- Qualified lawyer
- "Mr. Peyton's prowess in the medico-legal domain, blended with his avid experience in both military and civilian trauma has been instrumental in him being regarded as an authority on medico-legal issues."
- Publications…..

https://www.rpeyton.com/publications

Rodney JW

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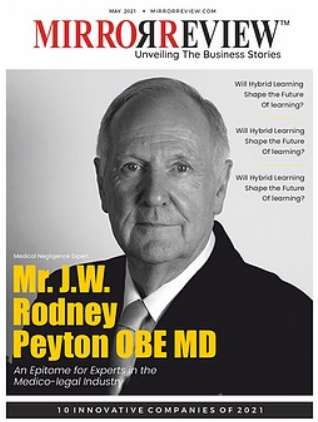
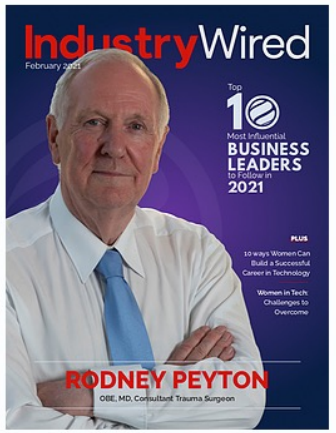
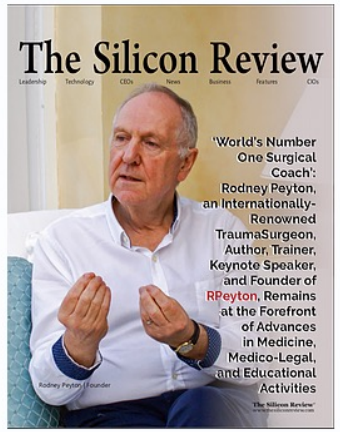
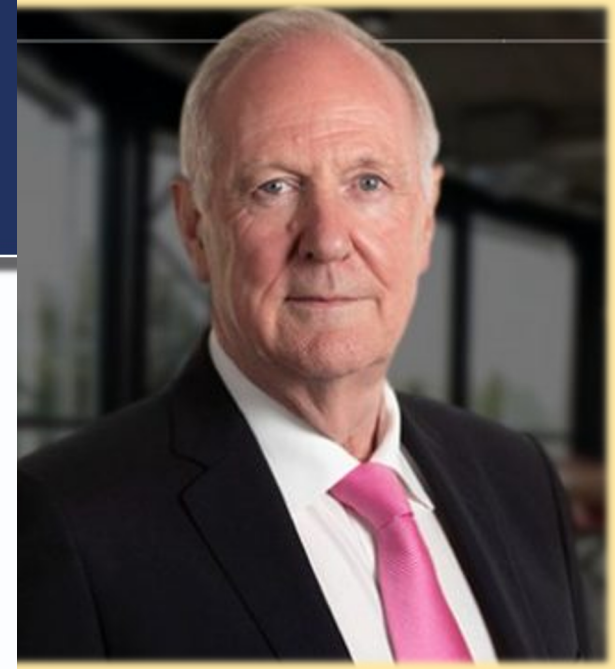


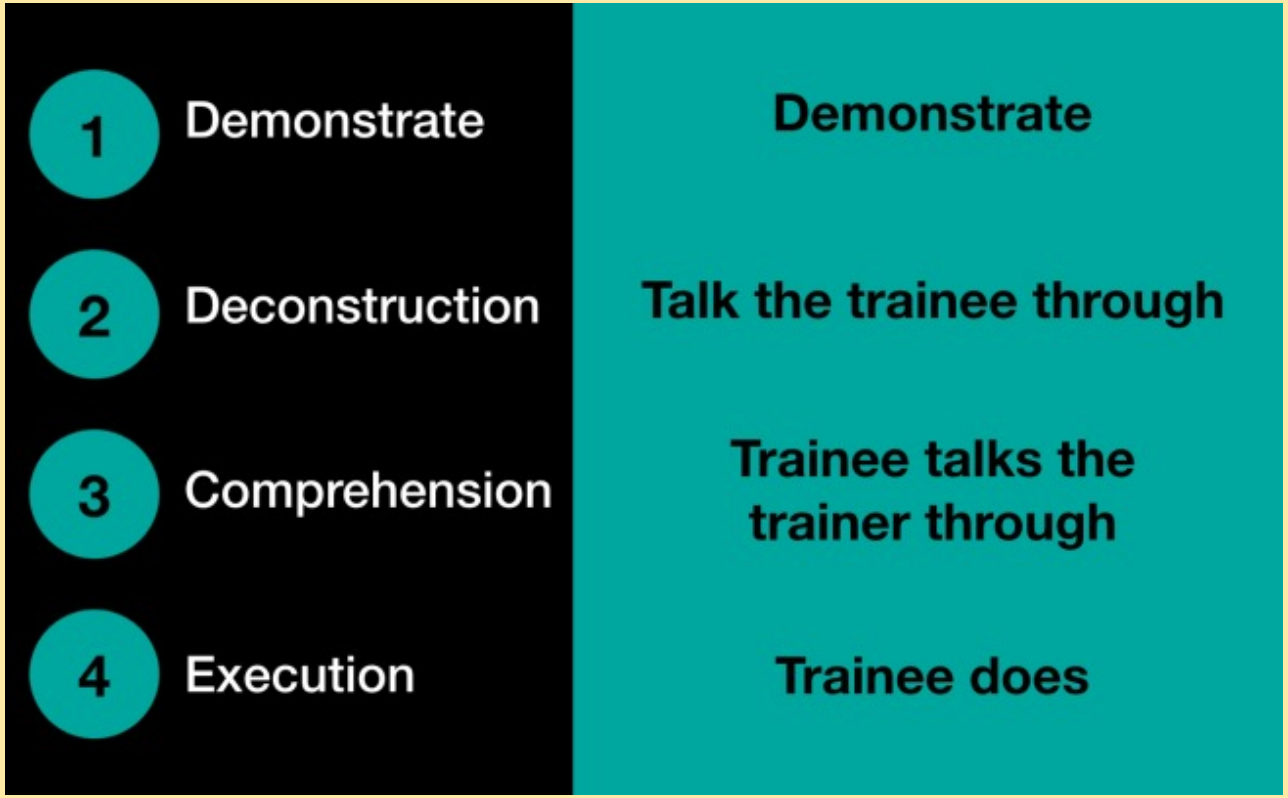






https://www.rpeyton.com/publications

Peyton’s Four Step Process 1998



[Actually, please feel sorry for Walker – it’s ‘Walker and Peyton, 1998’]

https://joziem.wordpress.com/2018/05/10/skills-training/

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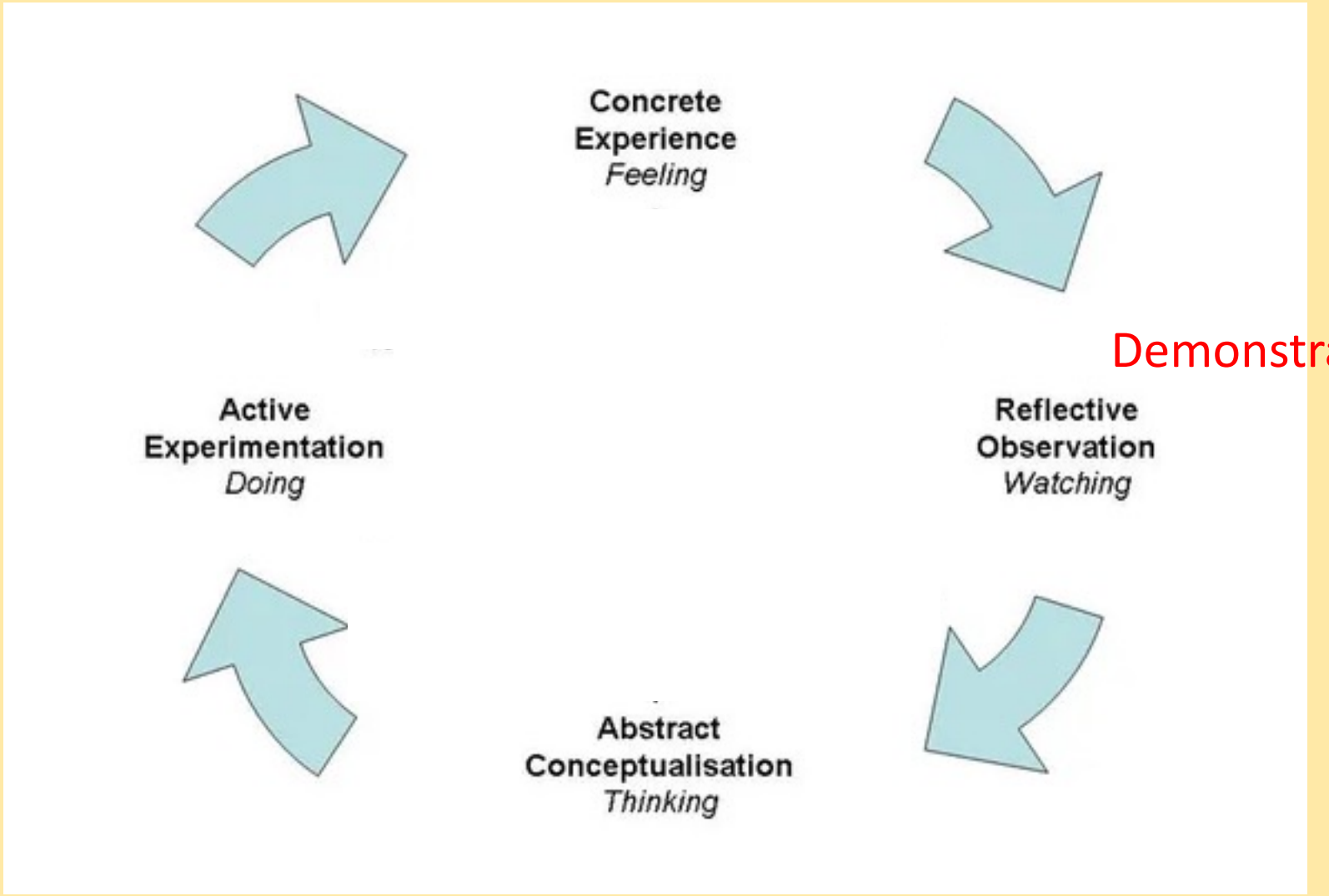

Execute

Demonstrate / Deconstruct

Do One

See One

Comprehend

Teach One

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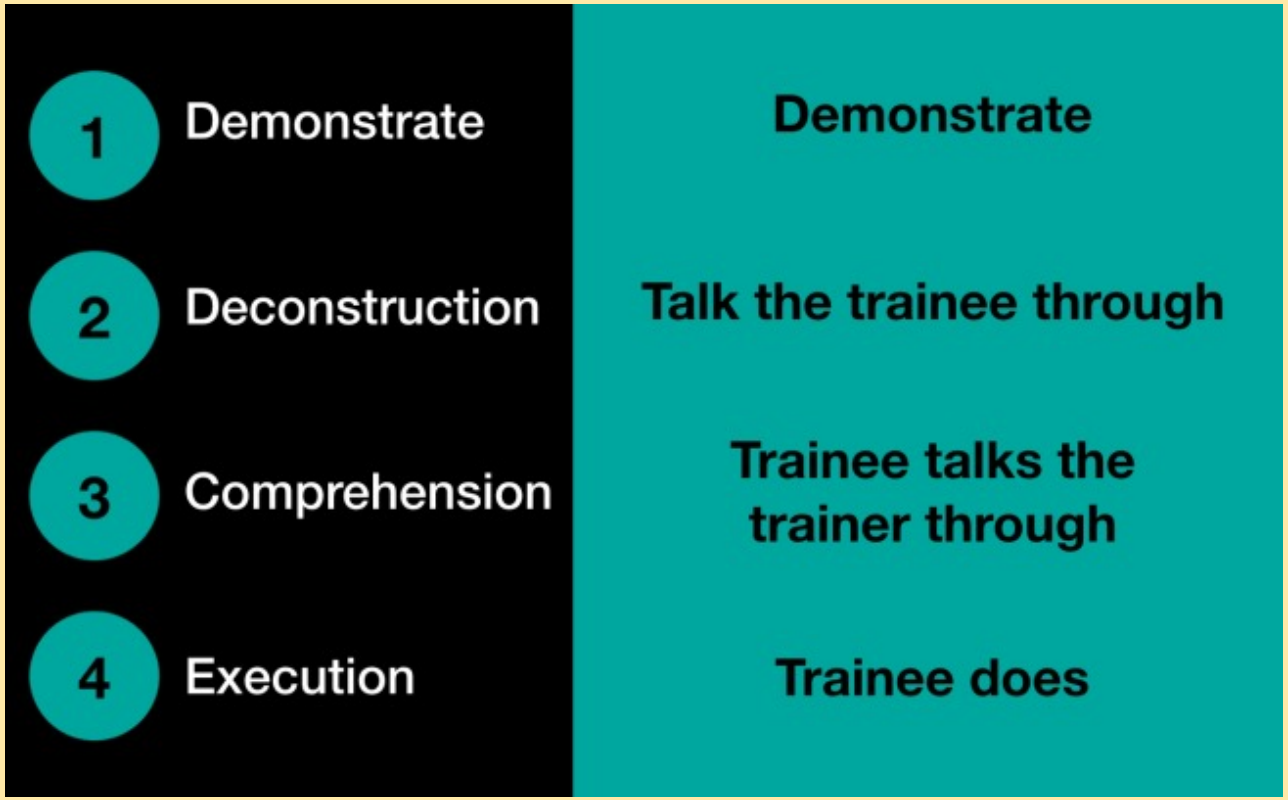
George & Doto (1997, 2001)

1. Explain why needed and how used clinically
2. Silent demonstration
3. Repeat slowly and describe
4. Student talks through
5. Student performs

Peyton's Four Step Process



George & Doto (1997, 2001)

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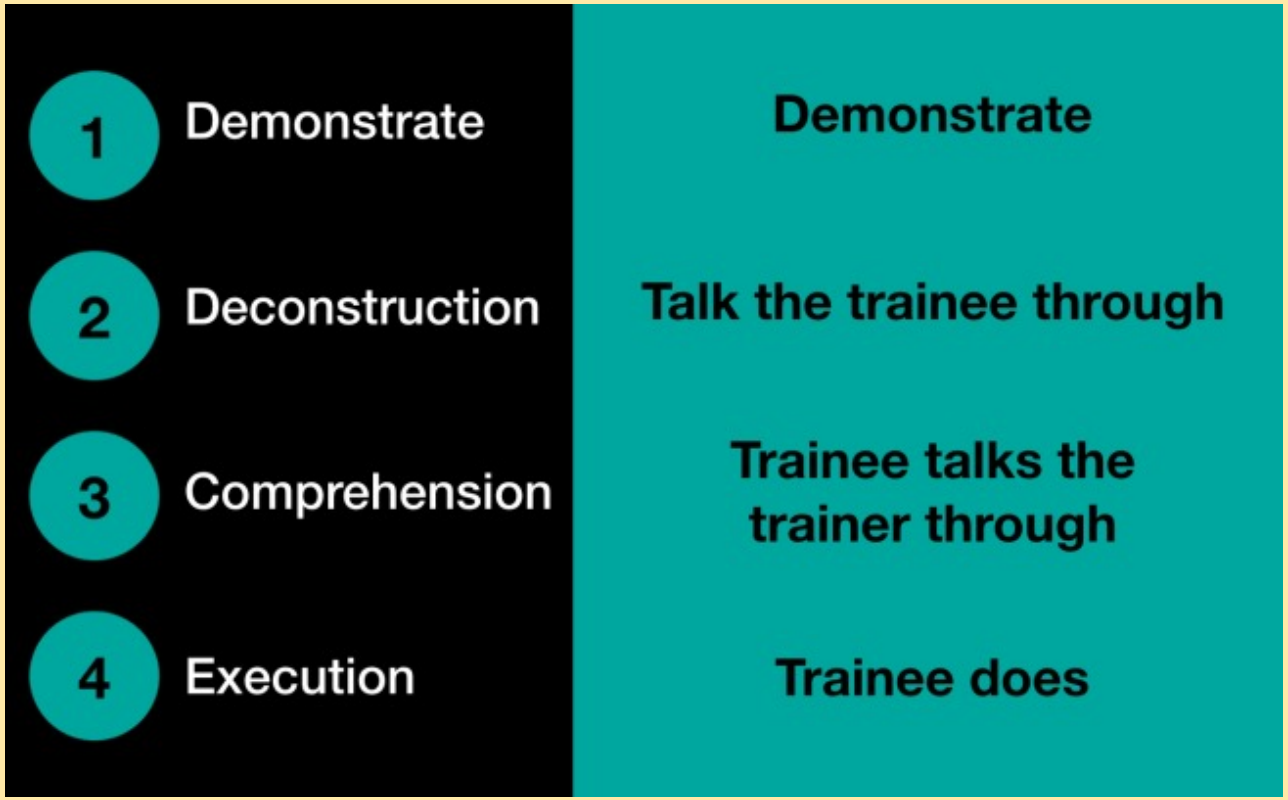
5. Student performs
6. **Feedback to / from student (Kolb)**

Peyton's Four Step Process



[Based on assumption baseline status is adequate / appropriate]

[See 'Giacomino et al. 2020']

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Peyton's Four Step Process

Cornwall and Ali Six Step Process

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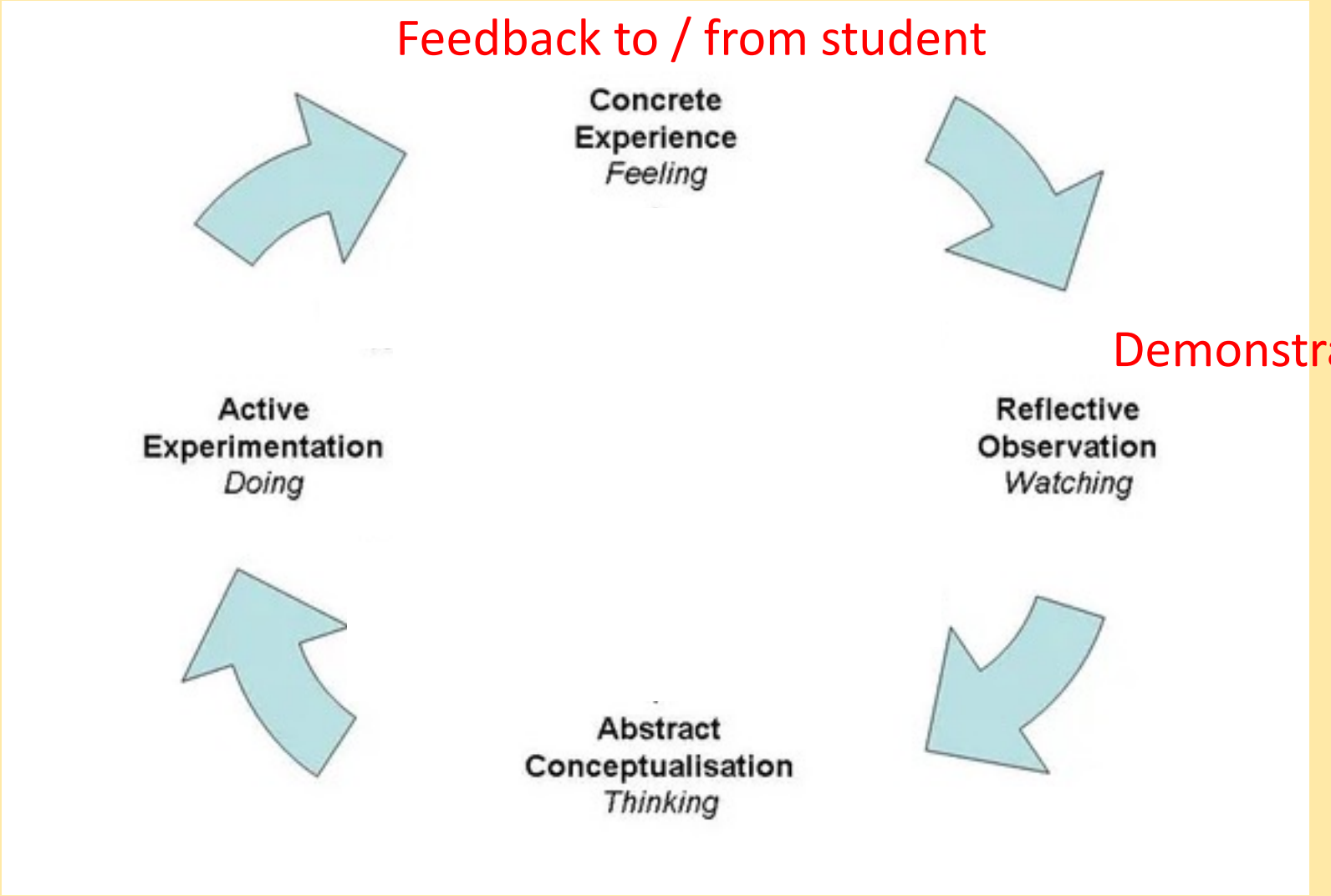
[See 'Giacomino et al. 2020']

Kolb's Reflective (Experiential) Model of Learning (1984)

Feedback to / from student



Execute

Demonstrate / Deconstruct

Do One

See One

Comprehend

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Evidence supporting stepwise approach as being ‘better’?

Yes (vs Halsted mostly) for teaching complex skills; low fidelity unclear

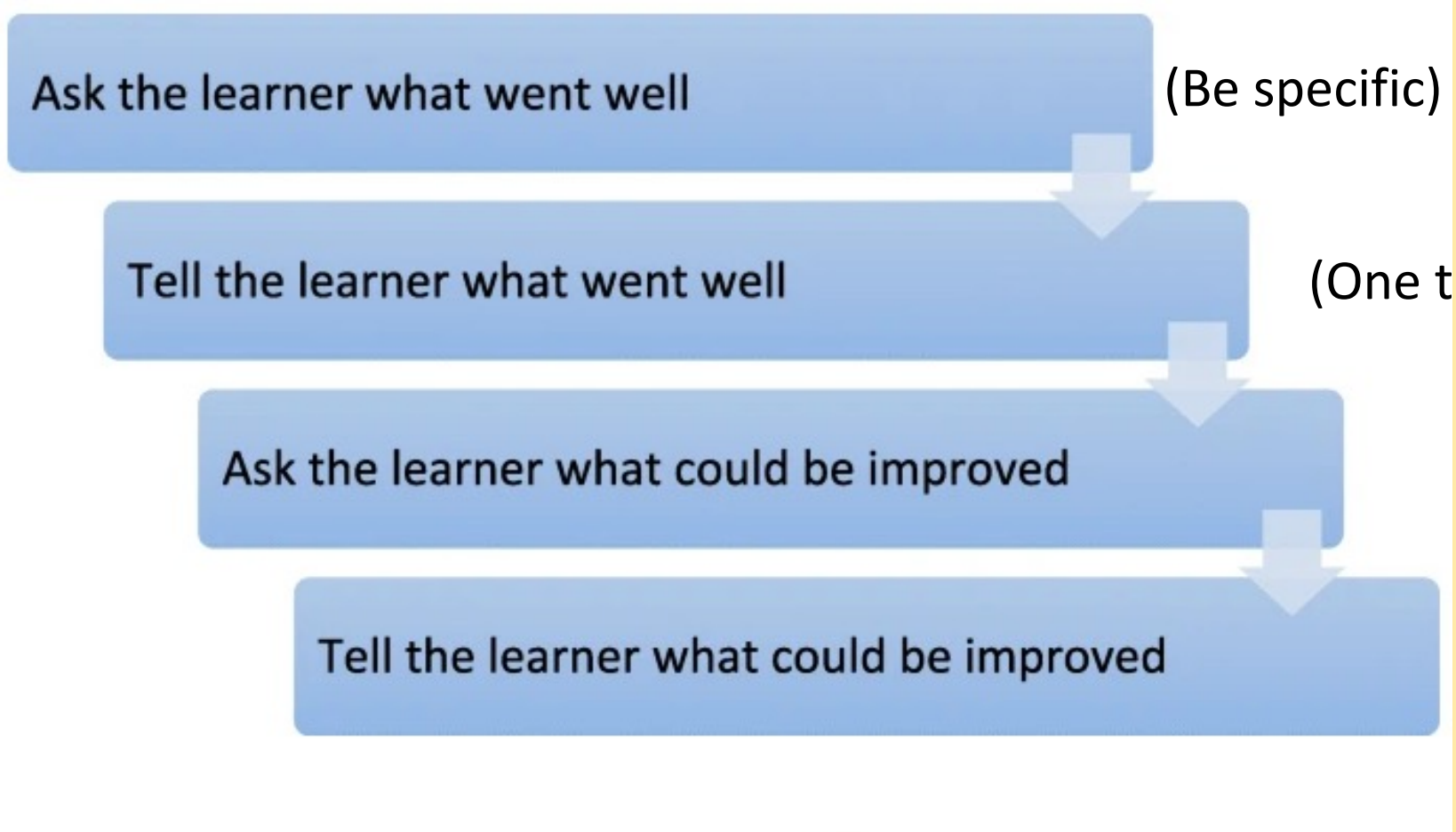
Vogel et al. 2016:
UG Med Ed; structured delivery, feedback, SDL all effective
Multimedia training has utility

Giacomino et al. 2020:
Health Prof Ed; ‘Peyton’s approach’ is effective by staff; by student / peer teaching, effect less clear

Higgins et al. 2021 (simulation):
Simulation effective sx skills (and superior to no training)
Confirms ‘unless you use it, you lose it’

Feedback

[What is ‘accurate’ feedback, and what does it look like?]

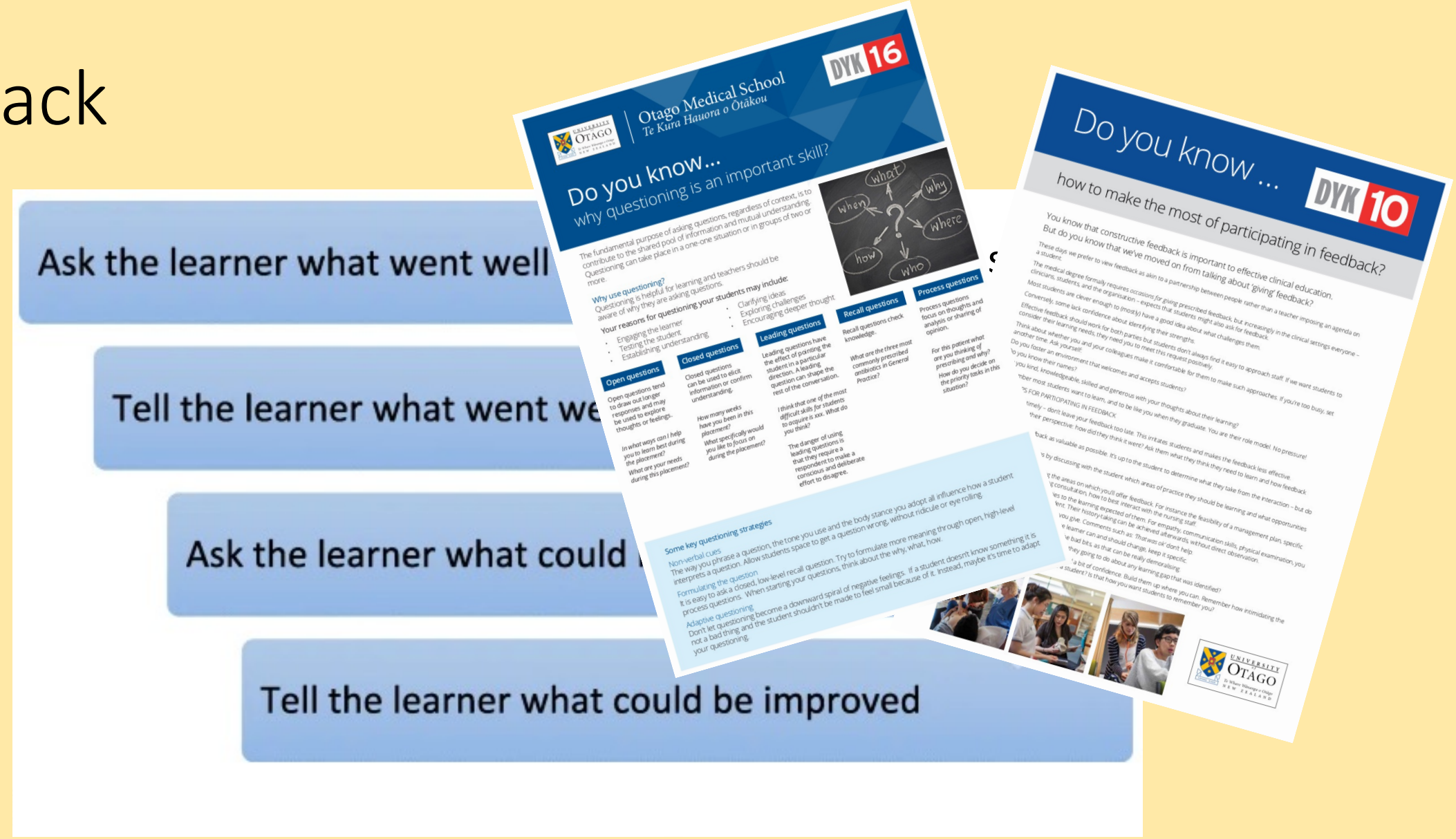


(Be specific)

(One thing at a time!)

Burgess et al. BMC Medical Education 2020, 20(Suppl 2):458

Feedback



Burgess et al. BMC Medical Education 2020, 20(Suppl 2):458

Feedback

How about feedback on your own performance?

- Ask learner(s) verbally
- Ask learner(s) via email, survey
- Have a colleague watch a brief part of the session (perhaps specify something you would like observed)
- Video record yourself (ask permission of students!)
- Perhaps ask ***specific*** question about performance (not general)

Stop for a second

1. Say ‘hello’ VERY QUICKLY! Introduce yourself briefly: who, where, what you do

2. What’s the main point from the theories presented that you will take away?

Breakout One - 4 Minutes

Stand, stretch, move, refuel

Turn your camera off, mute your mic.

Stand up, move around.

https://handandstone.ca/stand-up-and-stretch/

Second third

What do students say?

- What makes a practical teaching session really good?
- What sorts of things make it not as good as it could be?
- What is the best advice you could give to someone teaching you practical skills?

https://www.dietdoctor.com/why-calorie-counters-are-confused

Stop for a second

From what you've heard from the students, what is the main thing that resonated with you as a learner?

Breakout Two - 4 Minutes

Summarizing the student voice

- Don’t assume all students are the same level
- Make sure all can see
- Explain clearly what and why / Make clinically relevant
- Demonstrate clearly
- Have different strategies for teaching
- Correct mistakes immediately
- Allow time for repetition
- Supplement with explanations / resources as required

Third third! Q&A with panel

- Dr Ruth Barnett – ELM Clinical Skills convenor, UoO
- Nick Phillips – IT Manager, UoO
- Dr Heleen Du Plessis – School of Performing Arts, UoO
- Alister George – Otago School of Physiotherapy, CHC

In summary

- Common frameworks of teaching practical skills exist

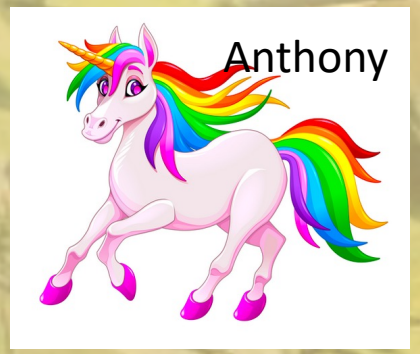
- Structured teaching following stepwise delivery is effective
- There are common elements to teaching which span tasks and disciplines

- Other elements supplement effectiveness

Links, references

- Education Unit resources: https://www.otago.ac.nz/oms/education/mbchb/staff/resources/
- ELM Curriculum Delivery and Teaching Strategy: https://medschool.otago.ac.nz/course/view.php?id=1918
- Burgess A, et al. Tips for teaching procedural skills. BMC Med Ed. 2020 20(Suppl 2):458
- Ericsson K. Deliberate practice and acquisition of expert performance: a general overview. Acad Emerg Med. 2008;15:988-94
- Walker M, Peyton JWR. (1998). Teaching in theatre. *Teaching and learning in medical practice. Rickmansworth, UK: Manticore Europe Limited*, 171-180.
- George JH, Doto FX. A simple five-step method for teaching clinical skills Fam Med. 2001 Sep;33(8):577-8.
- Giacomino K, et al. 2020. The effectiveness of the Peyton's 4-step teaching approach on skill acquisition of procedures in health professions education: A systematic review and meta-analysis with integrated meta-regression. PeerJ 8:e10129 http://doi.org/10.7717/peerj.10129

Thank you



Special thanks to:

Heleen Du Plessis
Nick Phillips
Ruth Barnett
Alister George

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SAPERE AUDE

Te Whare Wānanga o Otāgo

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