

POSTGRADUATE



# Teaching Practical Skills

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Early Learning in Medicine

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21 July 2021



# Who is Jon?

**Education Advisor ELM**

Physiotherapist

Bioethicist

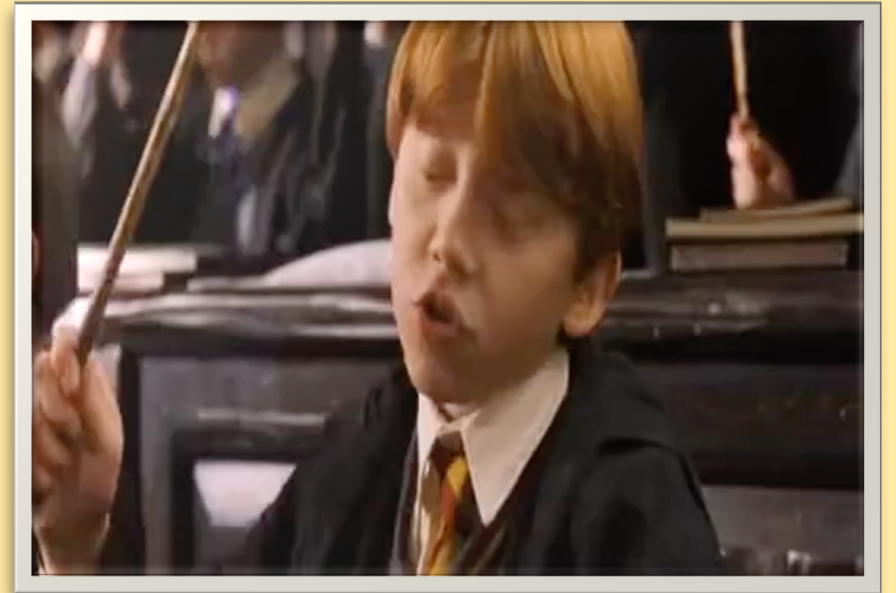
Lover of fine coffee, Islay single malts

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



# 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



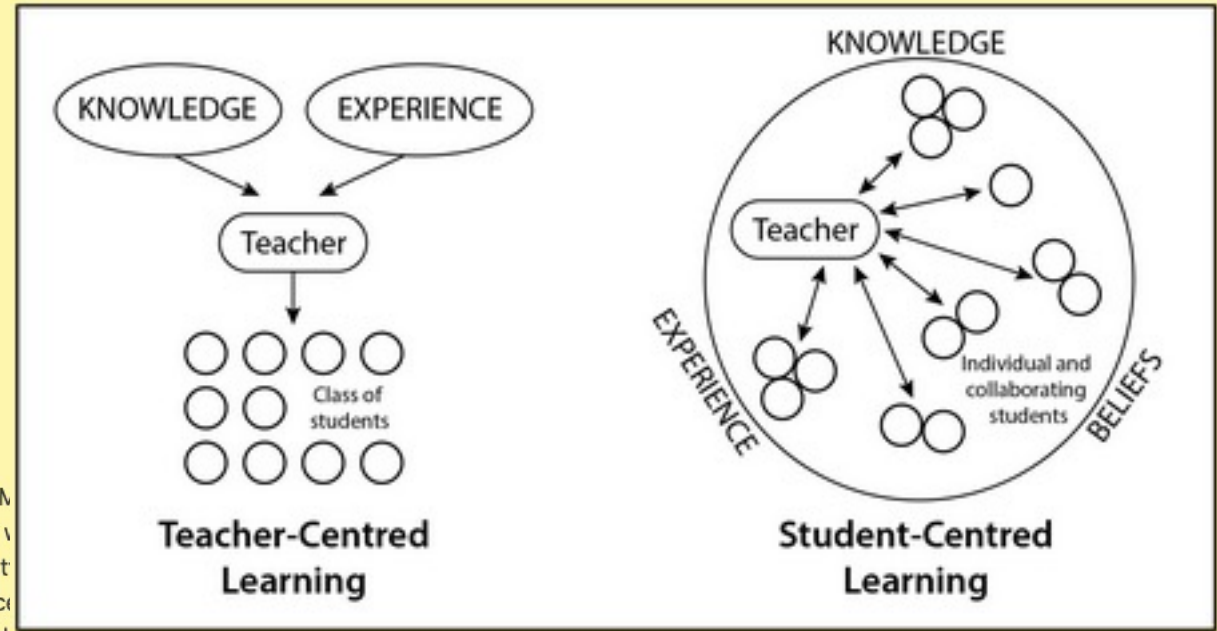
The COVID-19 crisis of 2020 illuminated multiple elements surrounding the quality of teaching delivery in ELM. The rapid move to online delivery for many courses, and subsequent experiences of staff and students, indicated that improvements in teaching quality within ELM were not only entirely possible, 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



The COVID-19 crisis of 2020 illuminated multiple elements surrounding the quality of teaching delivery in ELM courses, and subsequent experiences of staff and students, indicated that improvements in teaching quality were desirable and necessary. This move was necessary to ensure that students were given the best possible platform that was challenging and replete with challenges. To this end, ELM is continually looking to move current teaching practices to a pedagogy that looks to incorporate three key elements of teaching practice in the sessions that are delivered. These three key elements include activities that are student-centred, have delivery of material that includes opportunities for active learning, and provides experiences for students that incorporates a blended delivery of teaching content.

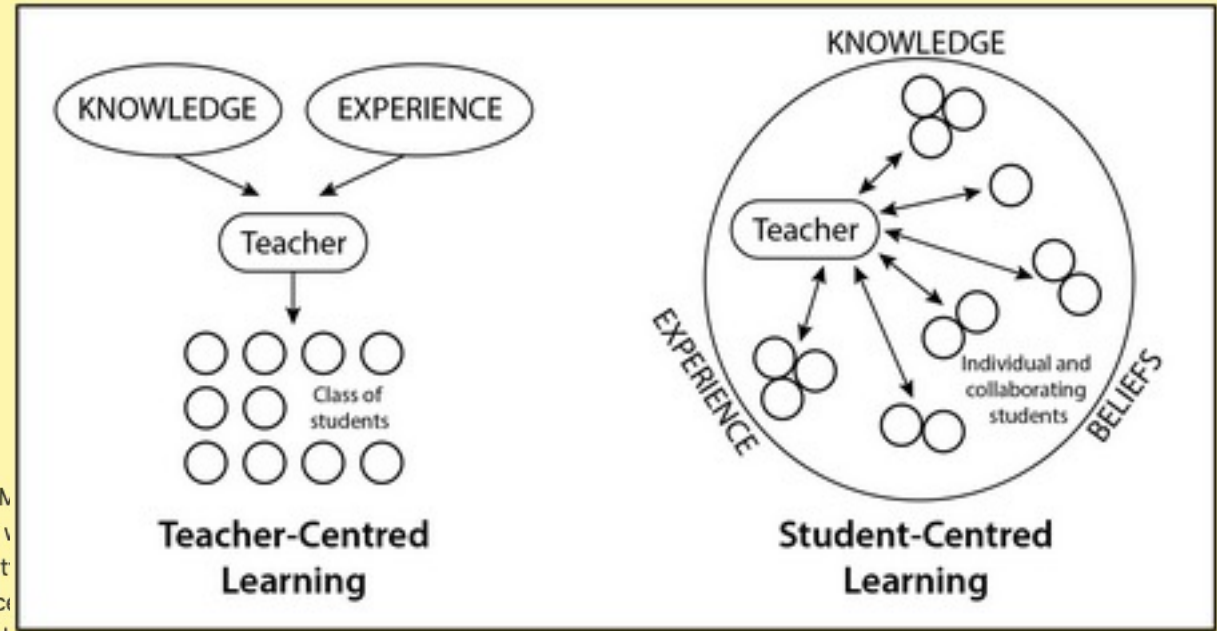
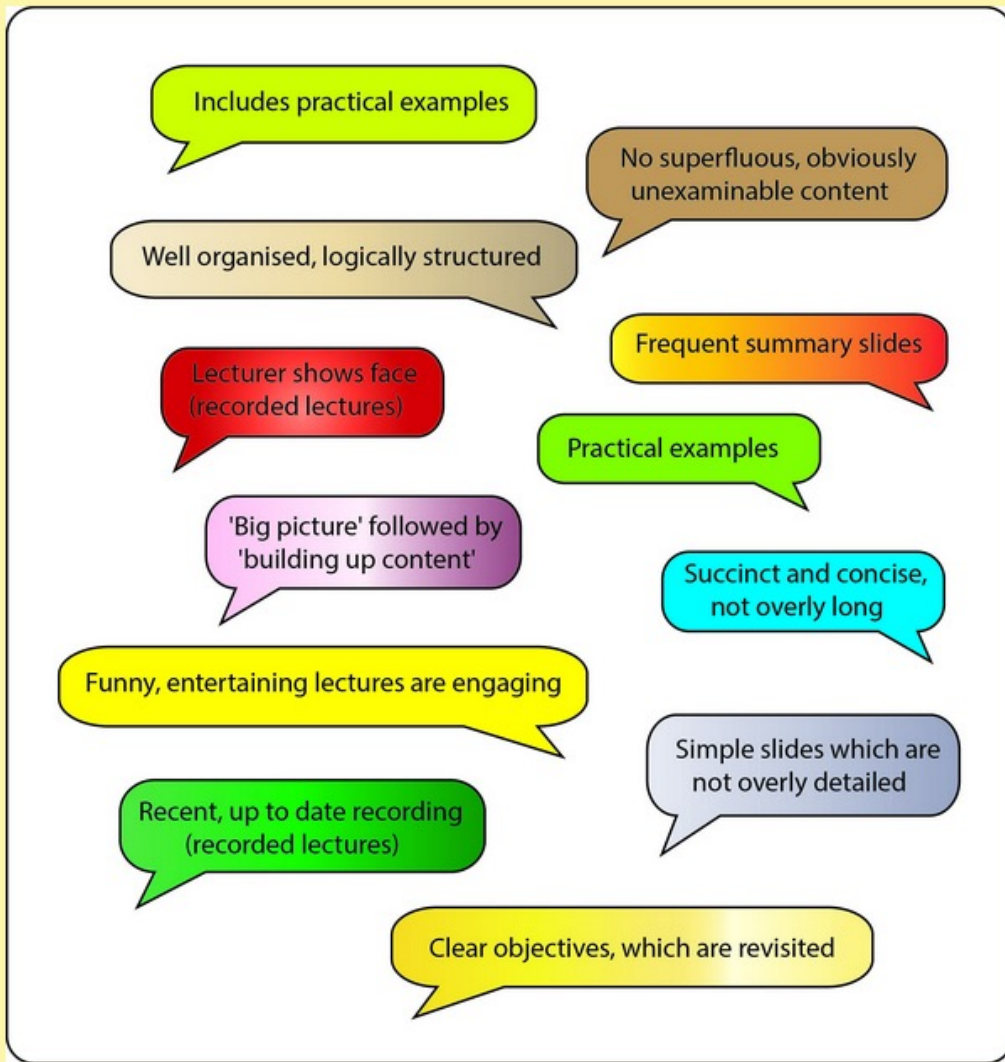




ELM Teaching Strategy 2021: A Focus on Student-Centred, Active Learning involving Blended Delivery



The CO courses desirable difficult pedagogy being blended



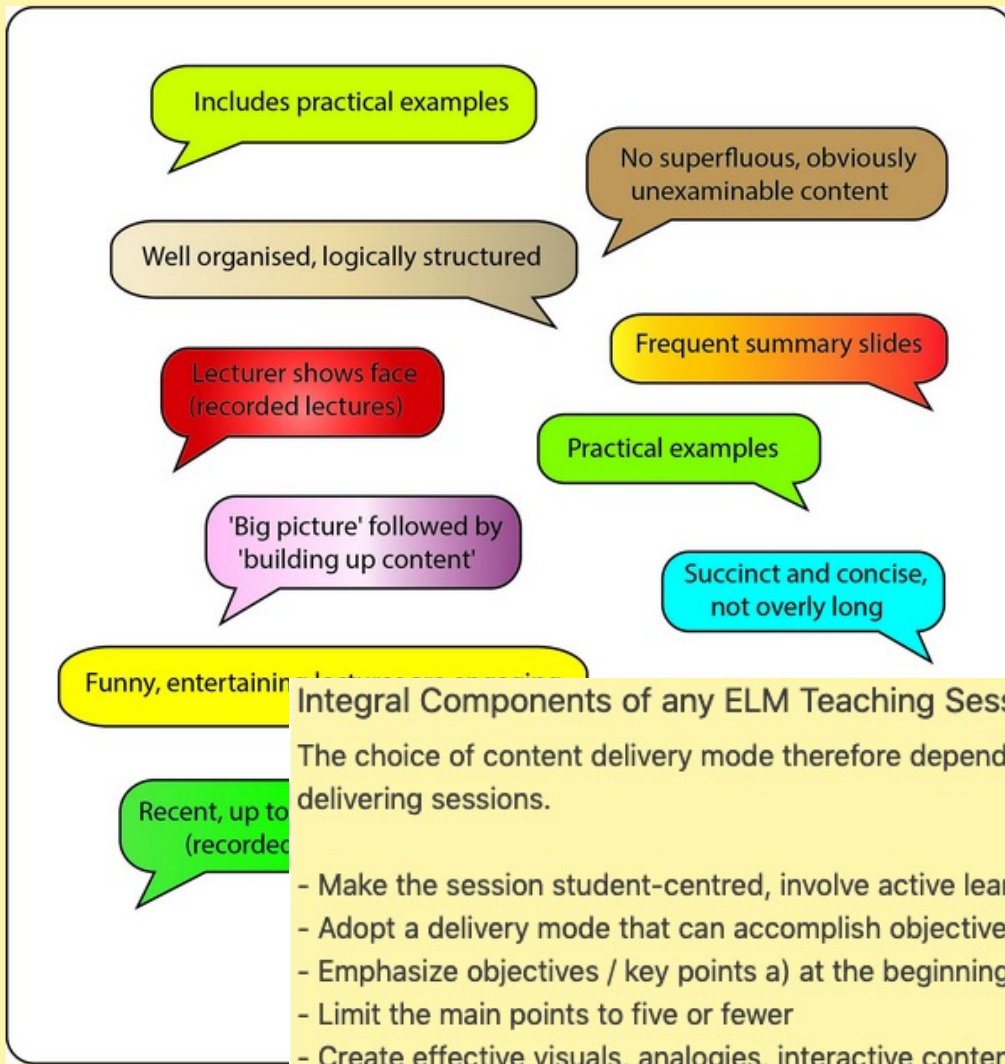
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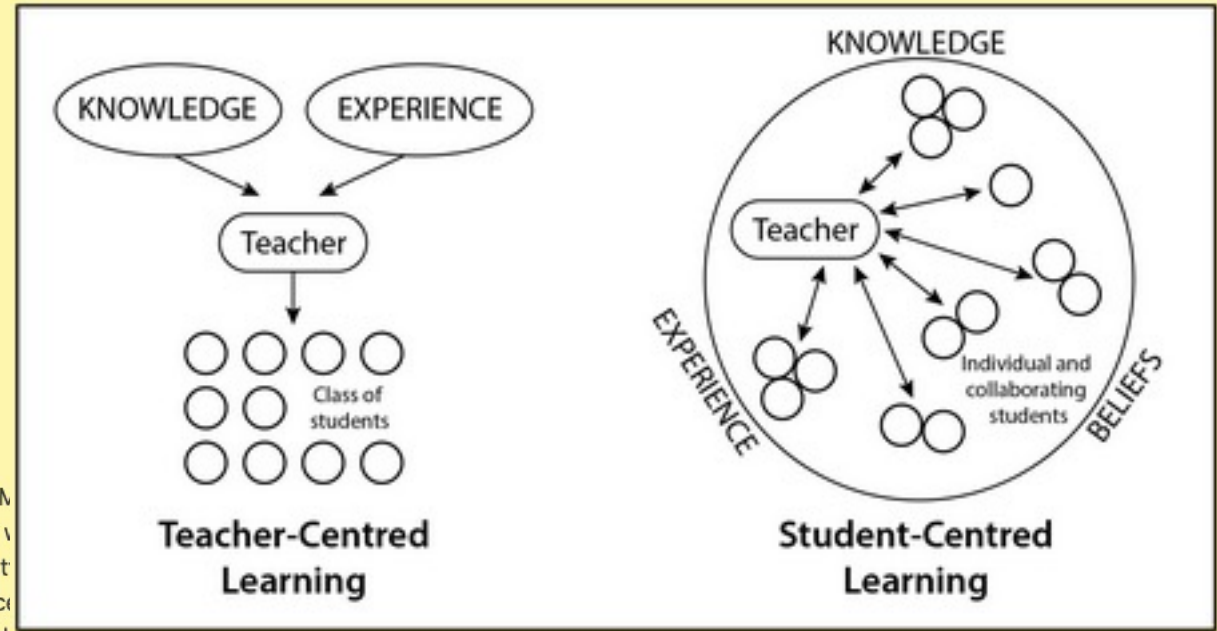
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**Integral Components of any ELM Teaching Session**

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



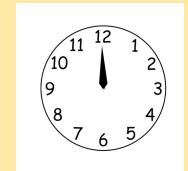
Herman Boerhaave (1668-1738): Founder of clinical teaching and modern academic hospital

*“Healthcare skills are complex requiring multiple steps”*

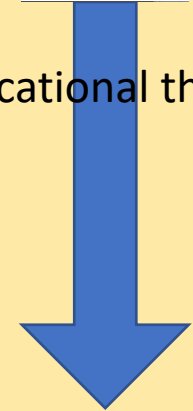
**Halsted:** See one, do one, teach one (~1900)

**Peyton:** Four step process (1998)

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



(with a little educational theory added in)

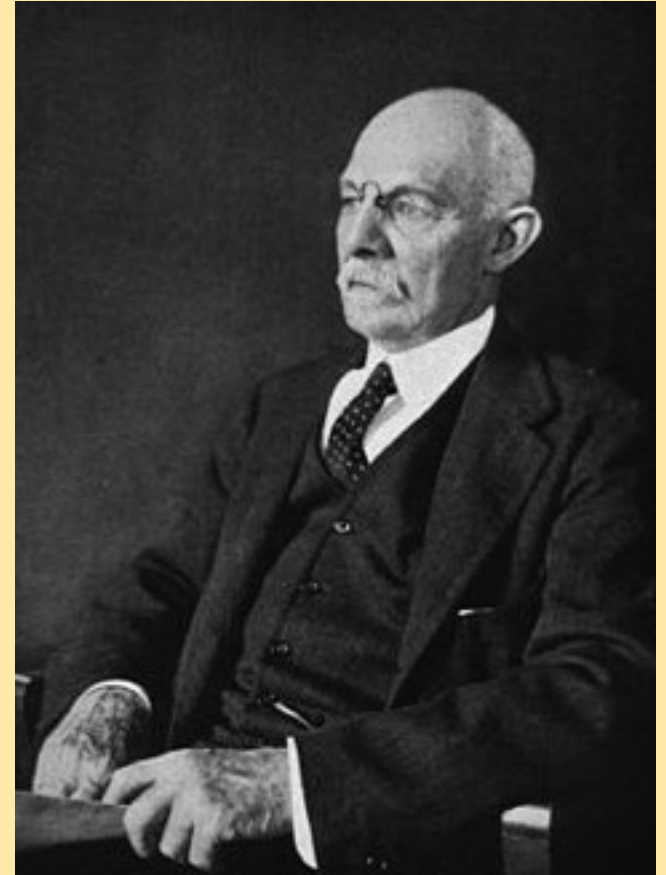


# William Halsted, MD 1852-1922

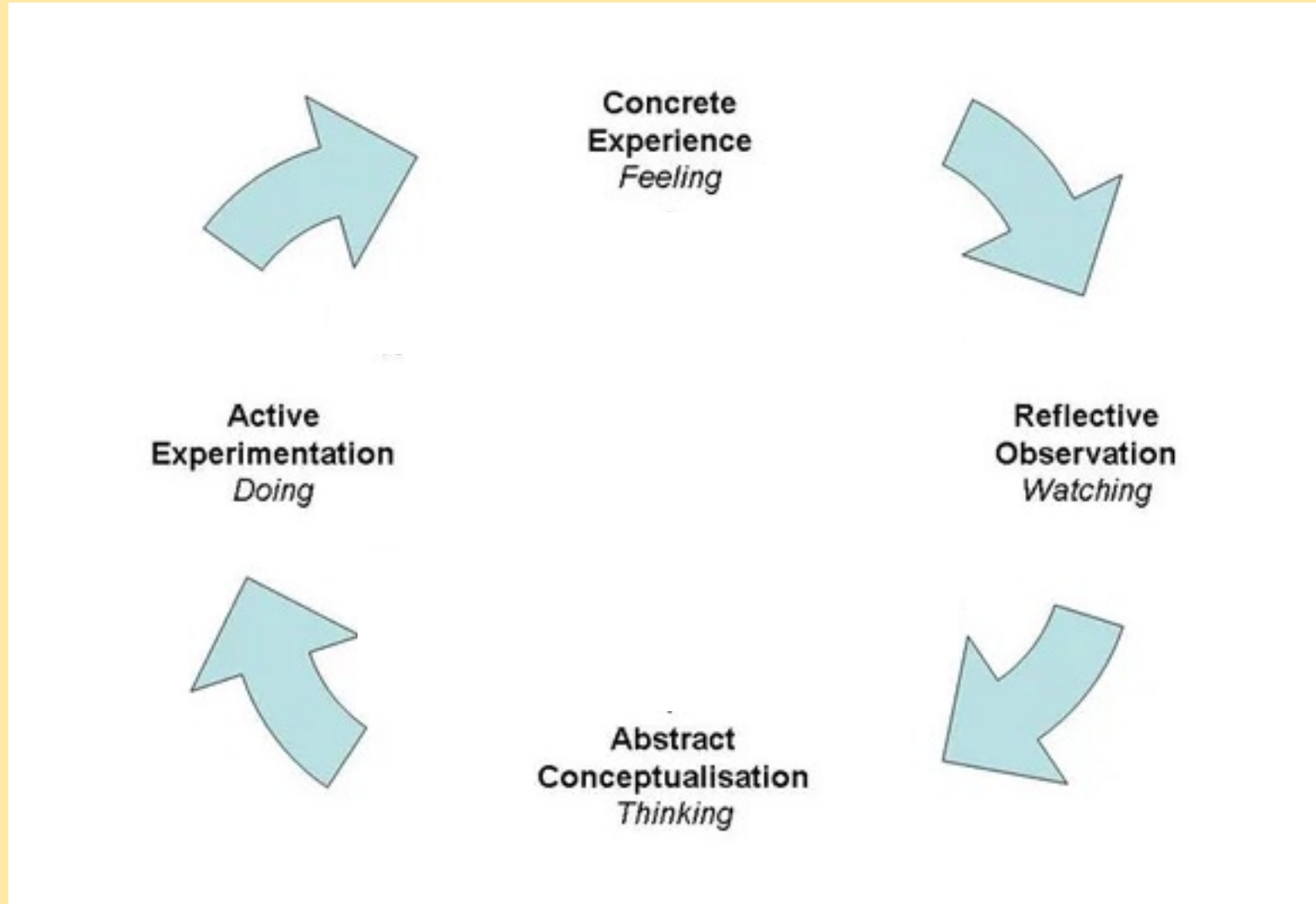
- Johns Hopkins founding Professor
- ‘See one, do one, teach one’ [surgical focus] ~1903
- Invented radical mastectomy
- Addicted to cocaine and morphine (but wasn't illegal!)

## *Criticisms*

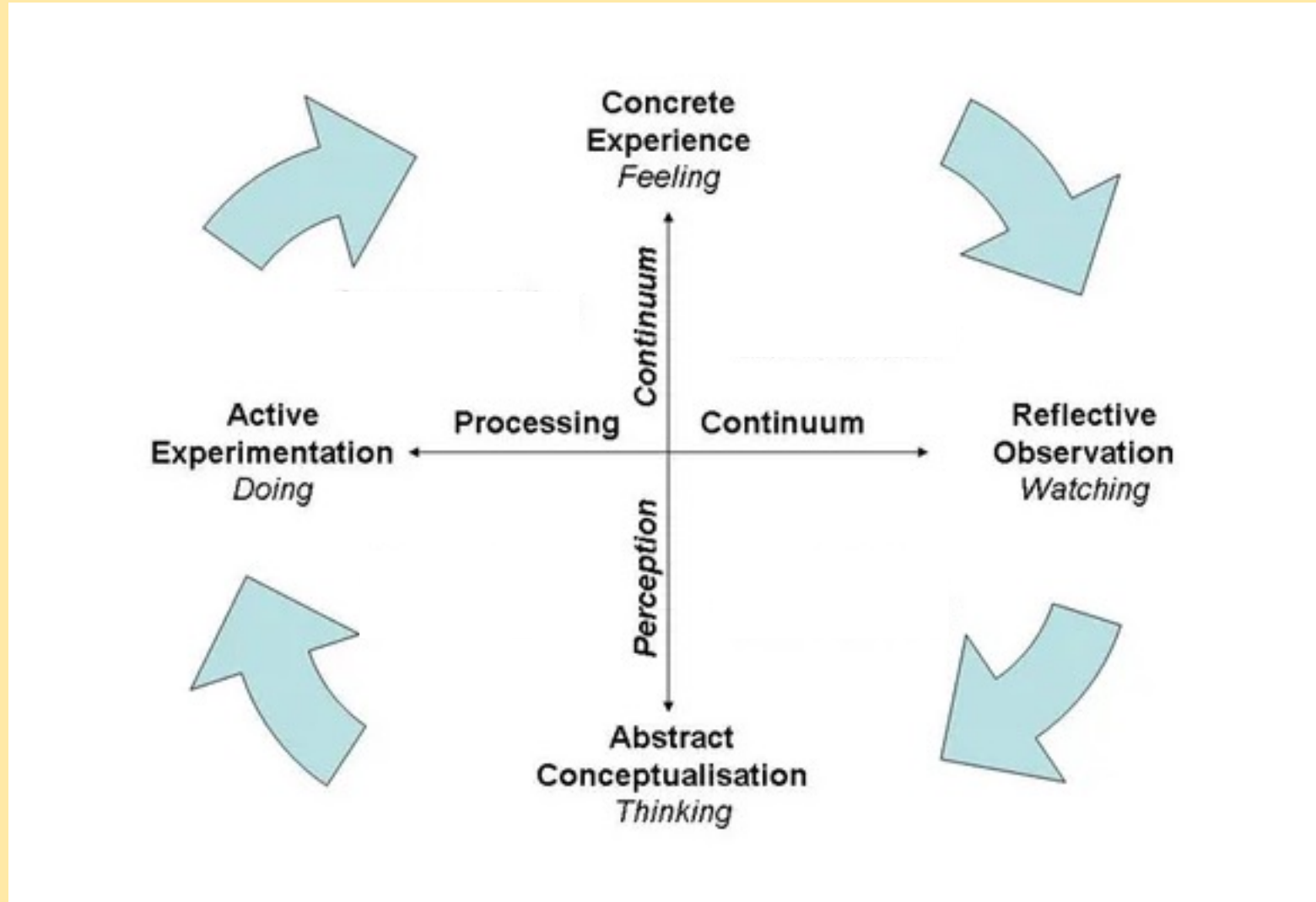
- Doesn't fit adult learning theory
- Patient safety



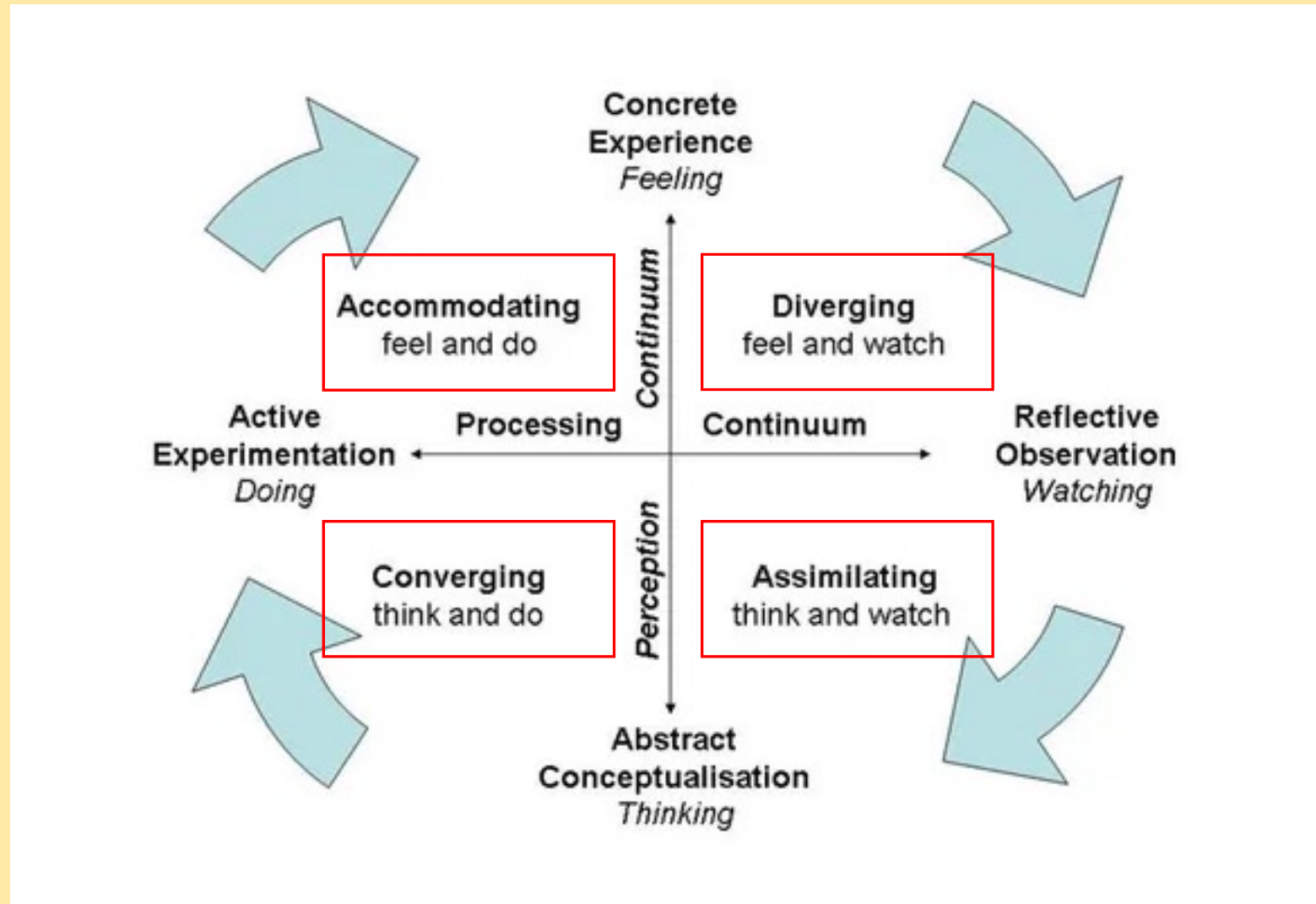
# Kolb's Reflective (Experiential) Model of Learning (1984)



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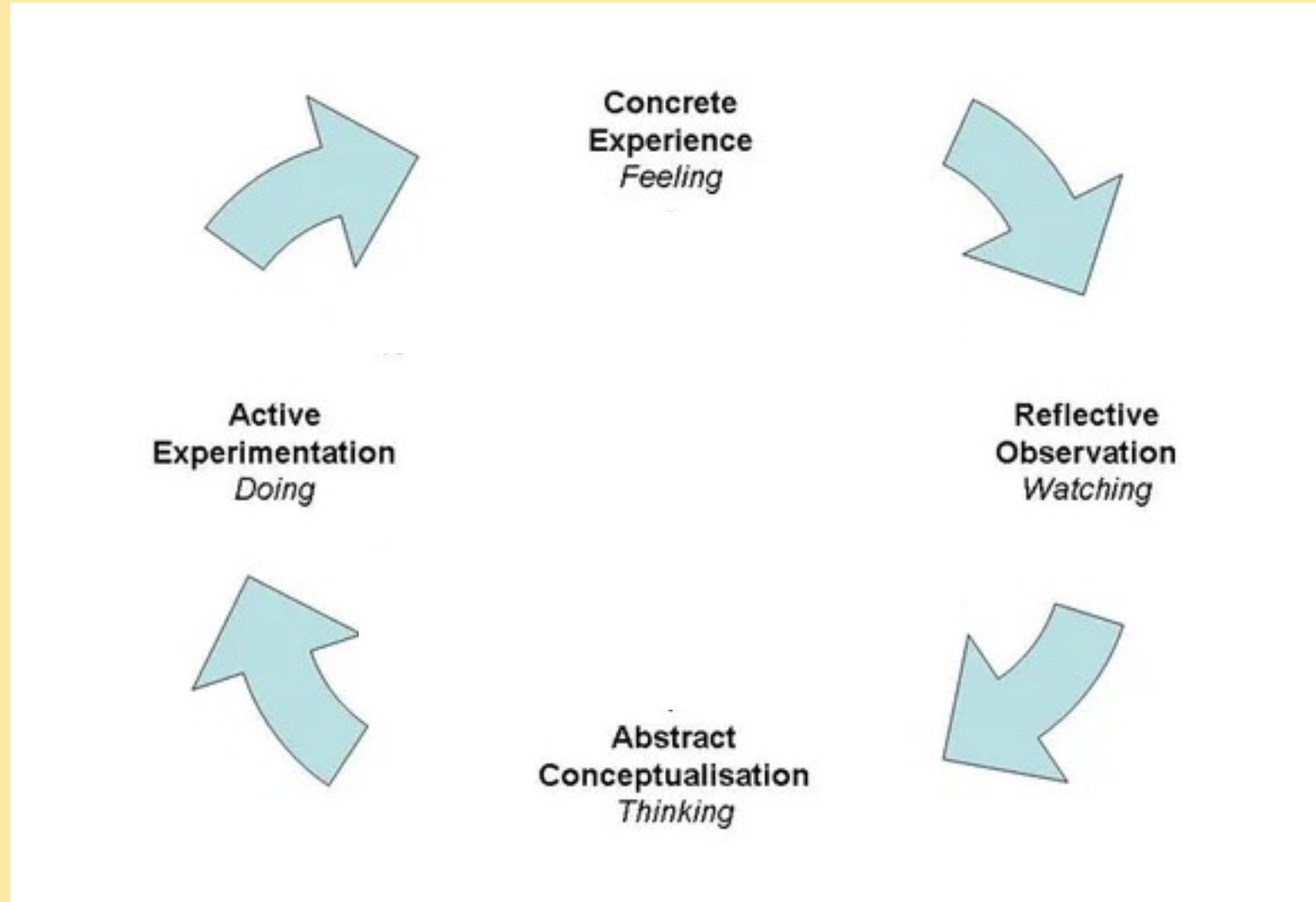
# Kolb's Reflective (Experiential) Model of Learning (1984)



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

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

Do One



See One

Teach One


# 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.....



# Rodney J



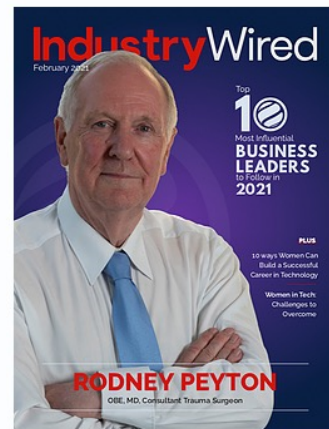
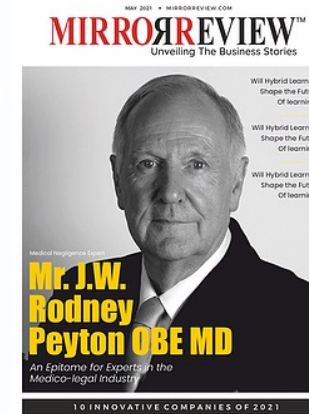
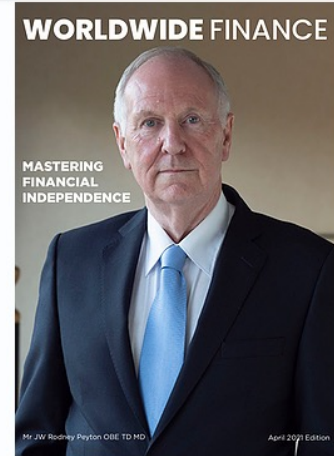
**PEYTON  
MEDICO LEGAL**  
The Medico Legal Authority - where the experts go for advice

**J.W. Rodney Peyton OBE**  
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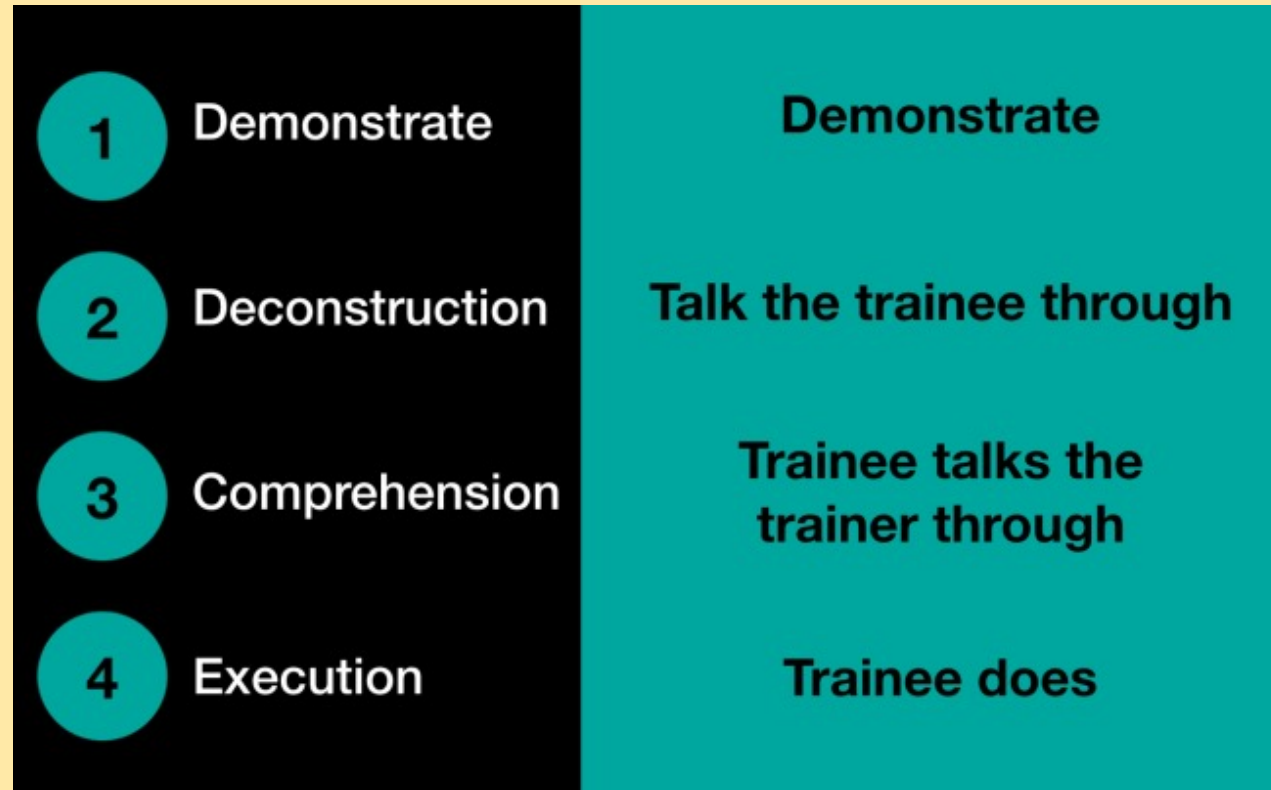
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- “Widely regarded
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- “Mr. Peyton’s pro
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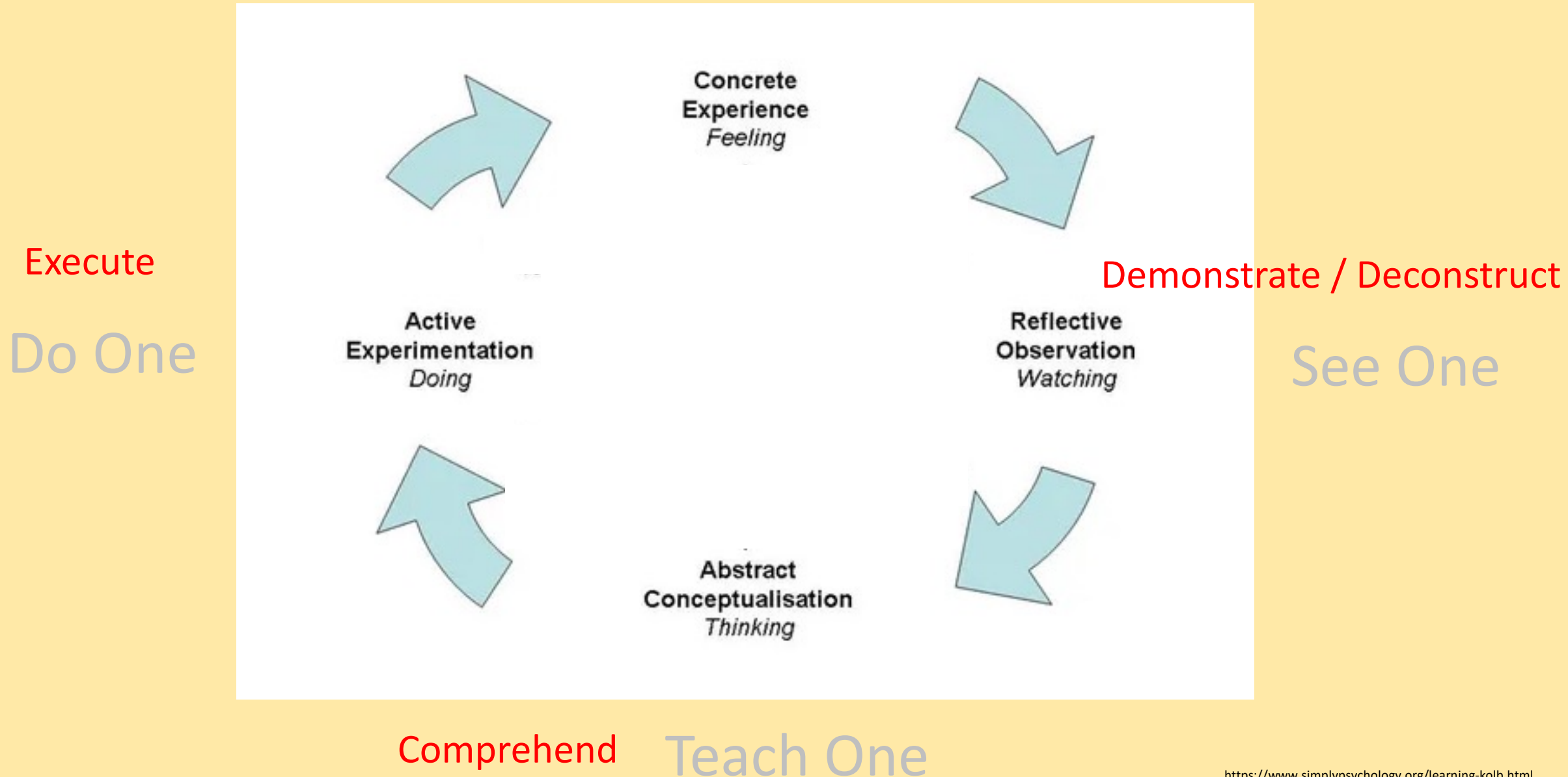
with his  
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# Peyton's Four Step Process 1998



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

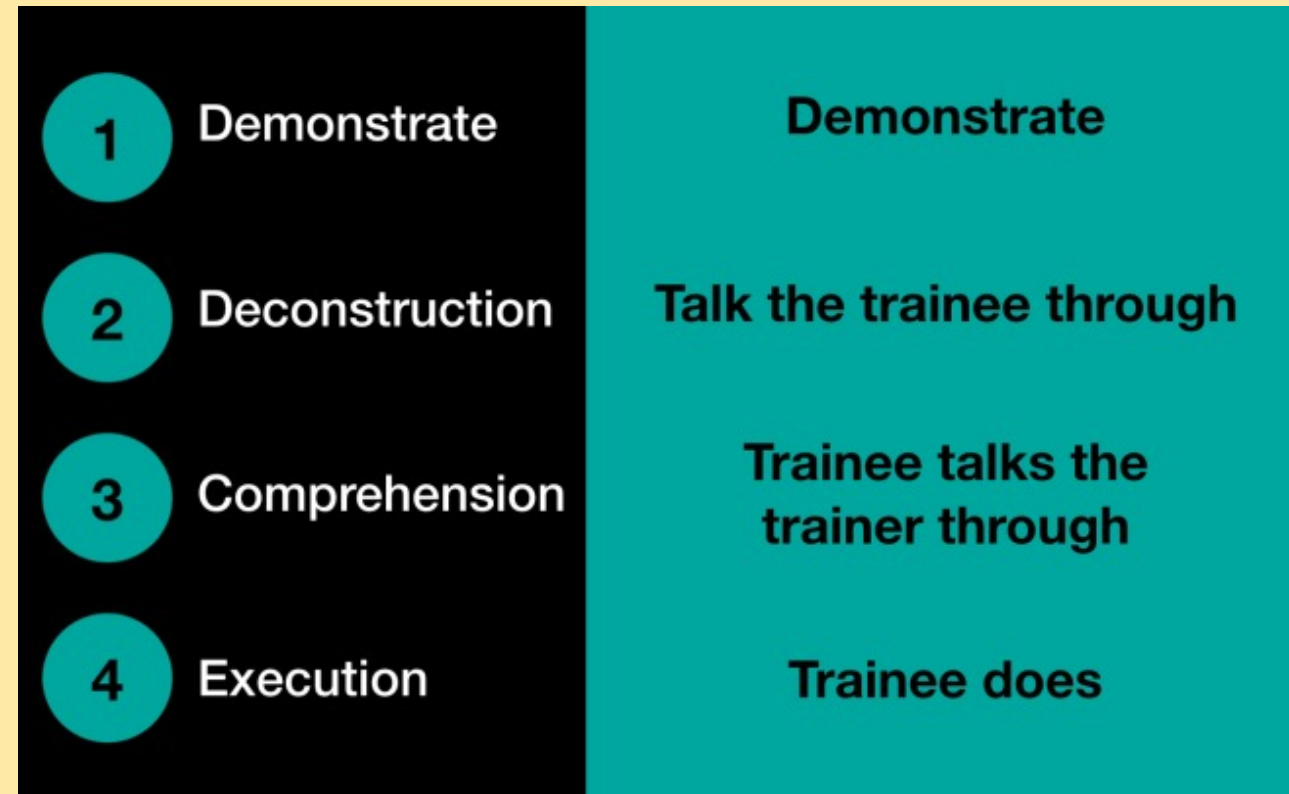
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# George & Doto (1997, 2001)

## Peyton's Four Step Process

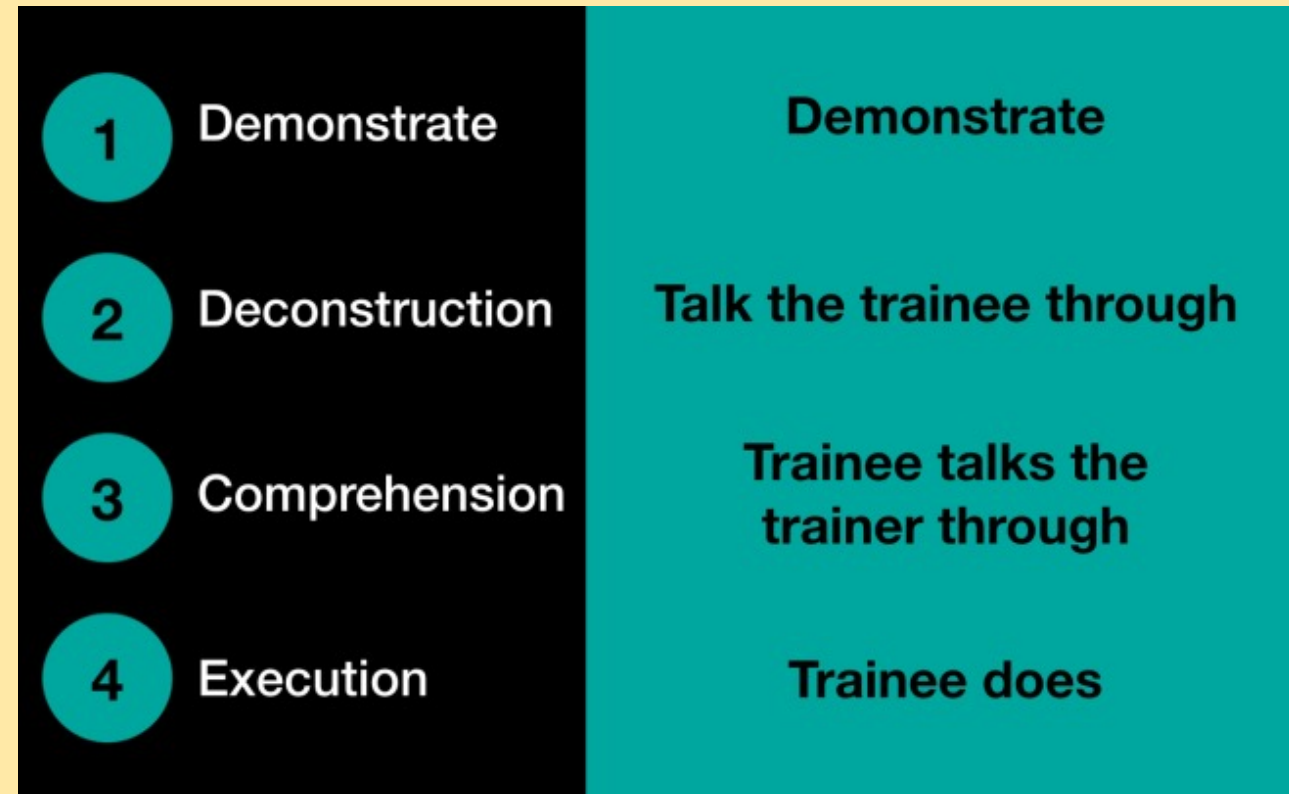
1. Explain why needed and how used clinically
2. Silent demonstration
3. Repeat slowly and describe
4. Student talks through
5. Student performs



# George & Doto (1997, 2001)

## Peyton's Four Step Process

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



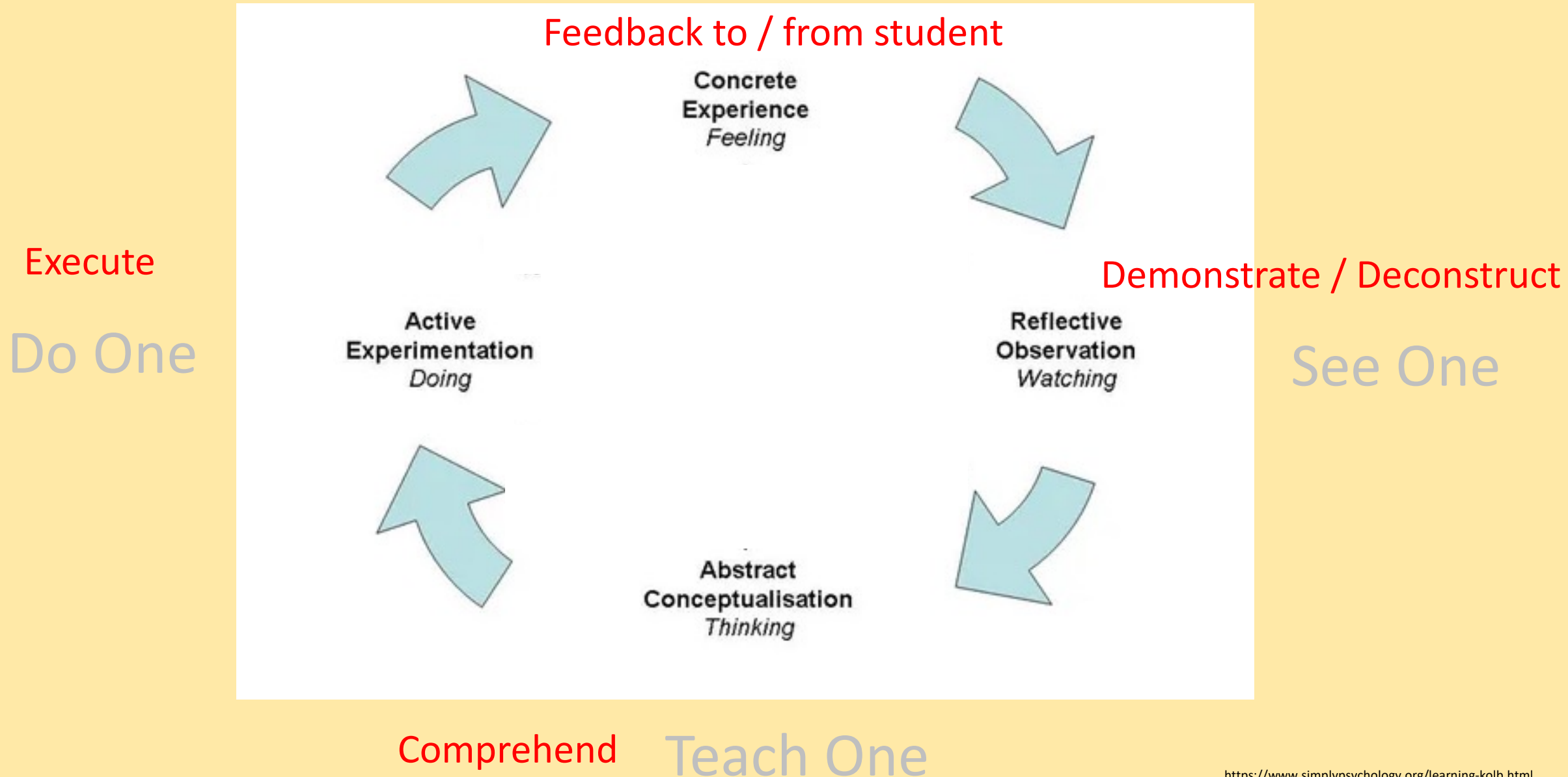
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## Peyton's Four Step Process

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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:*

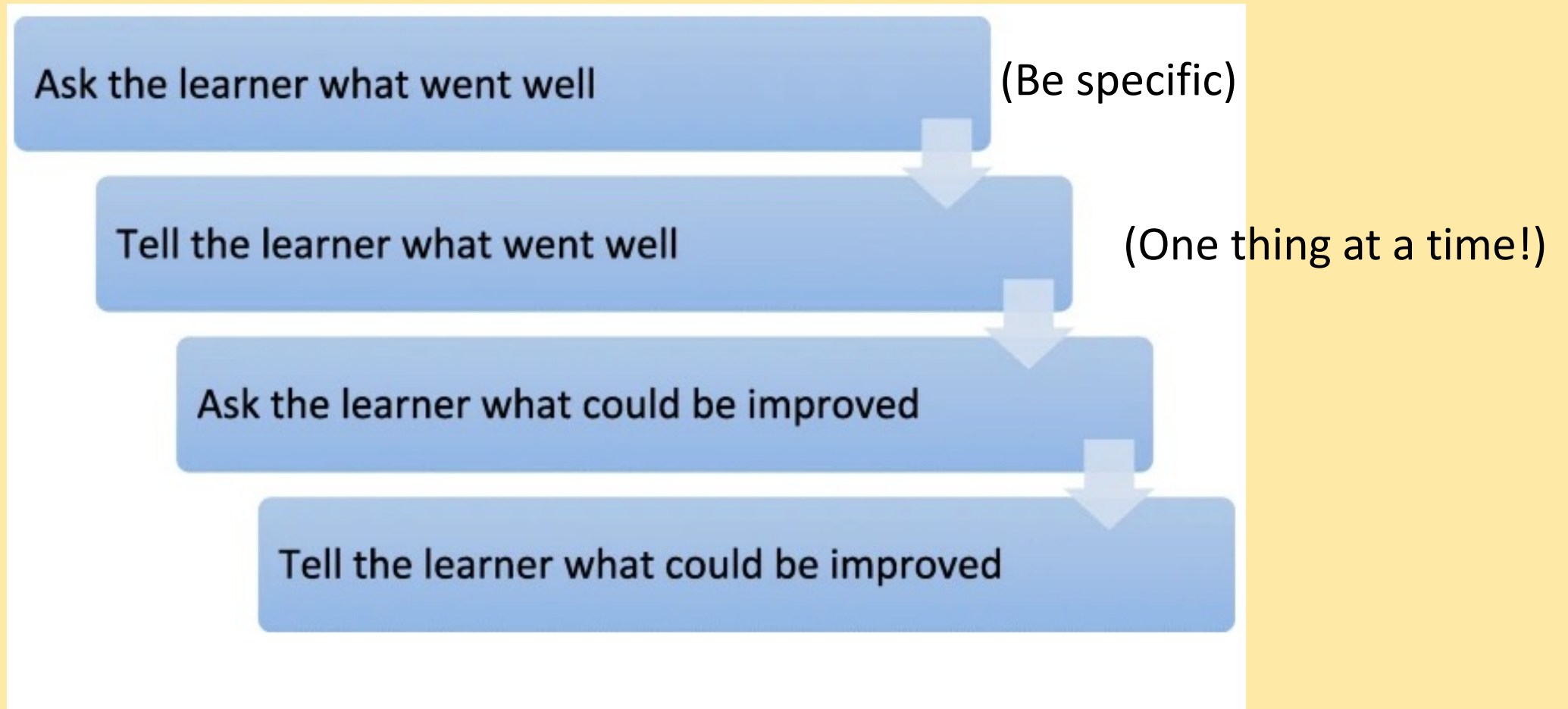
Health Prof Ed; 'Peyton's approach' is effective by staff; by student / peer teaching, effect less clear

*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?]



# Feedback

Ask the learner what went well

Tell the learner what went well

Ask the learner what could be improved

Tell the learner what could be improved

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Te Kura Hauora o Ōtagou

**DYK 16**

### Do you know... why questioning is an important skill?

The fundamental purpose of asking questions, regardless of context, is to contribute to the shared pool of information and mutual understanding. Questioning can take place in a one-one situation or in groups of two or more.

**Why use questioning?**  
Questioning is helpful for learning and teachers should be aware of why they are asking questions.

**Your reasons for questioning your students may include:**

- Engaging the learner
- Testing the student
- Establishing understanding
- Clarifying ideas
- Exploring challenges
- Encouraging deeper thought

**Open questions**  
Open questions tend to draw out longer responses and may be used to explore thoughts or feelings.

**Closed questions**  
Closed questions can be used to elicit information or confirm understanding.

**Leading questions**  
Leading questions have the effect of priming the student in a particular direction. A leading question can shape the rest of the conversation.

**Recall questions**  
Recall questions check knowledge.

**Process questions**  
Process questions focus on thoughts and analysis or sharing of opinion.

**Some key questioning strategies**

- Non-verbal cues
- The way you phrase a question, the tone you use and the body stance you adopt all influence how a student interprets a question. Allow students space to get a question wrong, without ridicule or eye rolling.
- Formulating the question
- It is easy to ask a closed, low-level recall question. Try to formulate more meaning through open, high-level process questions. When starting your questions, think about the why, what, how.
- Adaptive questioning
- Don't let questioning become a downward spiral of negative feelings. If a student doesn't know something it is not a bad thing and the student shouldn't be made to feel small because of it. Instead, maybe it's time to adapt your questioning.

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**DYK 10**

### Do you know... how to make the most of participating in feedback?

You know that constructive feedback is important to effective clinical education. But do you know that we've moved on from talking about 'giving' feedback?

These days we prefer to view feedback as akin to a partnership between people rather than a teacher imposing an agenda on a student.

The medical degree formally requires occasions for giving prescribed feedback, but increasingly in the clinical settings everyone – clinicians, students and the organisation – expects that students might also ask for feedback.

Most students are clever enough to (mostly) have a good idea about what challenges them. Conversely, some lack confidence about identifying their strengths.

Effective feedback should work for both parties but students don't always find it easy to approach staff. If we want students to consider their learning needs, they need you to meet their request positively.

Think about whether you and your colleagues make it comfortable for them to make such approaches. If you're too busy, set another time. Ask yourself:

- Do you foster an environment that welcomes and accepts students?
- Do you know their names?
- Are you kind, knowledgeable, skilled and generous with your thoughts about their learning?

**FOR PARTICIPATING IN FEEDBACK**

- timely – don't leave your feedback too late. This irritates students and makes the feedback less effective.
- their perspective: how did they think it went? Ask them what they think they need to learn and how feedback back as valuable as possible. It's up to the student to determine what they take from the interaction – but do by discussing with the student which areas of practice they should be learning and what opportunities for consultation. How to best interact with the nursing staff.
- the areas on which you'll offer feedback. For instance the feasibility of a management plan, specific lies to the learning expected of them. For empathy, communication skills, physical examination, you give. Comments such as: That was ok, don't help.
- the learner can and should change, keep it specific.
- be brief, as that can be really demoralising.
- they going to do about any learning gap that was identified?
- a bit of confidence. Build them up where you can. Remember how intimidating the students' is that how you want students to remember you?

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# 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.

# 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?





# 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

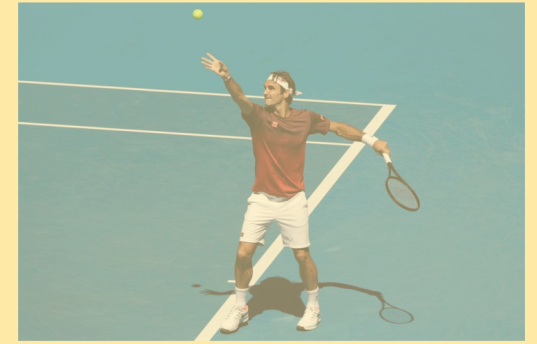
# Third third! Q&A with panel

- 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

Joy



Jon



Anthony



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*Te Whare Wānanga o Ōtāgo*

NEW ZEALAND