



Supporting clinical skills learning online and in-class



ADEE **TECH** Talks

Prof. Michael Botelho – Faculty of Dentistry, University of Hong Kong

Scope

- What? - clinical skills
- Why? – clinical transition gap & Ethics
- How? – OVED and SCE

What?

What?

Clinical skills



```
graph TD; A[Clinical skills] --> B[Hard skills]; A --> C[Soft skills]; B --> D["Psychomotor skills<br/>Performance skills<br/>Holistic patient care"]
```

The diagram is a hierarchical flowchart. At the top is a white box labeled 'Clinical skills'. A horizontal line with two downward-pointing arrows branches from this box to two separate boxes: 'Hard skills' on the left and 'Soft skills' on the right. The 'Hard skills' box is further connected by a downward arrow to a larger box containing three items: 'Psychomotor skills', 'Performance skills', and 'Holistic patient care'. The 'Soft skills' box is not further connected. A vertical dashed line runs down the center of the slide, and a horizontal dashed line runs across the middle, intersecting at the center of the 'Soft skills' box.

Hard skills

Soft skills

Psychomotor skills

Performance skills

Holistic patient care

Clinical skills

```
graph TD; A[Clinical skills] --> B[Hard skills]; A --> C[Soft skills]; B --> D["Psychomotor skills<br/>Performance skills<br/>Holistic patient care"]; C --> E["Patient related<br/>HOTS"]; C --> F["Non-Technical skills –<br/>NOTTS.org"];
```

Hard skills

Psychomotor skills

Performance skills

Holistic patient care

Soft skills

Patient related
HOTS

Critical thinking
Problem solving
Communication
Professionalism/ethics
Reflection
Interpersonal
Empathy/Integrity
Teamwork

Non-Technical skills –
NOTTS.org

Clinical skills

Hard skills

Psychomotor skills
Performance skills
Holistic patient care

Soft skills

Patient related HOTS

Critical thinking
Problem solving
Communication
Professionalism/ethics
Reflection
Interpersonal
Empathy/Integrity
Teamwork

Non-Technical skills –
NOTTS.org

Why? - A significant clinical learning gap

European Journal of
Dental Education



ORIGINAL ARTICLE

Challenges in the transition to clinical training in dentistry: An ADEE special interest group initial report

C. M. Serrano ✉, M. G. Botelho, P. R. Wesselink, J. M. Vervoorn

First published: 03 February 2018 | <https://doi.org/10.1111/eje.12324> | Citations: 6

14 schools, 12 countries

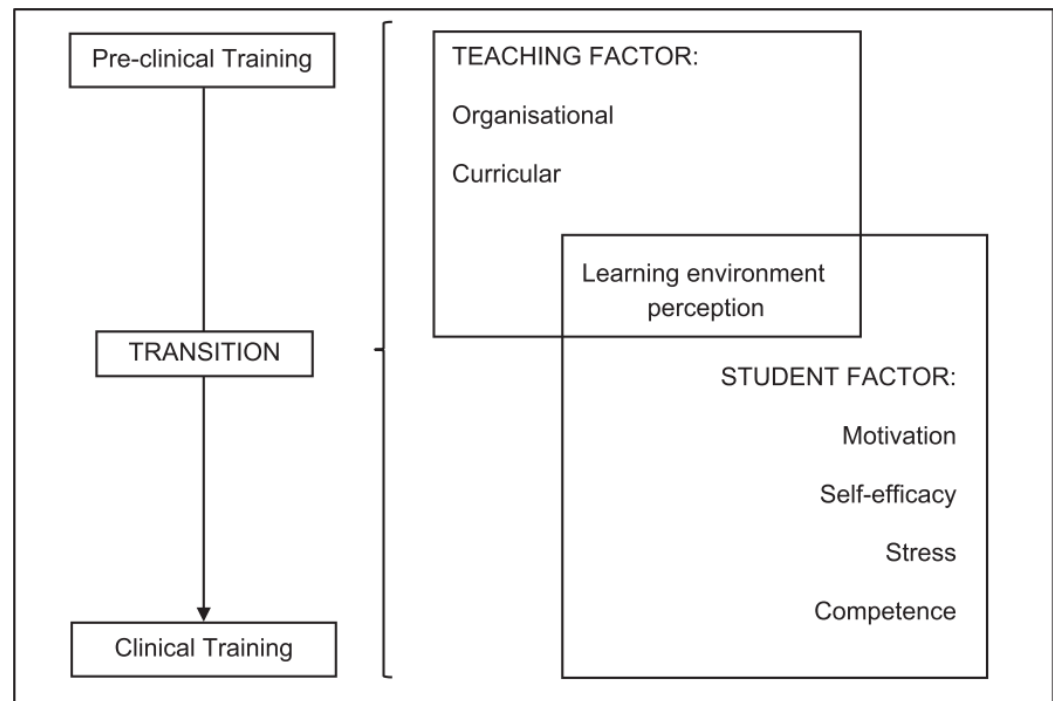
“The pre-clinical to clinical transition is a recognized matter in dental education”

Why? A significant clinical learning gap

Challenges in the transition to clinical training in dentistry: An ADEE special interest group initial report

C. M. Serrano ✉, M. G. Botelho, P. R. Wesselink, J. M. Vervoorn

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Pre-clinical-clinical transition domains.

Why? - A significant clinical learning gap

European Journal of

Dental Education



ORIGINAL ARTICLE |  Full Access |

An analysis of clinical transition stresses experienced by dental students: A qualitative methods approach

M. Botelho , X. Gao, S. Y. Bhuyan

First published: 17 April 2018 | <https://doi-org.eproxy.lib.hku.hk/10.1111/eje.12353> | Citations: 3

FIND@HKUL

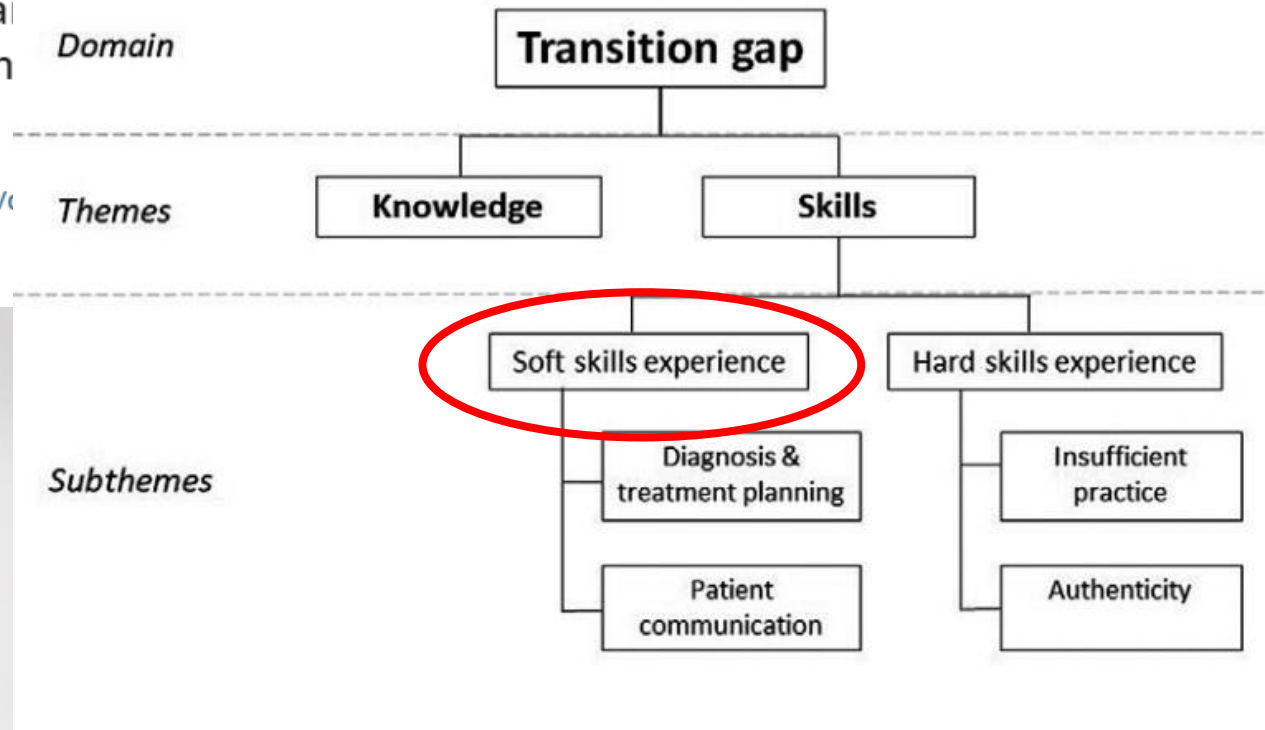
Why? A significant clinical learning gap

An analysis of clinical transition gap in dental students: A qualitative methodological study

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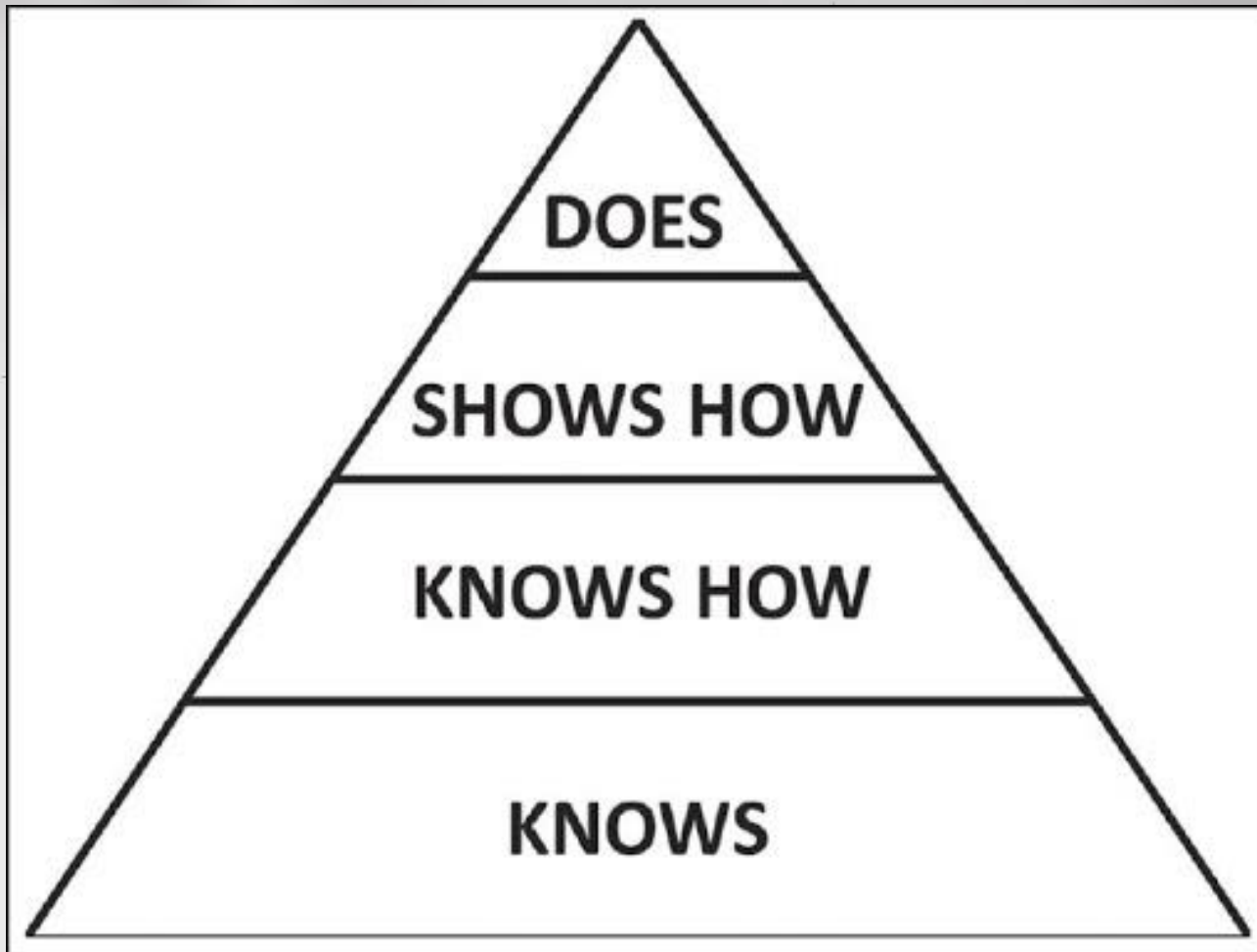


Why? – Ethics

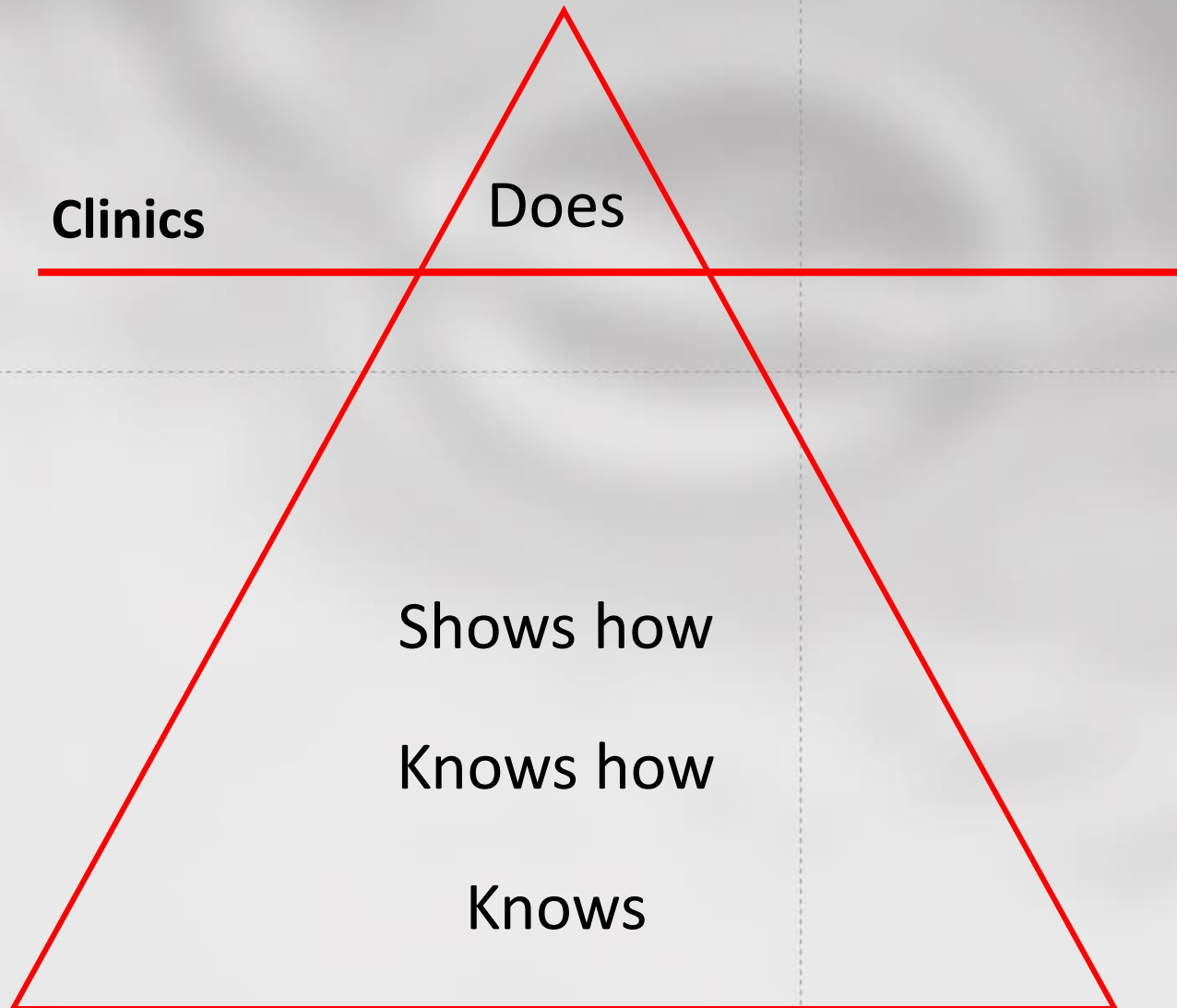
Students deserve to be better prepared for clinical practice

Patients deserve to have healthcare providers who are appropriately prepared/trained

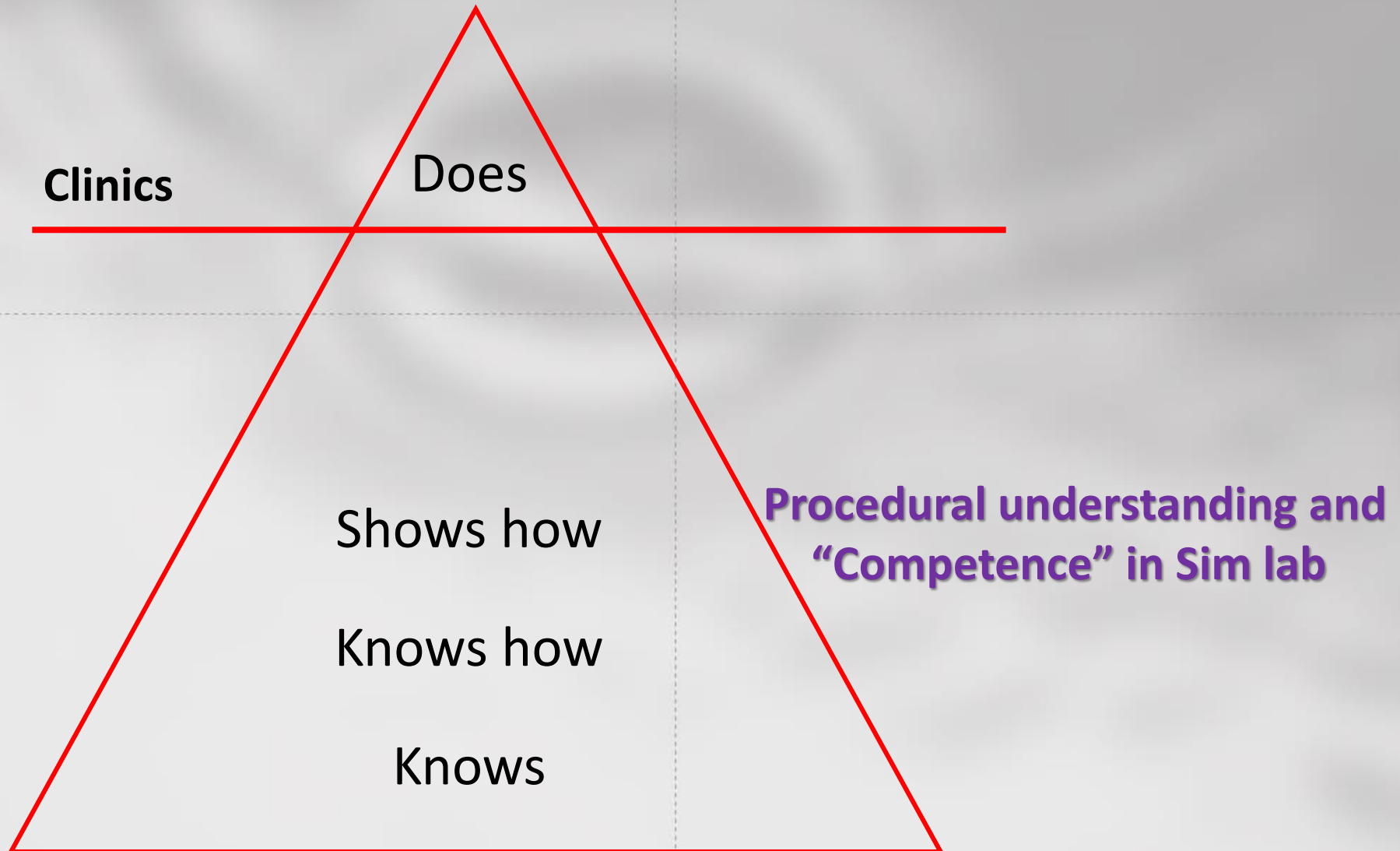
How? Millers assessment/learning pyramid



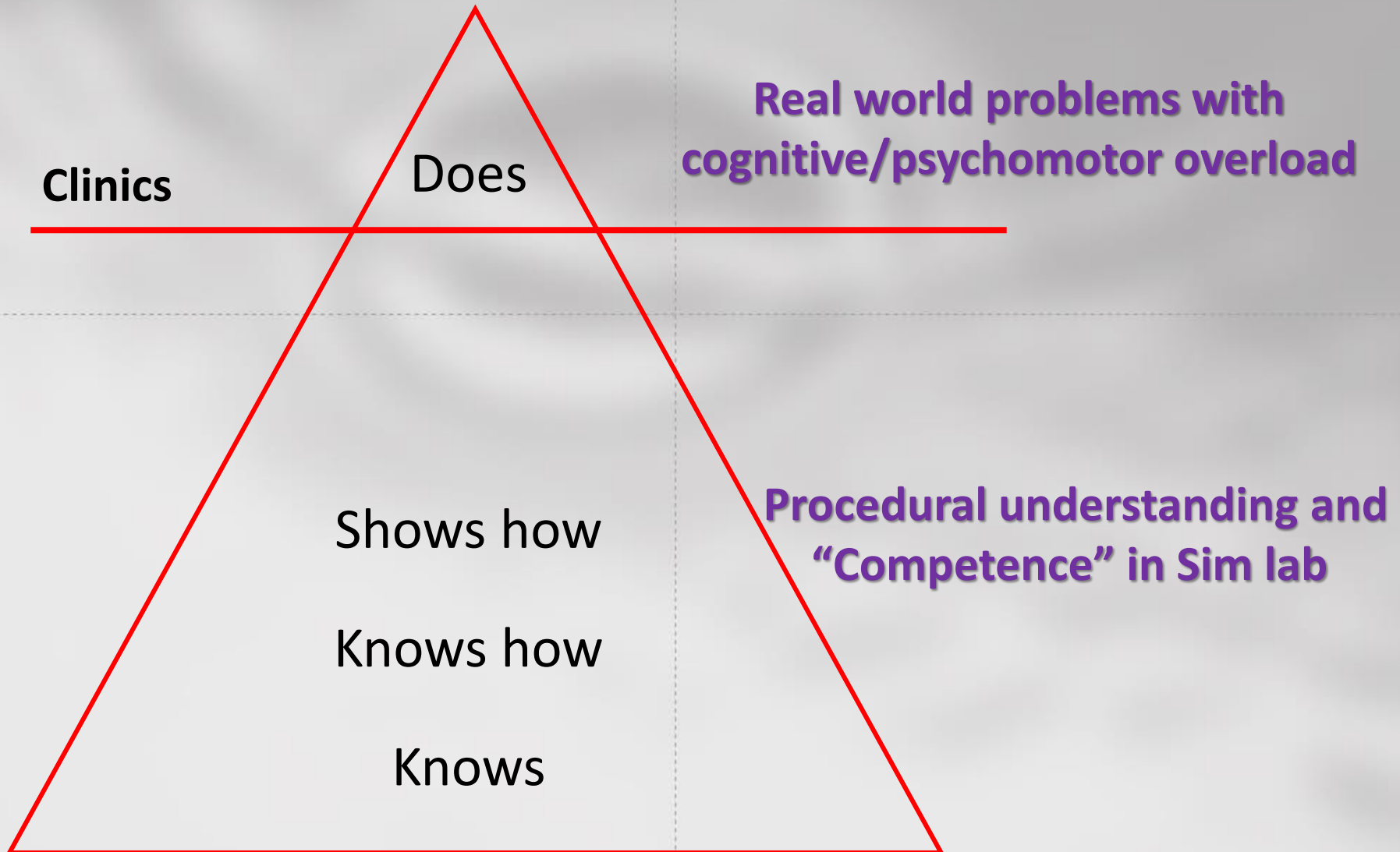
A significant clinical learning gap



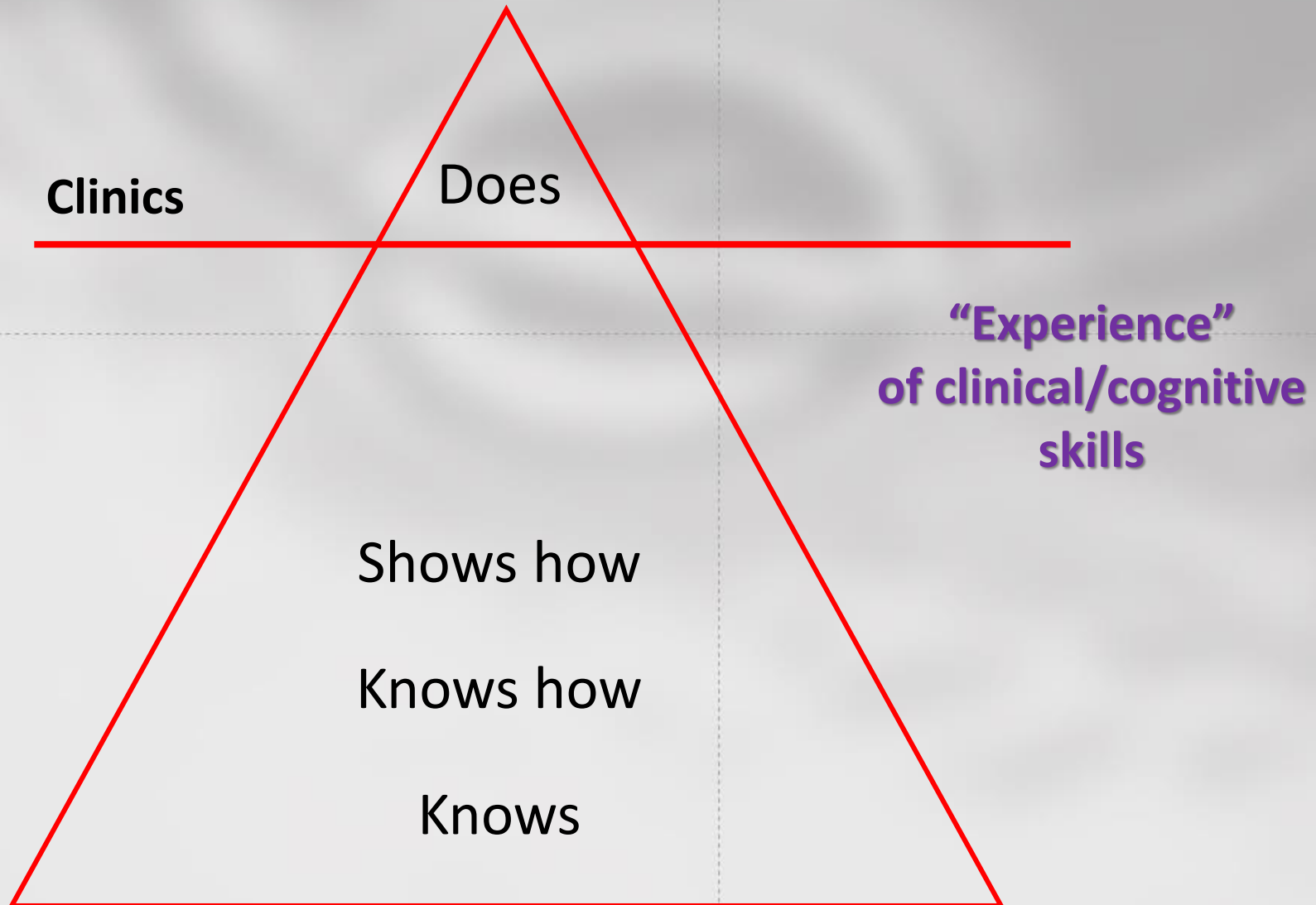
A revised learning pyramid to close the gap



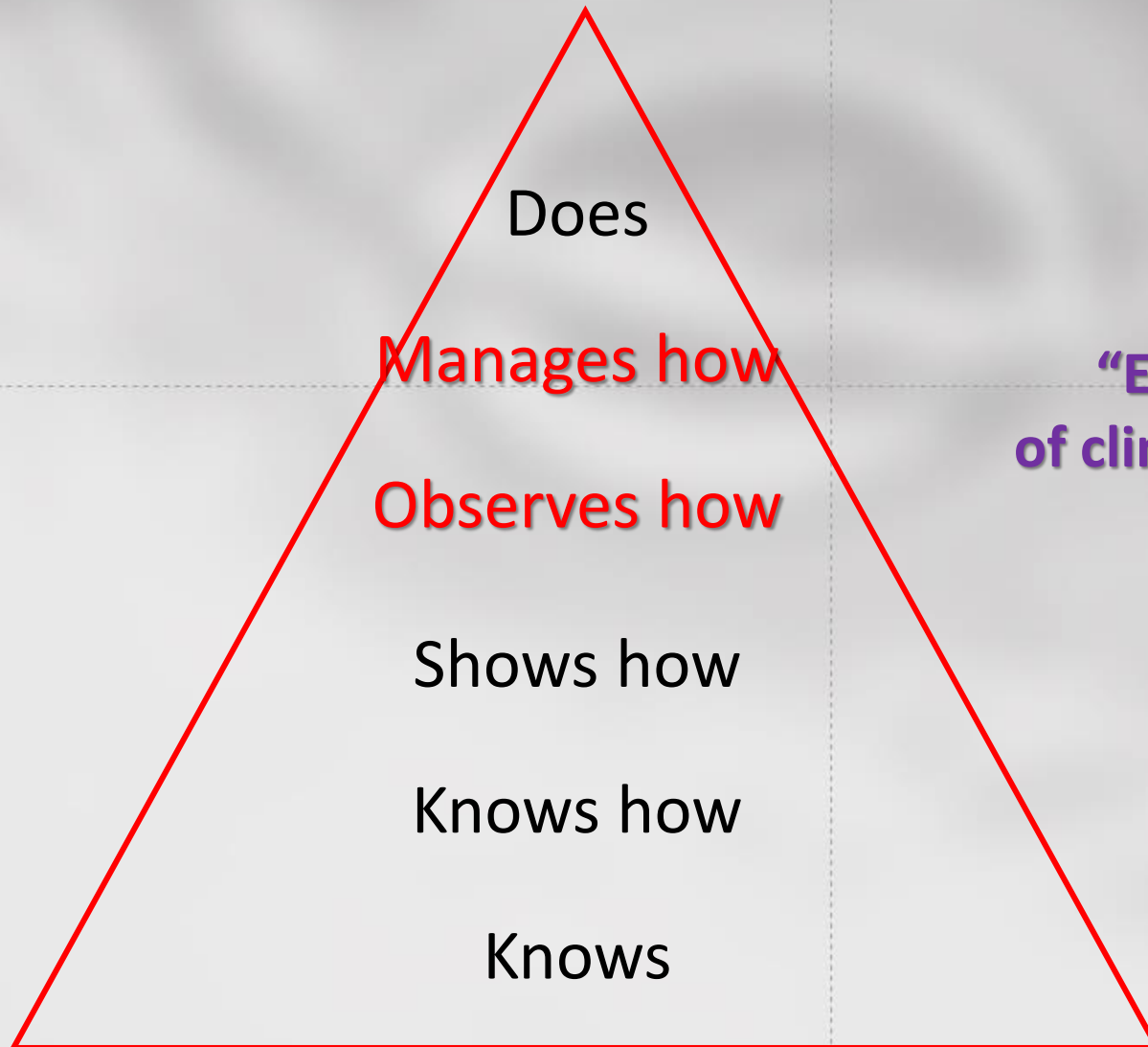
A revised learning pyramid to close the gap



A revised learning pyramid to close the gap

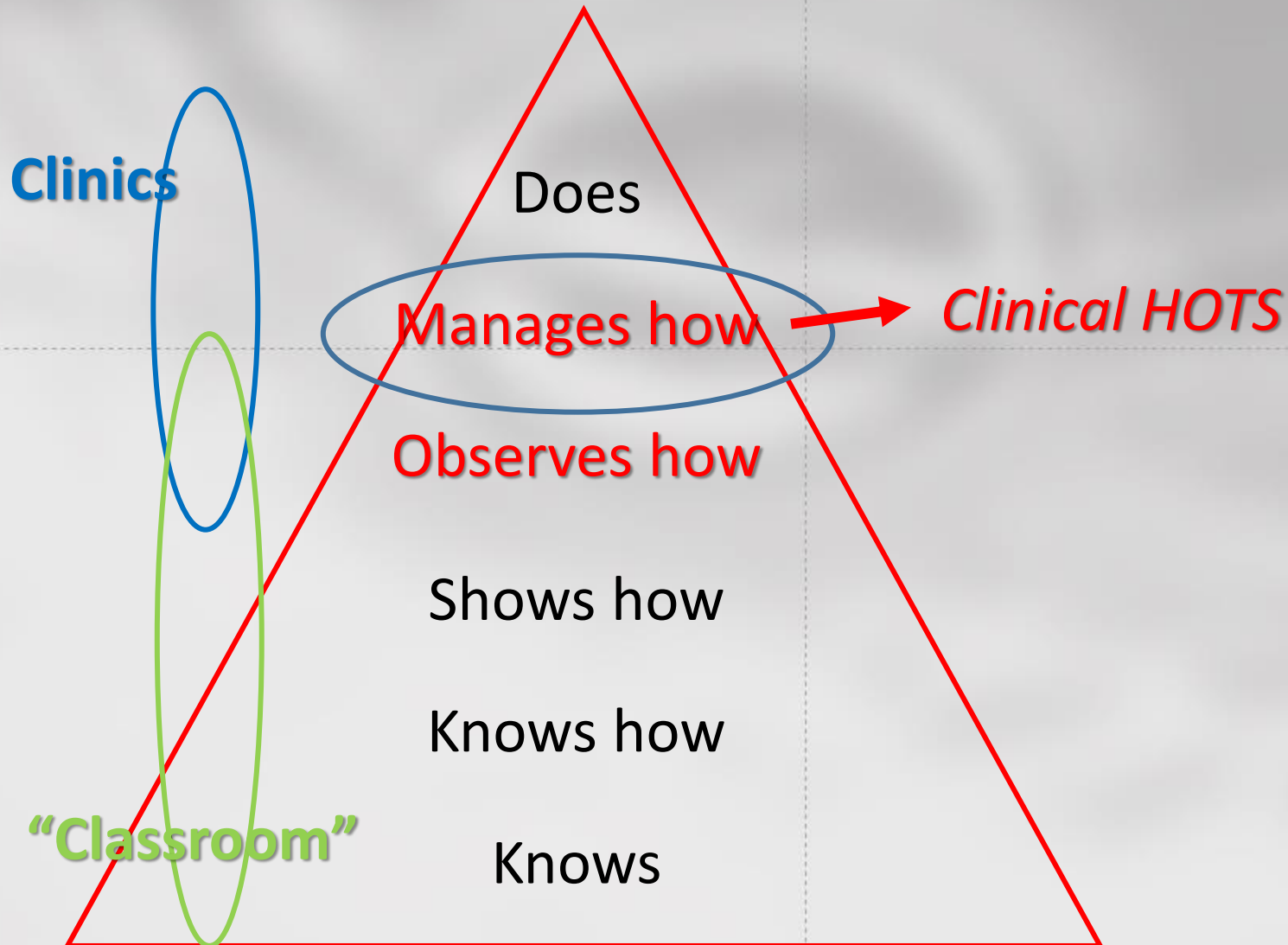


A revised learning pyramid to close the gap

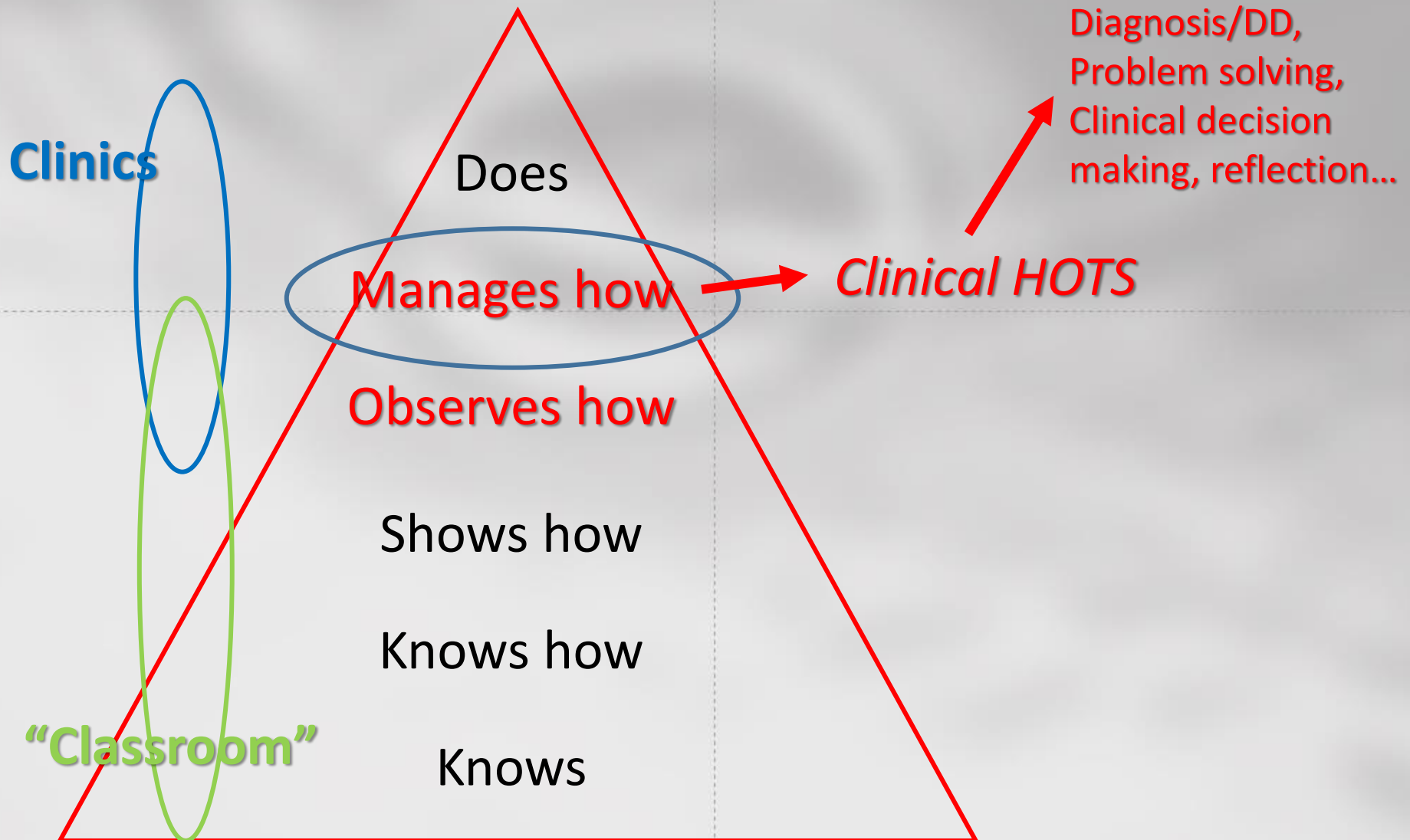


**“Experience”
of clinical/cognitive
skills**

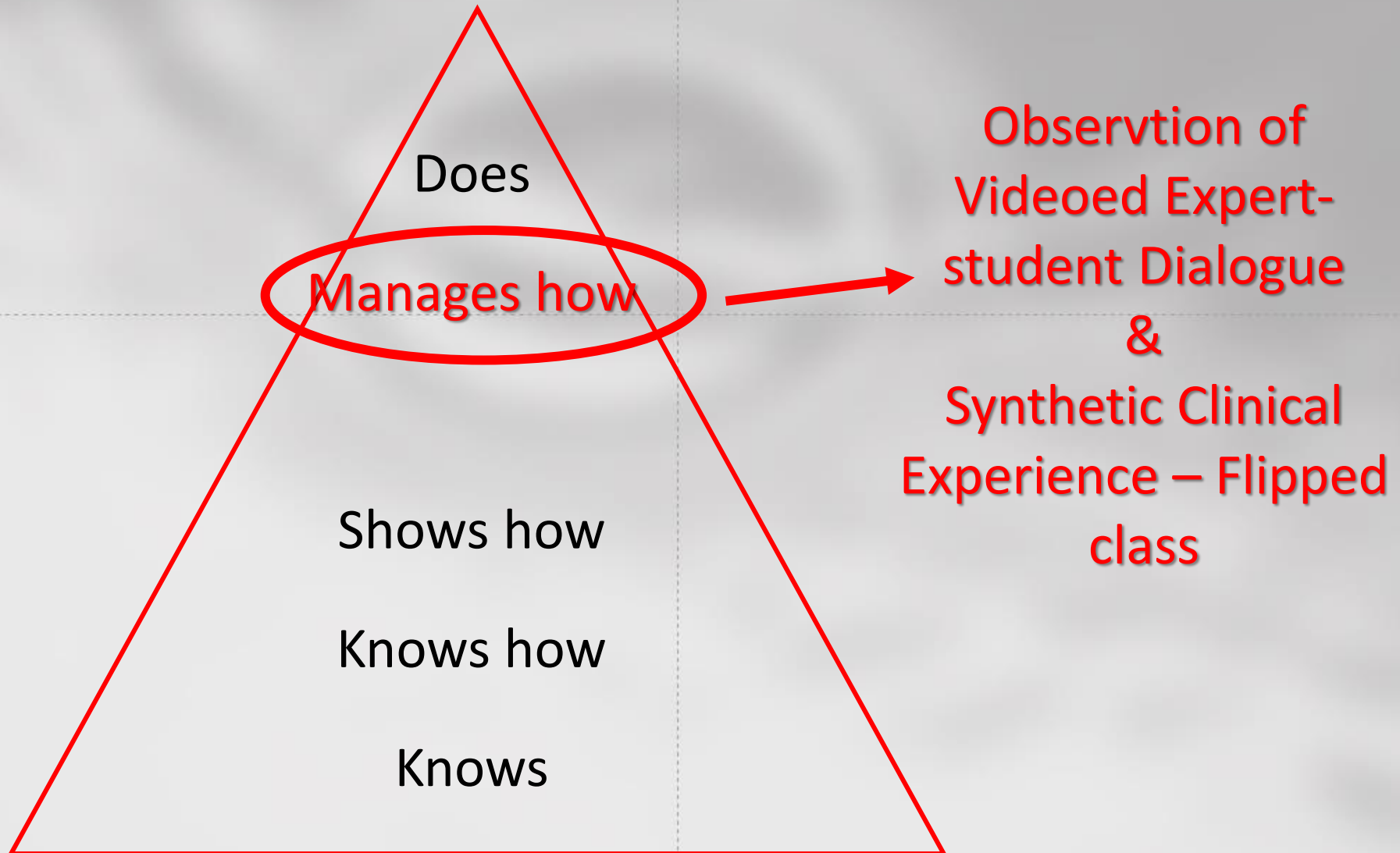
A revised learning pyramid to close the gap



A revised learning pyramid to close the gap



A revised learning pyramid to close the gap



Observation of expert-student dialogue - OVED

- **Treatment planning**



DOI: 10.1111/eje.12371

ORIGINAL ARTICLE

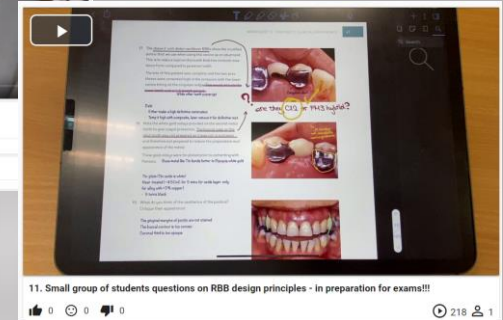
WILEY

The communal consultation video—Enhancing learning and broadening experience through observing dialogue

M. G. Botelho 

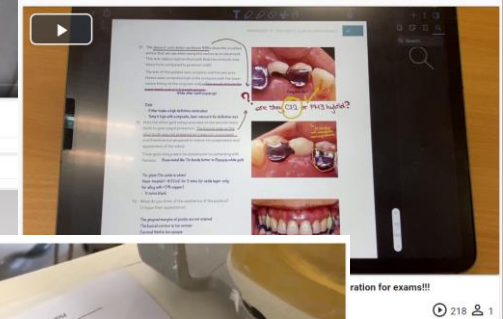
Observation of expert-student dialogue - OVED

- Treatment planning
- Q and A



Observation of expert-student dialogue - OVED

- Treatment planning
- Q and A
- Competence assessment



European Journal of
Dental Education



ORIGINAL ARTICLE

Mixed-methods analysis of videoed expert-student dialogue supporting clinical competence assessments

Michael Botelho✉, Xiaoli Gao, Sangeeta Y. Bhuyan

First published: 19 February 2020 | <https://doi.org/10.1111/eje.12515>

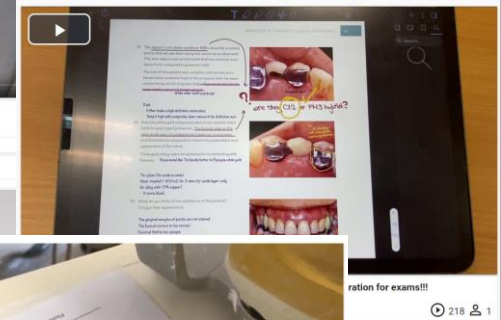
Observation of expert-student dialogue - OVED

- Treatment planning
- Q and A
- Competence assessment

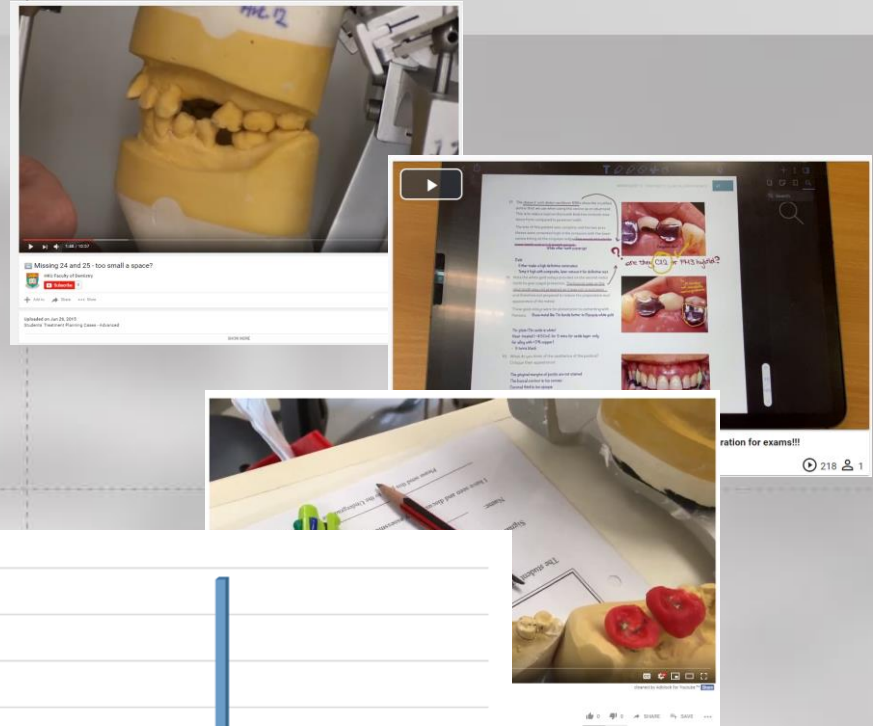
Case
presentation –
8 mins

Patient
treatment
2 hours

Self-evaluation
and feedback
8 mins

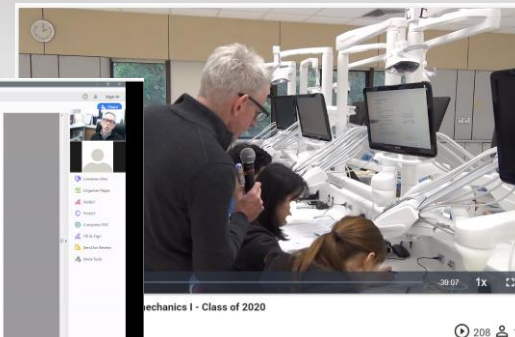
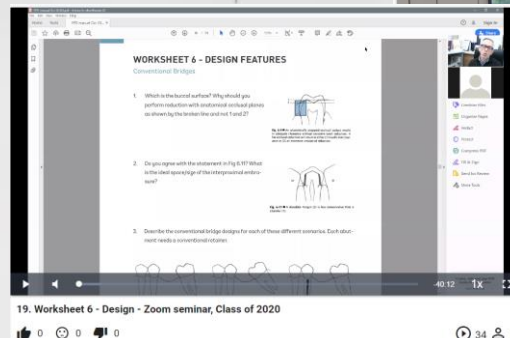
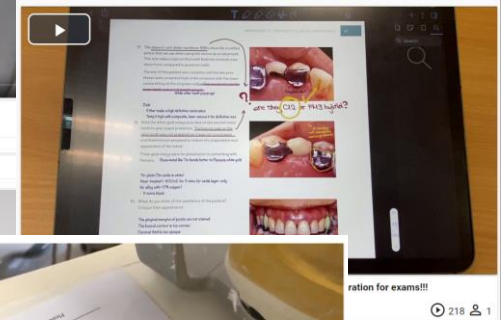


- **Treatment planning**
- **Q and A**
- **Competence assessment**



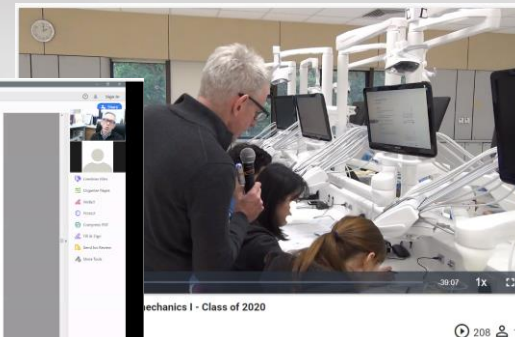
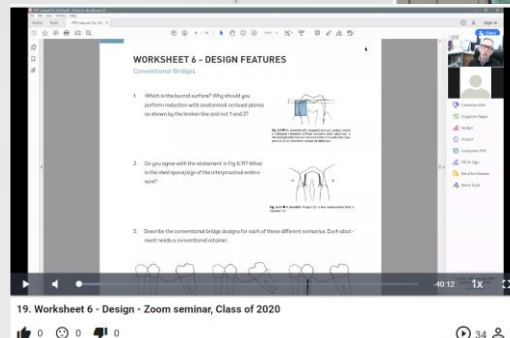
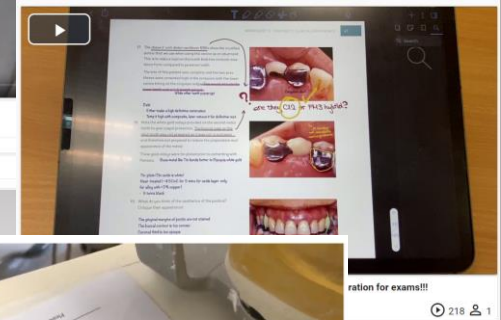
Observation of expert-student dialogue - OVED

- Treatment planning
- Q and A
- Competence assessment
- Flipped class



Observation of expert-student dialogue - OVED

- Treatment planning
- Q and A
- Competence assessment
- Flipped class
- Clinical problem scenarios



Flipped class – Synthetic clinical experience



Flipped class – worksheets

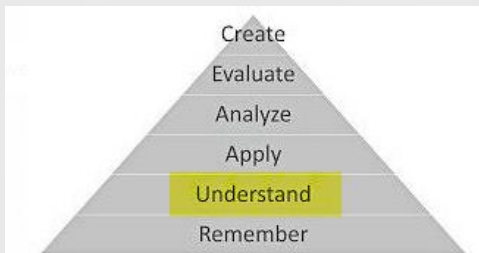
COMPONENTS & TYPES OF BRIDGES

Course Introduction

To be completed by the first Sim lab session.

Components of bridges

1. What is an abutment?
2. What is a connector?



Flipped class – worksheets

COMPONENTS

Course Introduction

To be completed

Components

1. What is

2. What is

6b.

Why is the minor retainer different to the major retainer in design?



Create
Evaluate
Analyze
Apply
Understand
Remember

Flipped class – worksheets

COMPONENTS

Course Introduction

To be completed

Components

1. What is

2. What is

6b. 2. The pre
What a

What w
premoli

WORKSHEET 2C



13. Grade A B C D E



14. Grade A B C D E



15. Grade A B C D E

Margins			
Taper			
Contour			
Others			

Create
Evaluate
Analyze
Apply
Understand
Remember

Flipped class – worksheet Synthetic clinical experience

CO

Cou

W

Re

The premolar is root treated, what are the options for this edentulous span

What would be your framework design for the molar and premolar?



Create

Evaluate

Analyze

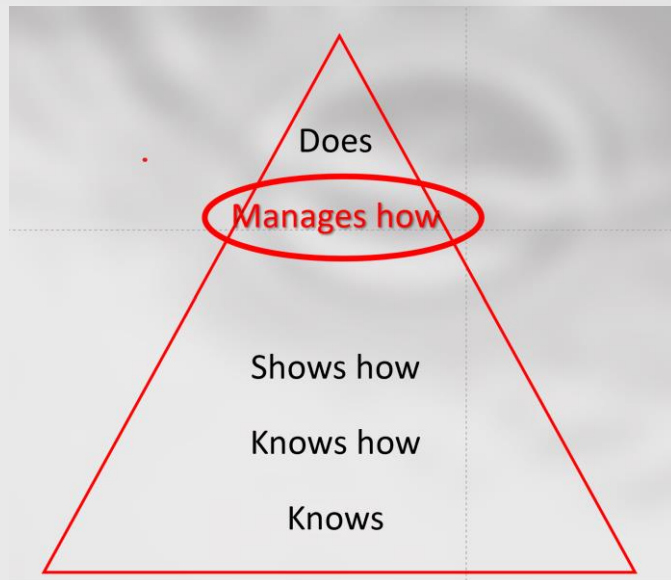
Apply

Understand

Remember

Summary

- We need to support students clinical transition to the high stakes, complex world of clinical care
- We are educationally bound to better prepare students for clinical teaching session in the care of their patients.



Thank you!



Michael Botelho – botelho@hku.hk