

Using OSCEs for formative Assessment of Clinical Skills at the TiHo

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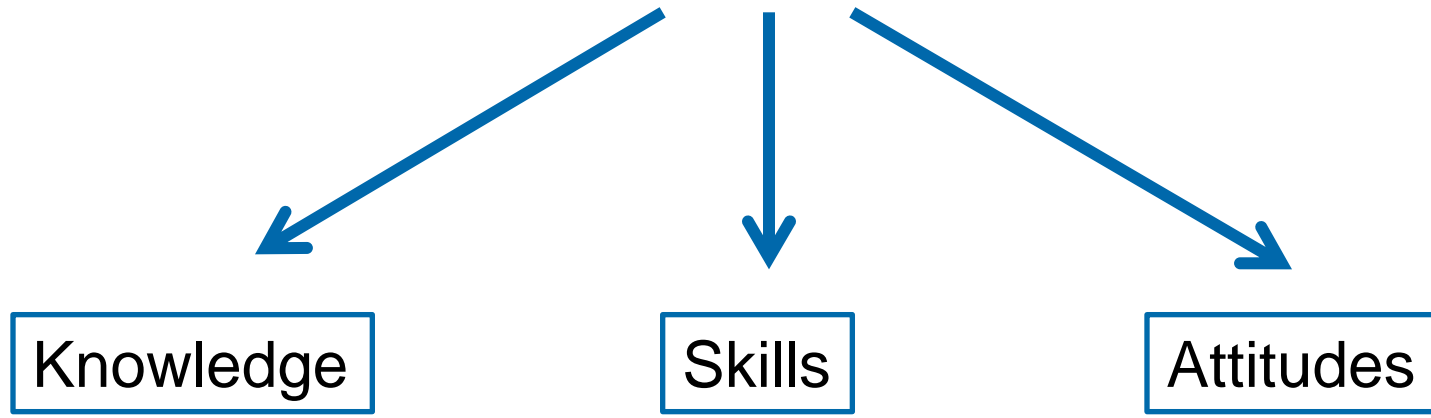
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About me...



Competences

COMPETENCES AT GRADUATION

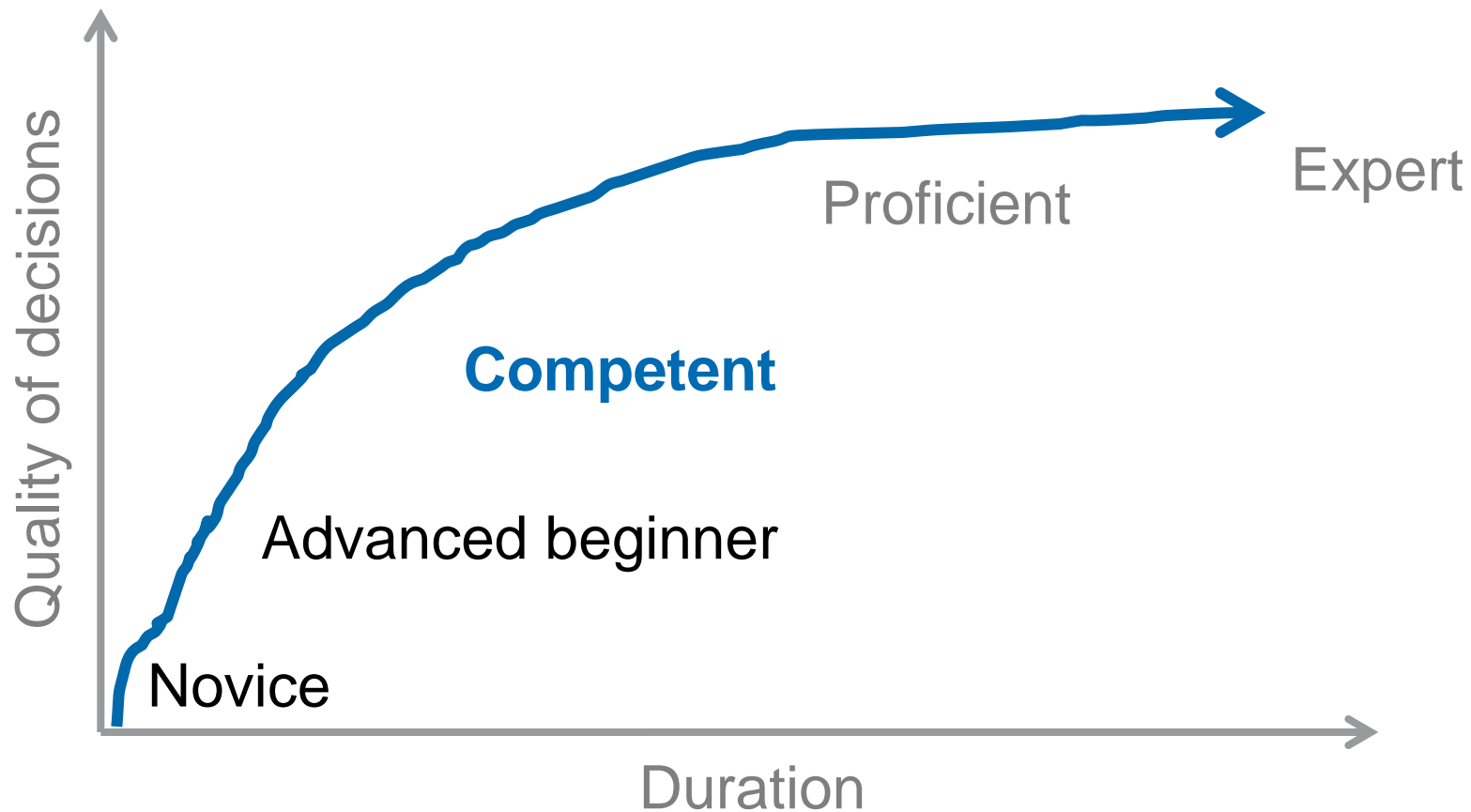


Practically-based competences →
at graduation & further professional training



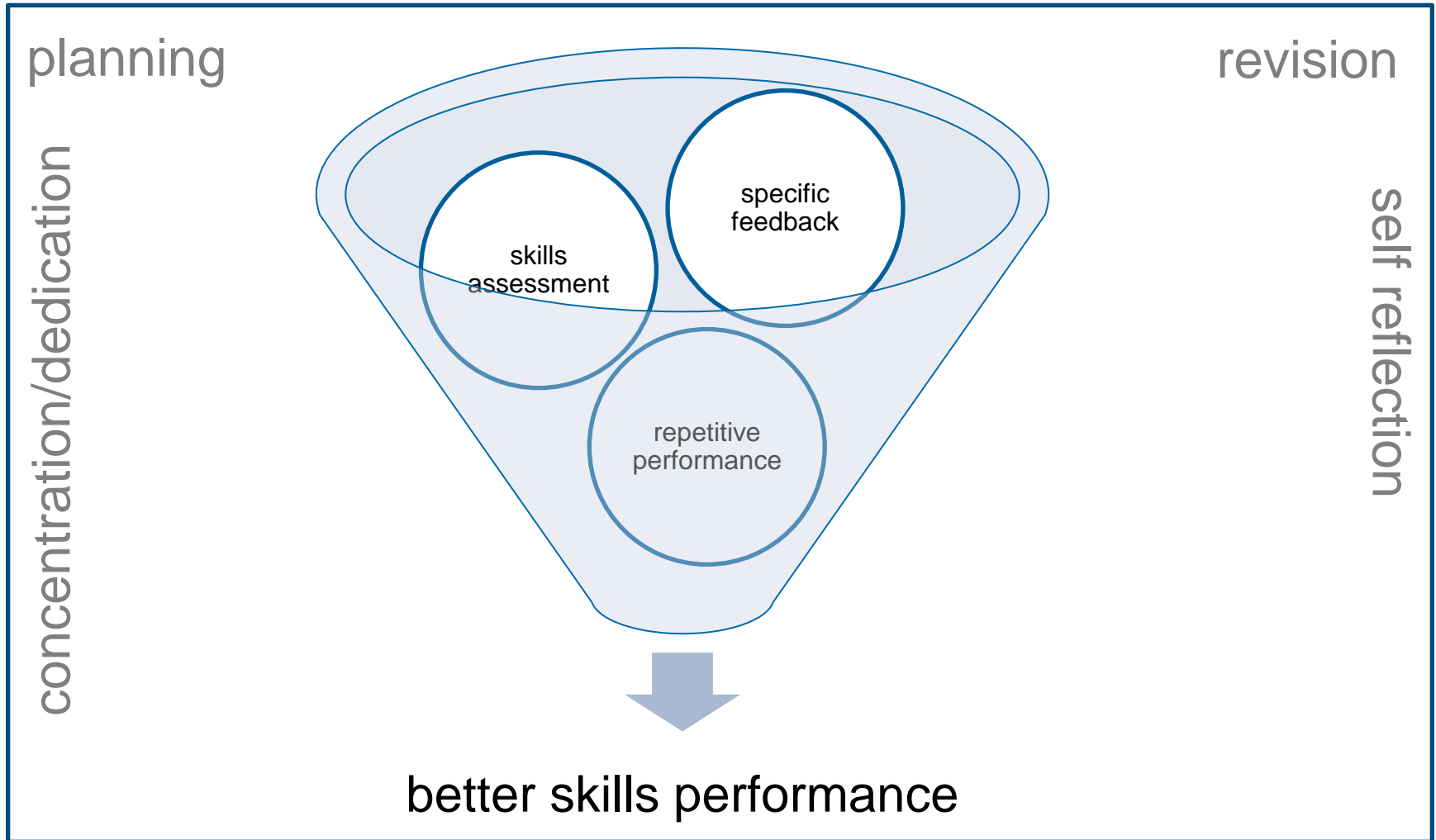
<http://www.eaeve.org/publications.html>

From Novice to Expert



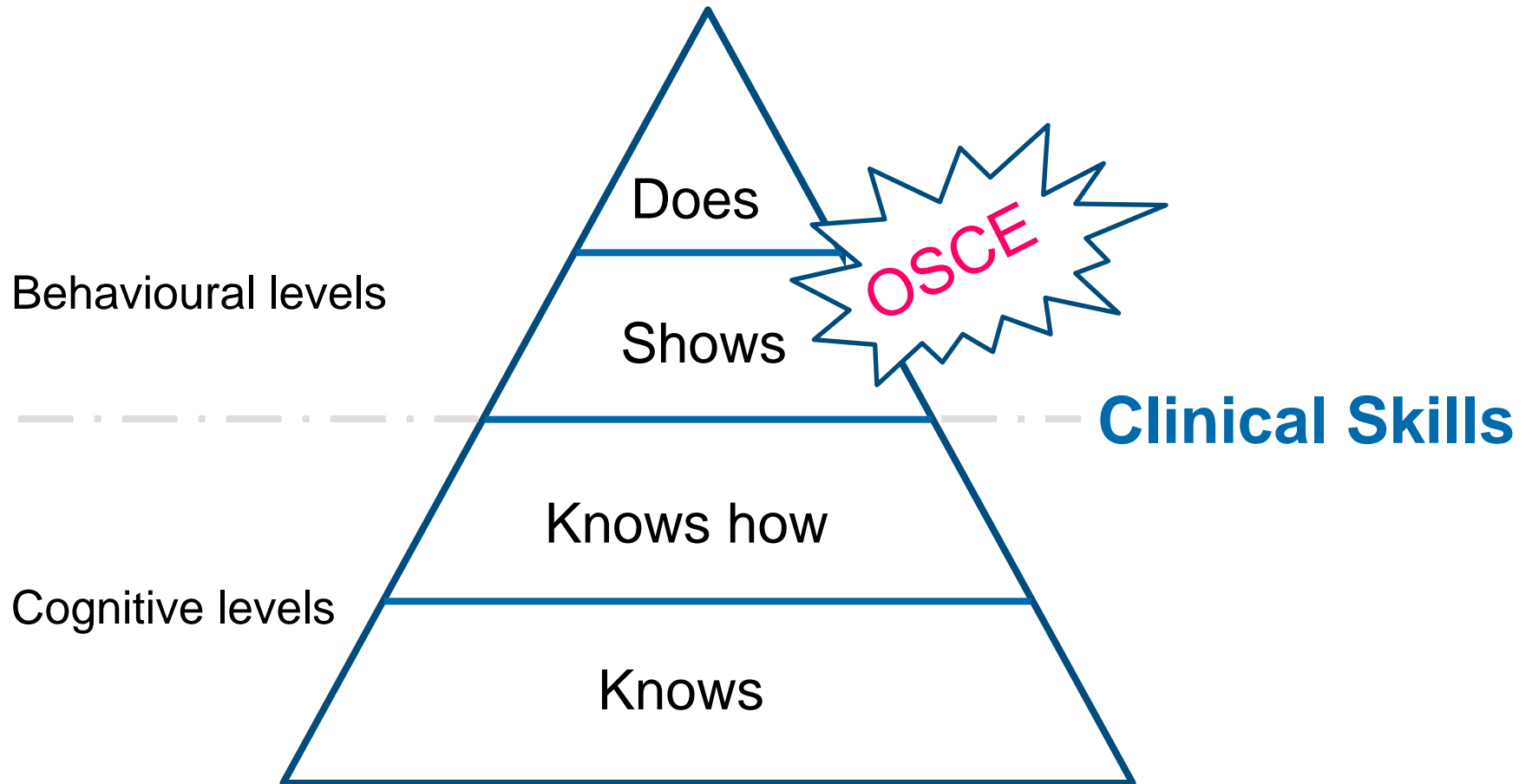
Dreyfus HL, Dreyfus SE. Mind over Machine. New York, NY: Free Press, 1988.

Development of clinical skills



Duvivier, R. J., van Dalen, J., Muijtjens, A. M., Moolaert, V., Van der Vleuten, C., Scherpbier, A. (2011). The role of deliberate practice in the acquisition of clinical skills. *BMC Medical Education*, 11: 101.

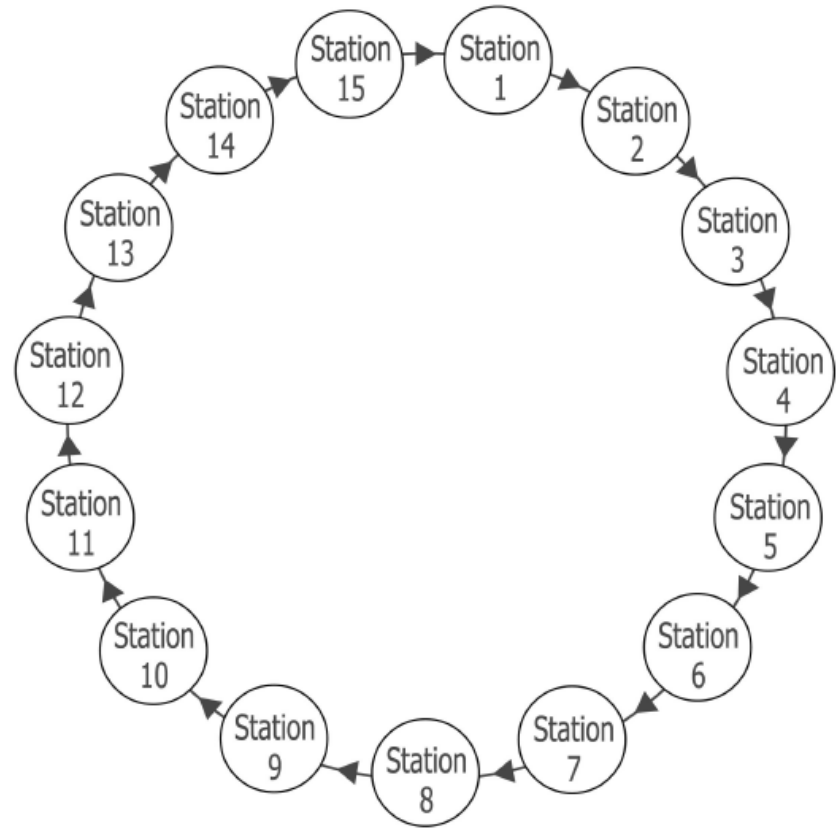
Assessment of Skills



Miller, G. E. (1990). The assessment of clinical skills/competence/performance. *Academic medicine*, 65(9), p.63-7.

OSCE - Objective Structured Clinical Examination

- ✓ Long history in medical education (approx. 40 years)
- ✓ Assessment for practical, technical & diagnostic skills, communication skills
- ✓ Examination consists of multiple station
- ✓ Students rotate round in sequences (same time)



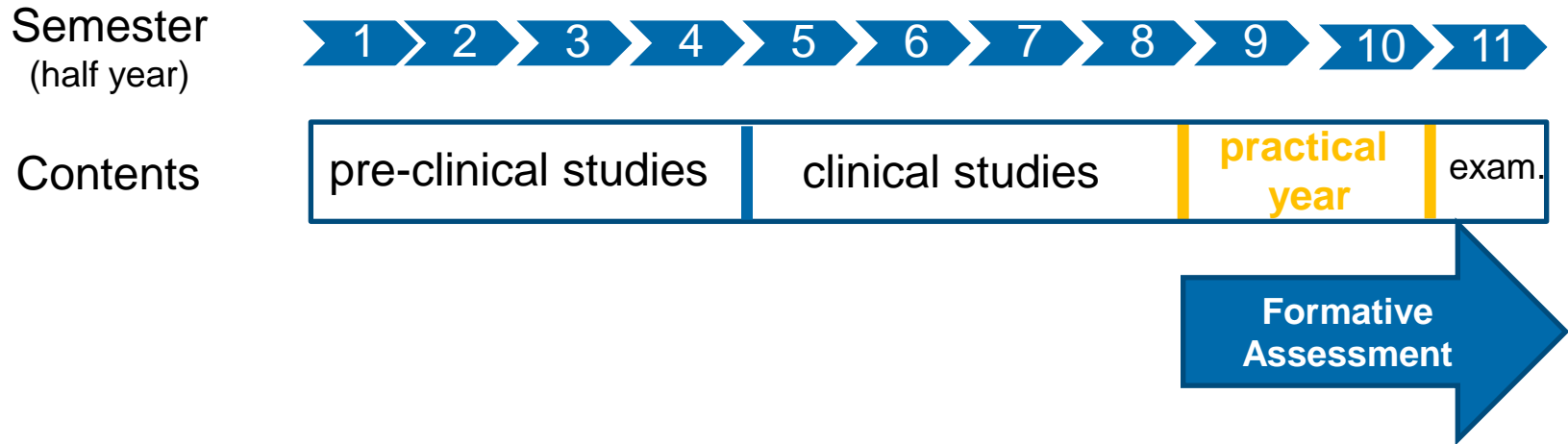
Davis, Margery H., et al. "The objective structured clinical examination (OSCE) as a determinant of veterinary clinical skills." *Journal of veterinary medical education* 33.4 (2006): 578-587.

Harden, R. M., Stevenson, M., Downie, W. W., & Wilson, G. M. (1975). Assessment of clinical competence using objective structured examination. *British Medical Journal*, 1(5955), 447.

Why formative OSCEs?



Organization of the curriculum (TiHo)



Practical year (“orientation phase”):

The practical year was introduced to involve the students more in the clinical and scientific working day. The practical year includes the 9th and 10th semester and forms a transition between the tightly organised studies and the following career.

Project 1 – Surgical Skills

Clinic for Swine and Small Ruminants



Project – Clinic for Swine and Small Ruminants

Surgical training

Surgical course during the *Practical Year*:



General skills

Clinic-specific skills

Formative Assessment and Feedback

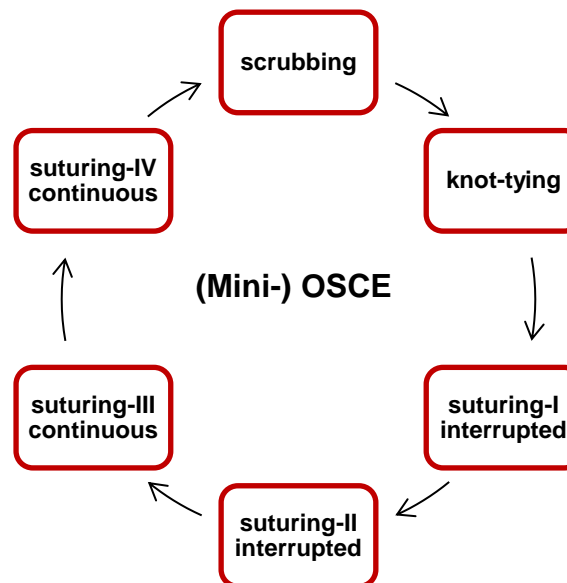
Procedures on live animals

Peer teaching:

- Scrubbing, gowning, gloving
- Instrument handling
- Knot-tying
- Suturing (interrupted)

Seminar:

- Scrubbing, gowning, gloving
- Often used Instruments
- Knot-tying
- Suturing (interrupted + continued)



Groups of 3 students:

- Surgeon, assistant surgeon, anesthetist
- Work independently, but supervised by senior:
 - Caesarian section, swine
 - Castration, swine
 - Median celiotomy, sheep
 - Castration, ram

OSCE

Objective Structured Clinical Examination

Examinee...

- reads the task
- enters the station
- undertakes the task

Surgical Skills

- Students sheet -

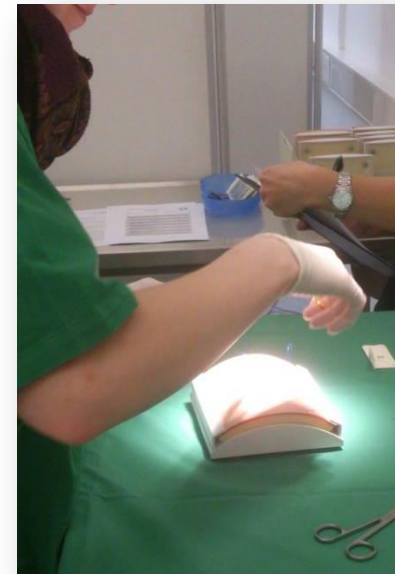
Scenario:

Dr. Sommer is called to an emergency and now asks you to close the dog's skin incision for him.

Candidate tasks:

You will be provided with swaged on suture material.

1. **Remove the suture material from the package** as previously demonstrated in class.
2. **Using the appropriate instruments** place three single surgeon's knots and **cut the suture ends.**



Examiner & Marking

- ✓ Checklist
- ✓ Global Rating Scales (GRS)



Surgical Skills - Marking Sheet -		
Code/ID:	Examiner:	
The candidate should do the following:	YES	NO
1. After opening the suture package then the candidate uses needle drivers to grasp the suture material needle at a point 2/3 of the way along the needle's curve	○	○
2. Pulls the material out of the package by pulling the needle, and gathers the excess suture in the hand holding the needle drivers so that it is not trailing below their waist level	○	○
3. Picks up thumb forceps in the opposite hand	○	○
4. Selects appropriate forceps for aiding skin suturing in a dog (small animal)	○	○
5. Holds thumb forceps in pincher like grip between thumb and index finger whenever being used to hold tissue or the needle	○	○

Global score:					
○	○	○	○	○	○
1	2	3	4	5	6
Inferior	Poor	Borderline Unsatisfactory	Borderline Satisfactory	Good	Excellent

Cunnington, J. P. W., A. J. Neville, and G. R. Norman. "The risks of thoroughness: reliability and validity of global ratings and checklists in an OSCE." *Advances in Health Sciences Education* 1.3 (1996): 227-233.

Feedback – Clinic for Swine and Small Ruminants

	Excellent	Satisfactory	Border-line	Needs improvement
Maintaining sterility	1	2	3	4
Instrument handling	1	2	3	4
Motor skills	1	2	3	4
Suture spacing	1	2	3	4
Wound closure	1	2	3	4

Very well done!		Suggestions for future learning:	
Given informations were realistic	<input type="radio"/>	Carefully read the task, take your time	<input type="radio"/>
Thorough and serene	<input type="radio"/>	Think first, act foresightful	<input type="radio"/>
Structured and concentrated	<input type="radio"/>	Take the assessment seriously	<input type="radio"/>
Approachable and friendly	<input type="radio"/>	Be aware of your body language	<input type="radio"/>
Well knowledge of course objectives	<input type="radio"/>	Reconsider your knowledge	<input type="radio"/>
Gentle tissue handling	<input type="radio"/>	Adapt your tissue handling	<input type="radio"/>

Project – Clinic for Swine and Small Ruminants

Why formative...?

Plenty of surgical procedures are covered by the clinics in the *Practical Year* of the curriculum.



- Prepare students for the surgical interventions on live animals
 - Opportunity to make mistakes when using models
 - Identify and correct deficits in surgical skills before working with live animals
 - Correct subjective estimate of surgical competences
 - Chance to receive immediate verbal and written feedback

- Optimize the process of the surgical interventions in the clinical setting
 - Staff rely on student minimum competence in surgical skills (e.g. naming instruments, maintaining sterility, knot security)
 - Clinic staff is aware of skill deficits in student groups before the procedure
 - Opening the communication between staff and student about surgical skills

Project – Clinic for Swine and Small Ruminants

What we learned:

- ✓ Need to explain students the purpose of formative assessment to reduce perceived pressure and anxiety
- ✓ Feedback is strongly appreciated
- ✓ Clinic staff notice optimised process of surgical interventions
 - ✓ Operating time
 - ✓ Knowledge
 - ✓ Skills
 - ✓ Subject-specific discussions
 - ✓ Less complications



Project 2 – Clinical Skills

Clinic for Small Animals



Project - Clinic for Small Animals



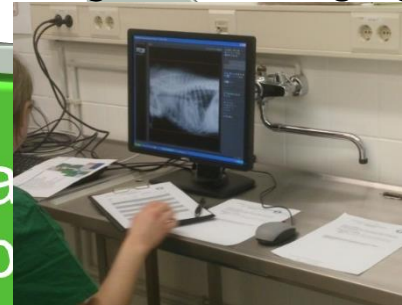
Consultation / Laboratory



Surgical Skills



Diagnostic Imaging



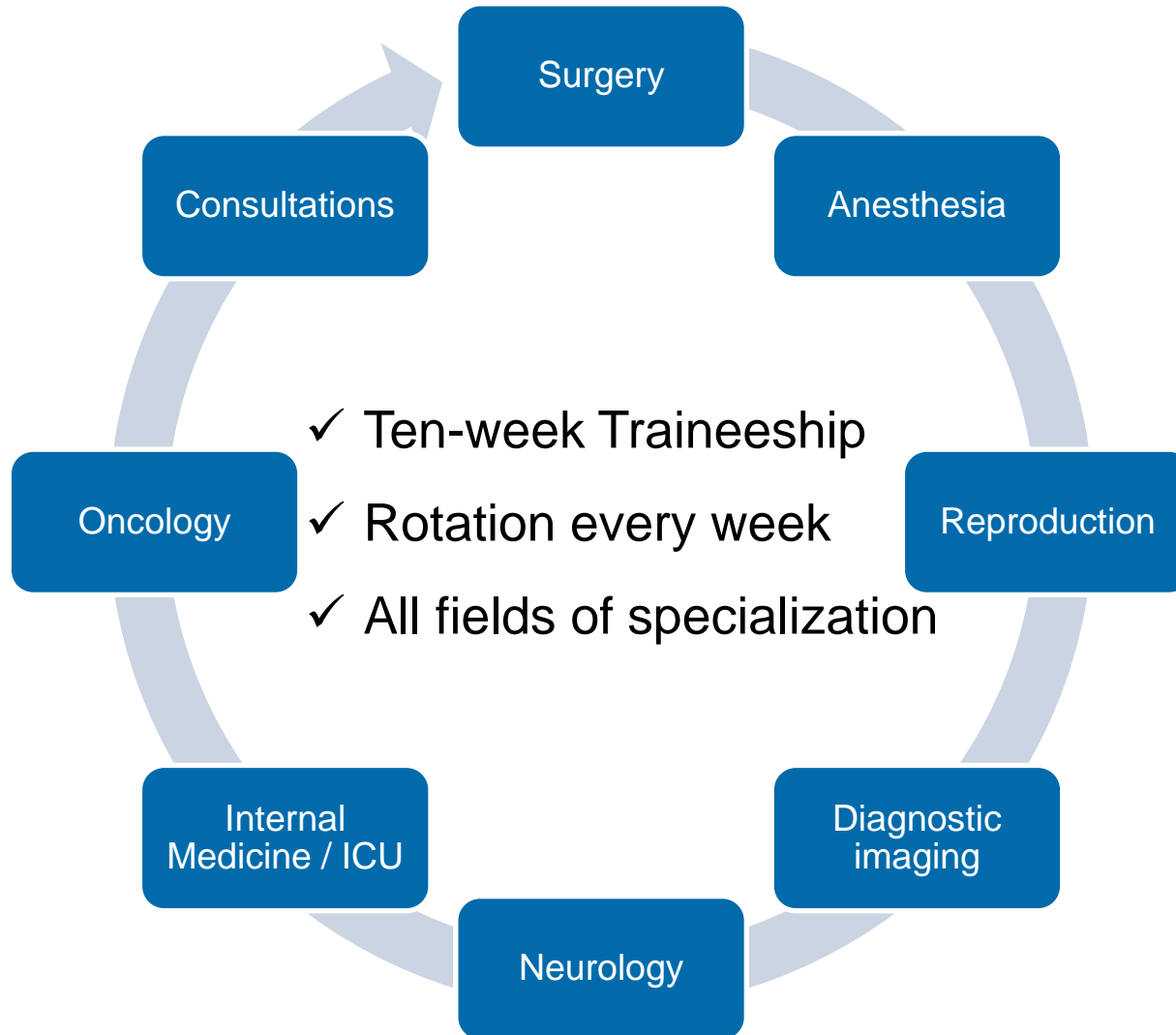
Anaesthesia



Communication



Project - Clinic for Small Animals



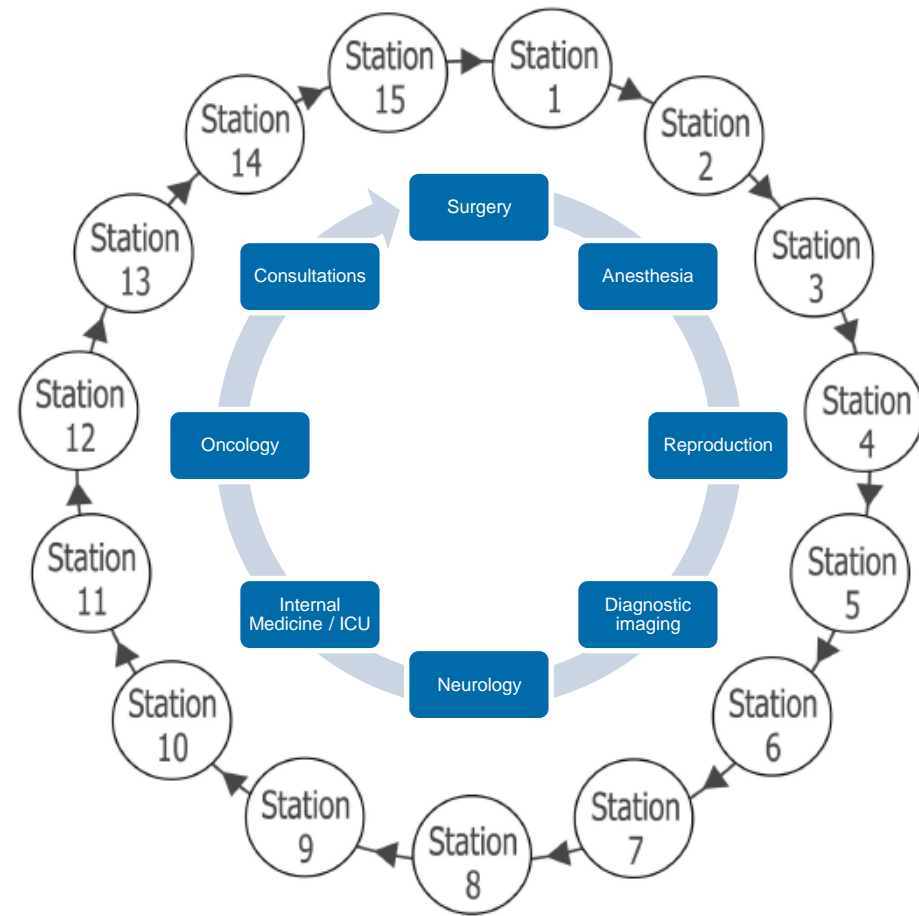
Project - Clinic for Small Animals

- ✓ End of the clinical rotation
- ✓ 15 stations OSCE
- ✓ Formative assessment
- ✓ Alignment to rotations in clinic
- ✓ Formative assessment to review the training
- ✓ Feedback the students practical skills



Project - Clinic for Small Animals

- 1) Clinical Examination
- 2) Communication Skills
- 3) Ultrasound
- 4) Anesthesia-Machine
- 5) Washing & Scrubbing
- 6) Gloving
- 7) X-Ray
- 8) Interrupted Suture-Technique
- 9) Continuous Suture-Technique
- 10) ECG
- 11) Intubation (endotracheal)
- 12) Bandaging
- 13) Catheterization
- 14) Injections
- 15) Identification

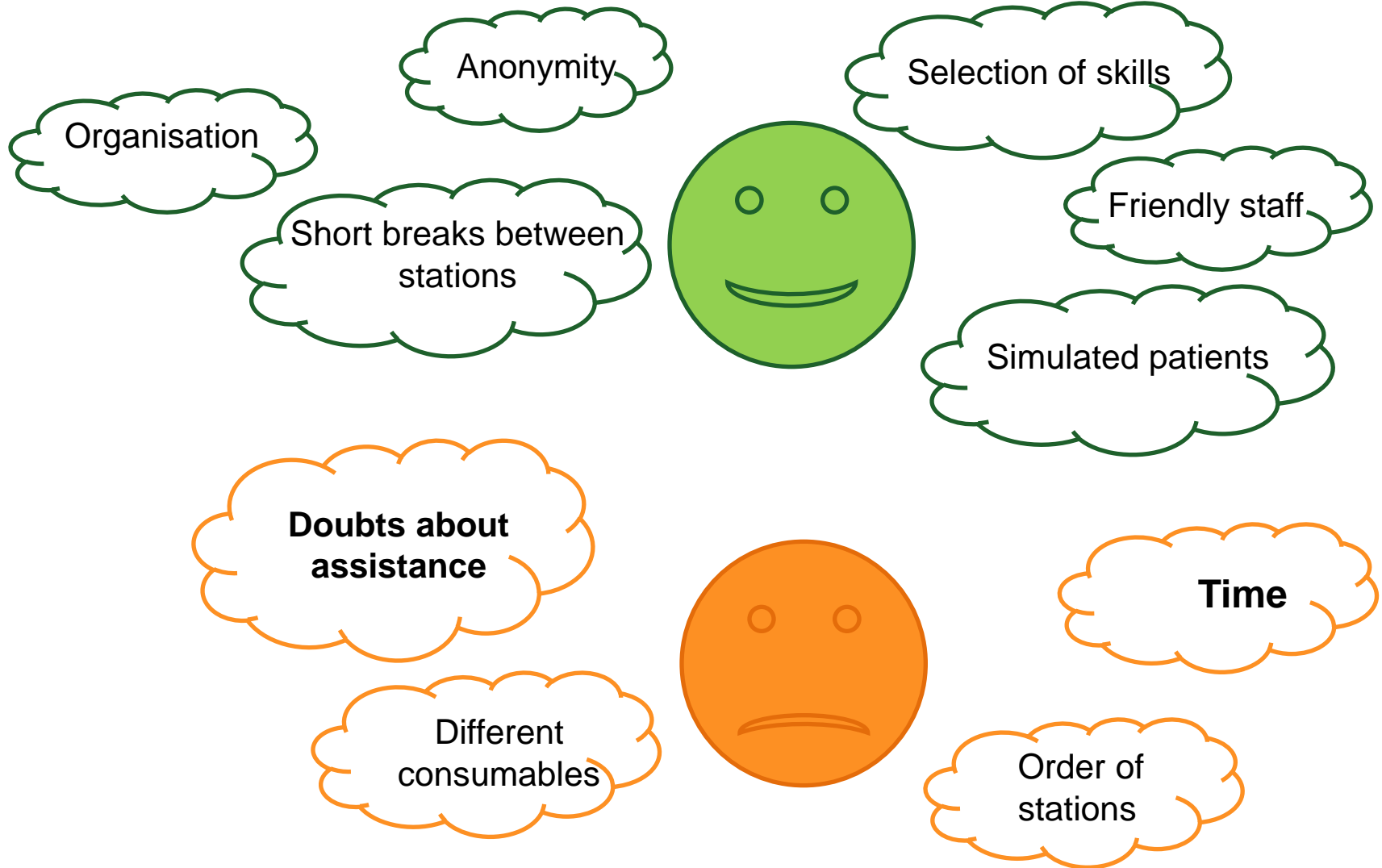


Project - Clinic for Small Animals



- ✓ Groupfeedback students and examiners
- ✓ Individual feedback via e-mail
- ✓ Collect the main difficulties with the examiners

Project - Clinic for Small Animals

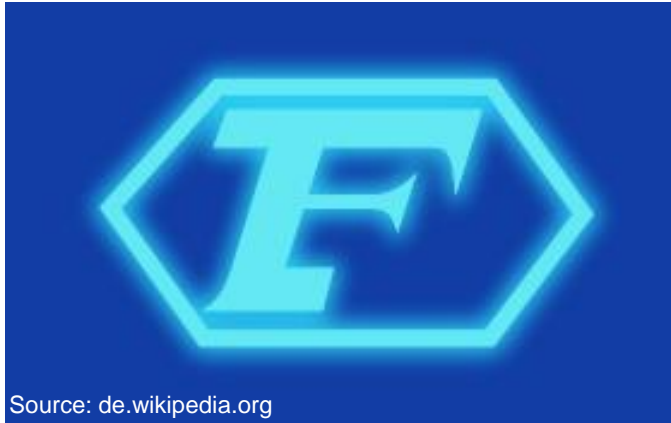


Summary

- ✓ Feedback on students` performance
- ✓ OSCE measures students` skills
- ✓ Drives & supports student learning

Students can be more confident & competent in a clinical context

Future goals...



- ✓ eOSCEs/DOPS
- ✓ Formative & Summative
- ✓ Assessment on demand

Semester
(half year)



Contents



Team



Federal Ministry
of Education
and Research



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Clinic for small animals

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PD Dr. Sabine Kramer...

Thank you!



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www.flic.kr.com/29513210@N004837529409/

References and sharing experience

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Bloom, B. S., & Krathwohl, D. R. (1956). Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain.

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Wass, V., Van der Vleuten, C., Shatzer, J., & Jones, R. (2001). Assessment of clinical competence. *The Lancet*, 357(9260), 945-949.

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A Guide to Assessment in Veterinary Medicine



Sharing experiences!

- ✓ Co-authored by an intern. collaboration
- ✓ 10 Chapters, 3 Appendix
- ✓ Online available (for free)



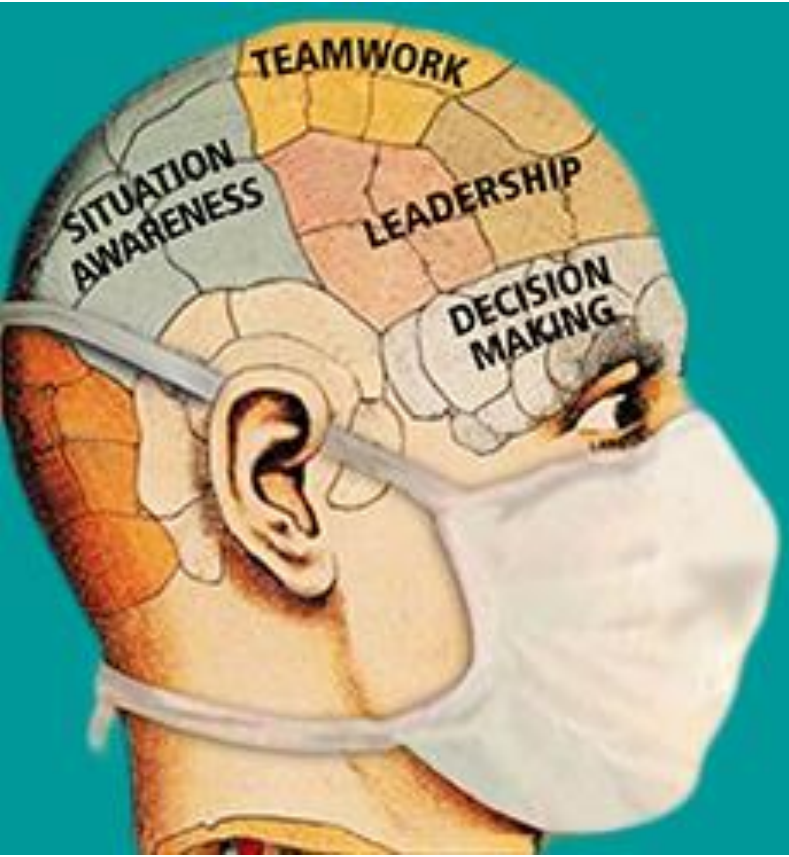
A Guide to Veterinary Clinical Skills Laboratories



<http://www.bris.ac.uk/vetscience/media/docs/csl-guide.pdf>

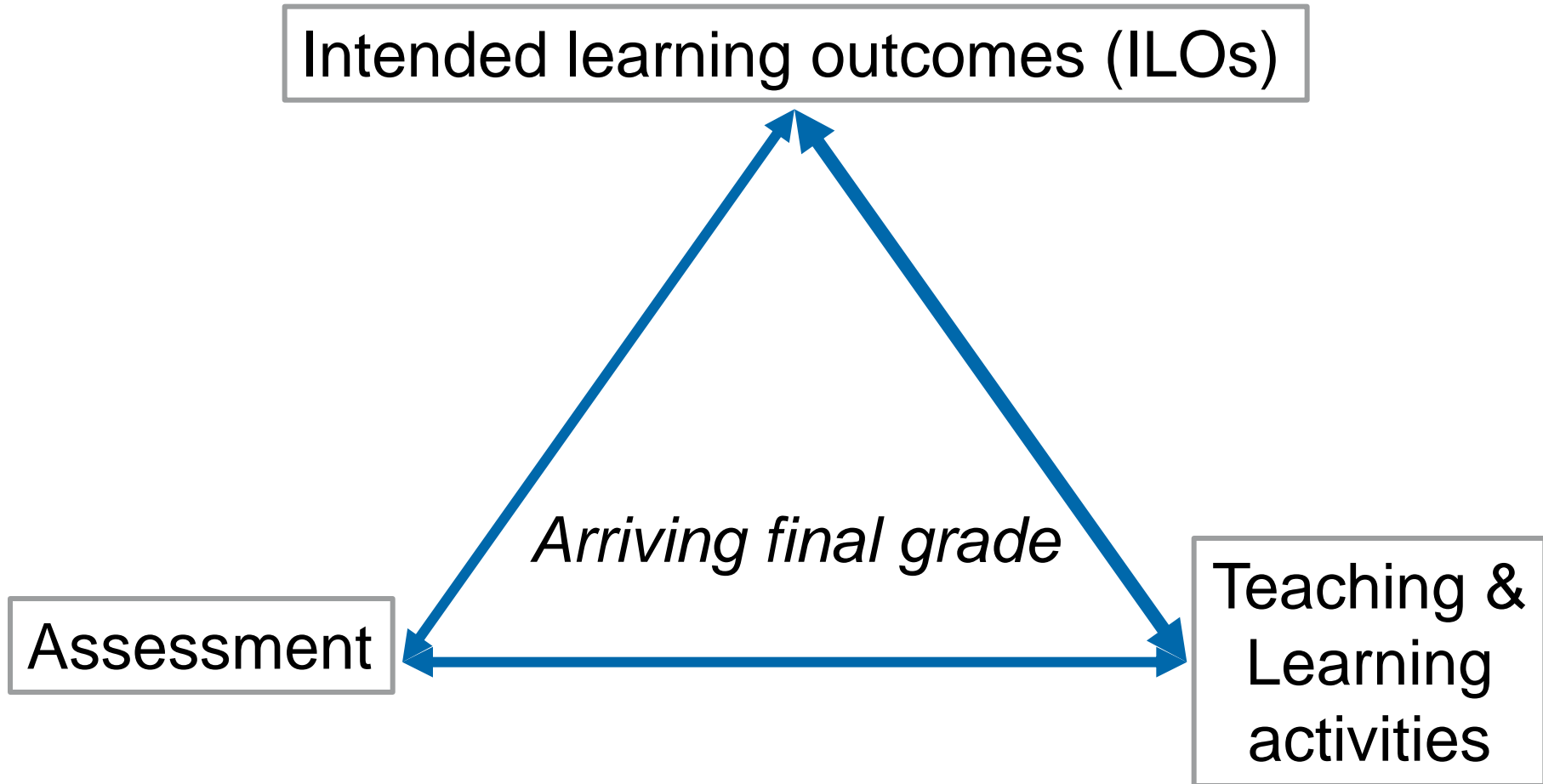


NOTSS: Non-Technical Skills for Surgeons



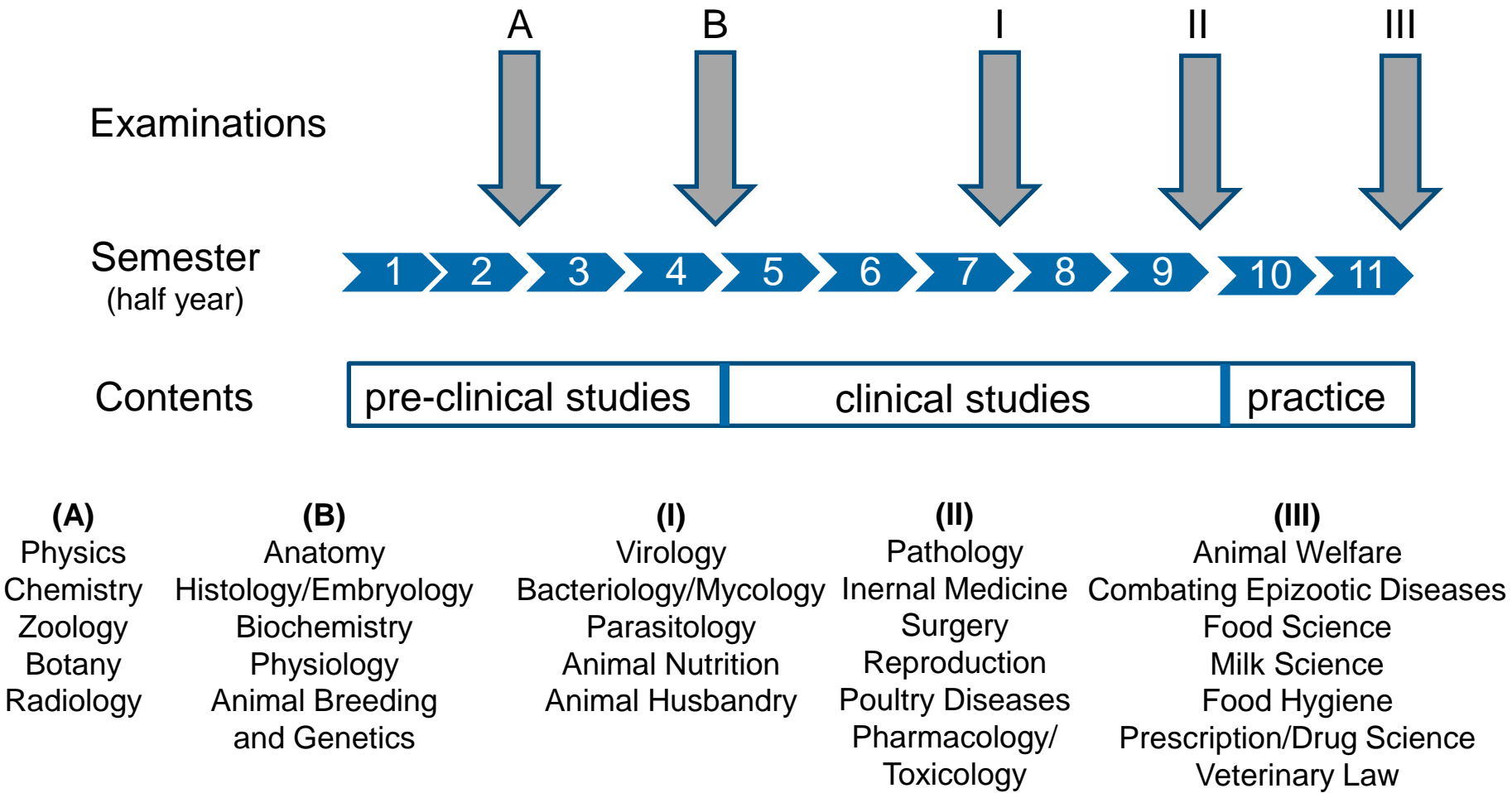
<http://www.abdn.ac.uk/iprc/notss/>

Constructive Alignment



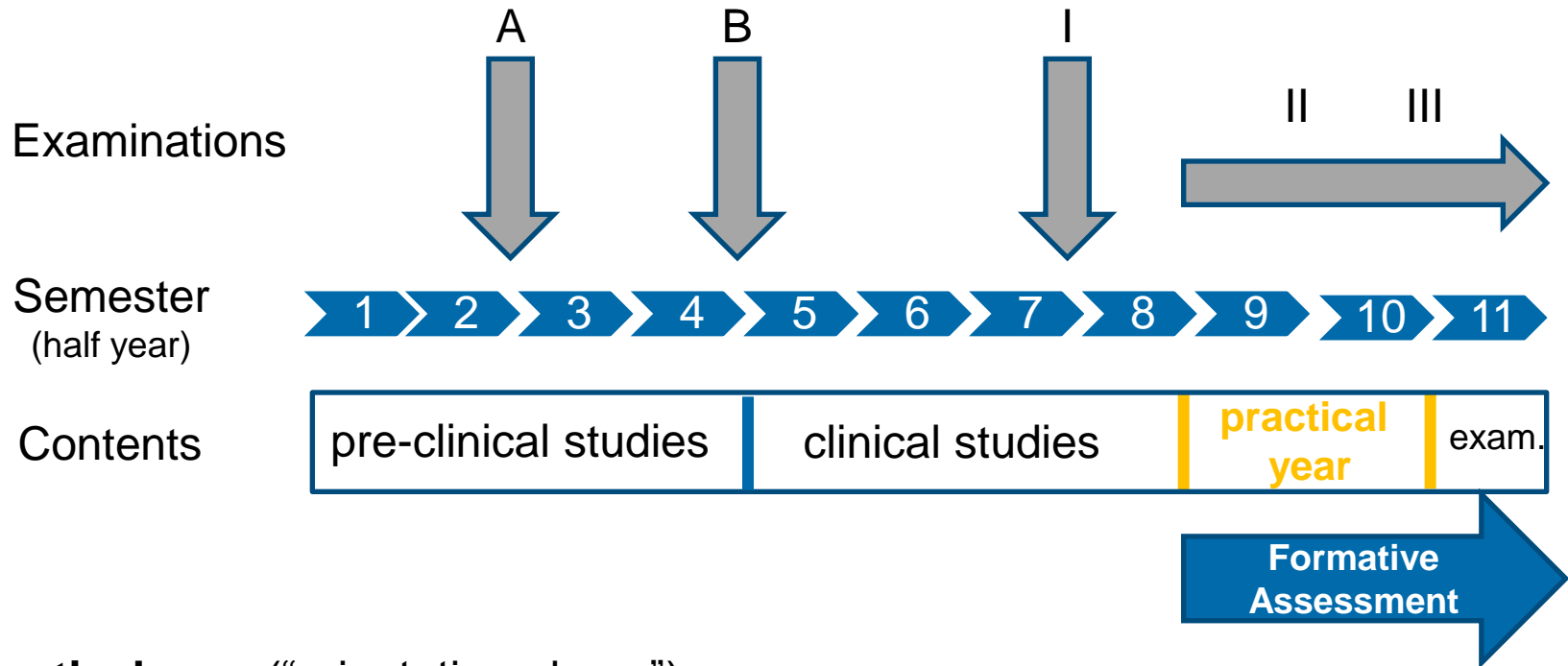
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Organization of the German curriculum (national)



Baljer, 2004 JVME

Organization of the curriculum (TiHo)



Practical year (“orientation phase”):

The practical year was introduced to involve the students more in the clinical and scientific working day. The practical year includes the 9th and 10th semester and forms a transition between the tightly organised studies and the following career.

Dreyfus Model Of Knowledge Development

- (1) In the novice stage, the freshman medical student begins to learn the process of taking a history and memorizes the elements, chief complaint, history of the present illness, review of systems, and family and social history.
- (2) In the advanced beginner stage, the junior medical student begins to see aspects of common situations, such as those facing hospitalized patients (admission, rounds, discharge) that cannot be defined objectively apart from concrete situations and can only be learned through experience. Maxims emerge from that experience to guide the learner.
- (3) In the competent stage, the resident physician learns to plan the approach to each patient's situation. Risks are involved, but supervisory practices are put in place to protect the patient. Because the resident has planned the care, the consequences of the plan are knowable to the resident and offer the resident an opportunity to learn.
- (4) In the proficient stage, the specialist physician early in practice struggles with developing routines that can streamline the approach to the patient. Managing the multiple distracting stimuli in a thoughtful way is intellectually and emotionally absorbing.
- (5) In the expert stage, the mid-career physician has learned to recognize patterns of discrete clues and to move quickly, using what he or she might call "intuition" to do the work. The physician is attuned to distortions in patterns or to slow down when things "don't fit" the expected pattern.