Work-based Assessment

ADEA/ADEE Meeting: Shaping the Future of Dental Education
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Why outcomes?

- Why did we replace curriculum objectives with curriculum outcomes?
- What are outcomes?

Outcome systems

CanMeds

- Medical expert
- Communicator
- Collaborator
- Manager
- Health advocate
- Scholar
- Professional

ACGME

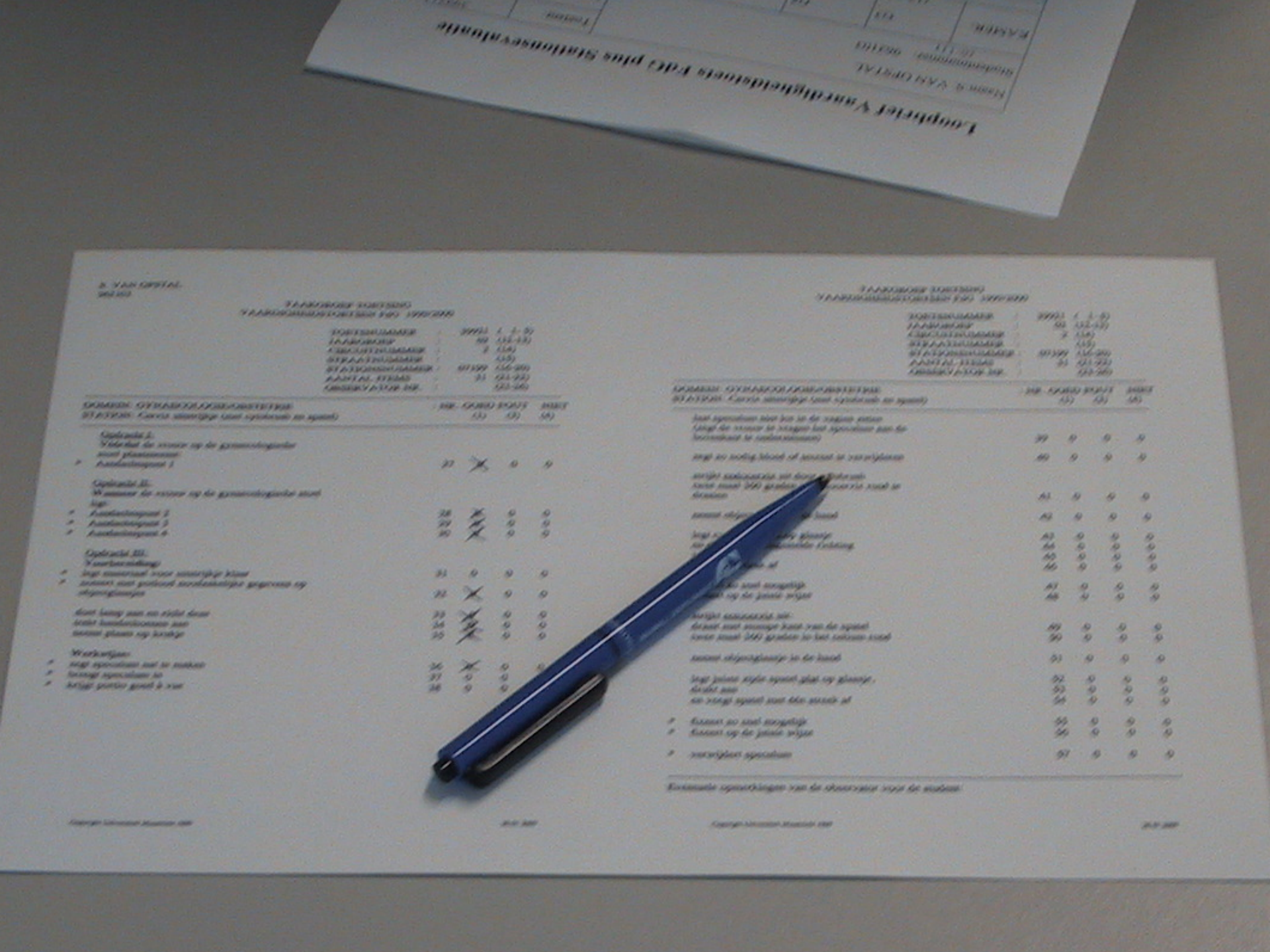
- Medical knowledge
- Patient care
- Practice-based learning & improvement
- Interpersonal and communication skills
- Professionalism
- Systems-based practice

GMC

- Good clinical care
- Relationships with patients and families
- Working with colleagues
- Managing the workplace
- Social responsibility and accountability
- Professionalism

Typical for outcomes

- Emphasis on competences
- Emphasis on behaviours/performance
- Emphasis on non-discipline specific competences



Reliability of a number of measures

Testing Time in Hours	MCQ[1]	Case-Based Short Essay[2]	PMP[1]	Oral Exam[3]	Long Case[4]	OSCE[5]	Mini CEX[6]	Practice Video Assess-ment[7]	In-cognito SPs[8]
1	0.62	0.68	0.36	0.50	0.60	0.47	0.73	0.62	0.61
2	0.76	0.73	0.53	0.69	0.75	0.64	0.84	0.76	0.76
4	0.93	0.84	0.69	0.82	0.86	0.78	0.92	0.93	0.92
8	0.93	0.82	0.82	0.90	0.90	0.88	0.96	0.93	0.93

[1]Norcini et al., 1985
[2]Stalenhoef-Halling et al., 1990
[3]Swanson, 1987
[4]Wass et al., 2001
[5]Petrusa, 2002
[6]Norcini et al., 1999
[7]Ram et al., 1999
[8]Gorter, 2002

Reliability of an oral examination (Swanson, 1987)

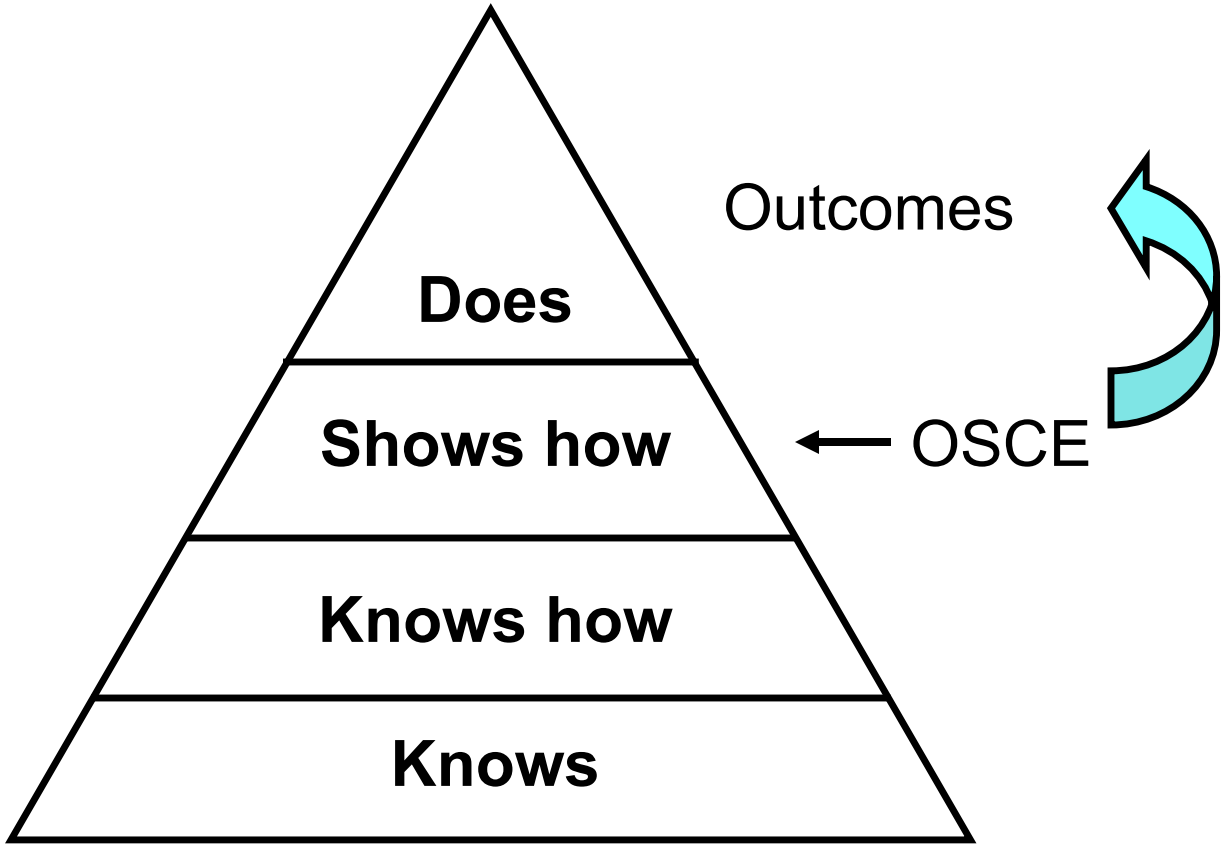
Testing Time in Hours	Number of Cases	Same Examiner for All Cases	New Examiner for Each Case	Two New Examiners for Each Case
1	2	0.31	0.50	0.61
2	4	0.47	0.69	0.76
4	8	0.47	0.82	0.86
8	12	0.48	0.90	0.93

Checklist/rating reliability

Test length In hours	Examiners using Checklists	Examiners using Rating scales
1	0.44	0.45
2	0.61	0.62
3	0.71	0.71
4	0.76	0.76
5	0.80	0.80

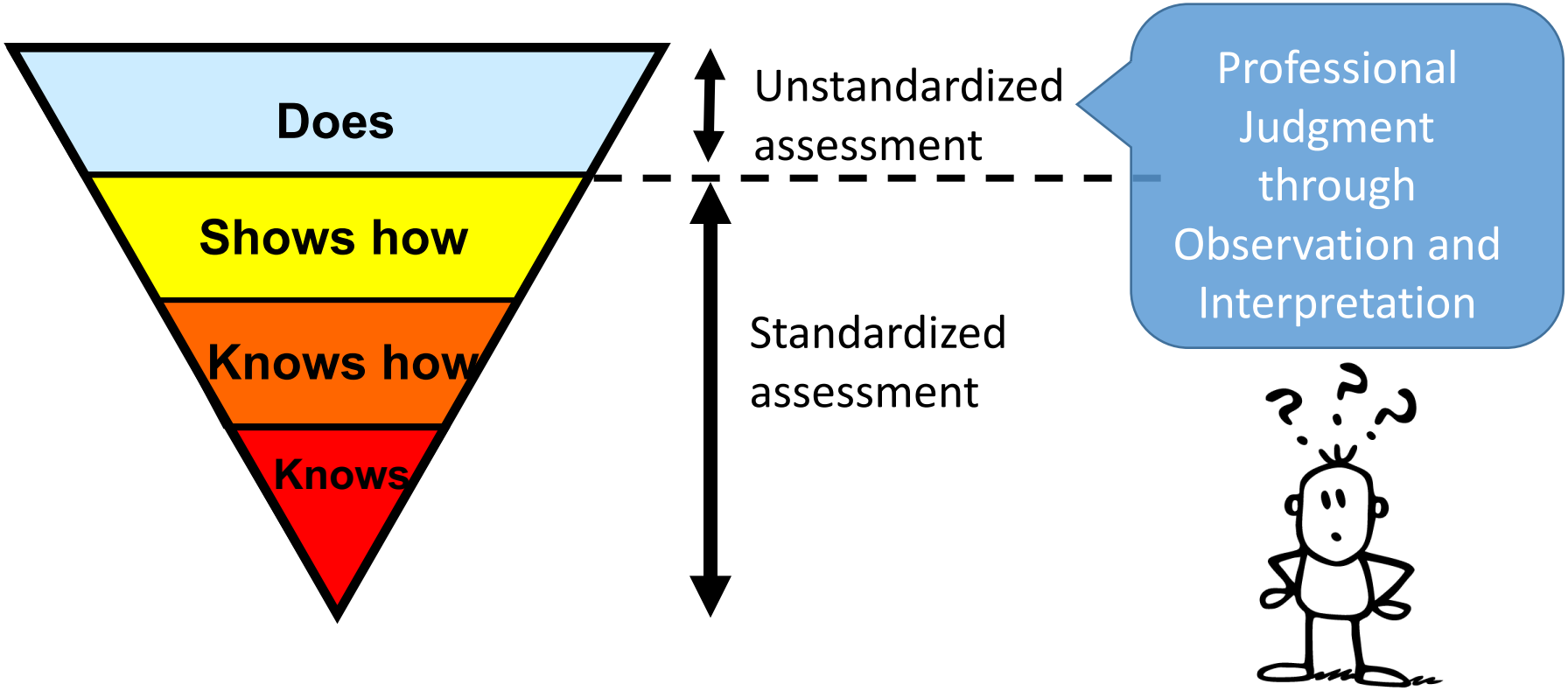
Van Luijk & van der Vleuten, 1990

Miller's competency pyramid



Miller GE. The assessment of clinical skills/competence/performance. Academic Medicine (Supplement) 1990; 65: S63-S7.

Assessing complex behavioural skills



Assessing does

- We need measures that sample widely
  - Across content
  - Across examiners
- When this is done, subjectivity is no real threat
- What is needed, is the provision of feedback!

Promising methods

- Direct observation: Single encounter methods
  - Mini-CEX
  - DOPS, OSATS
  - P-MEX
  - …….
- Global performance measures
  - Multi-Source Feedback (MSF or 360)
  - In-training Evaluation Reports (ITER)
- Aggregation and reflection measures
  - Logbook
  - Portfolio

Single encounter methods

- Repeated direct observations of clinical performance in practice using (generic) evaluation forms, completed by any significant observer (clinician, nurse, peer…..)

Mini Clinical Examination (Norcini, 1995)

- Short observation during clinical patient contact (±10 minutes)
- Oral evaluation
- Generic evaluation forms completed
- Repeated at least 4 times by different examiners
- (cf. http://www.abim.org/minicex/)

Norcini JJ, Blank LL, Arnold GK, Kimbal HR. 1995. The mini-CEX (Clinical Evaluation Exercise): A preliminary investigation. Annals of Internal Medicine 123:795-799.

Mini-CEX: Competencies Assessed and Descriptors

- **Medical Interviewing Skills**

  Facilitates patient's telling of story; effectively uses questions/directions to obtain accurate, adequate information needed; responds appropriately to affect, non-verbal cues.
- **Physical Examination Skills**

  Follows efficient, logical sequence; balances screening/diagnostic steps for problem; informs patient; sensitive to patient's comfort, modesty.
- **Humanistic Qualities/Professionalism**

  Shows respect, compassion, empathy, establishes trust; attends to patient's needs of comfort, modesty, confidentiality, information.
- **Clinical Judgment**

  Selectively orders/performs appropriate diagnostic studies, considers risks, benefits.
- **Counseling Skills**

  Explains rationale for test/treatment, obtains patient's consent, educates/counsels regarding management.
- **Organization/Efficiency**

  Prioritizes; is timely; succinct.
- **Overall Clinical Competence**

  Demonstrates judgment, synthesis, caring, effectiveness, efficiency.

Mini-Clinical Evaluation Exercise (CEX)

Evaluator: _____ Date: _____

Resident: _____ ○ R-1 ○ R-2 ○ R-3

Patient Problem/Dx: _____

Setting: ○ Ambulatory ○ In-patient ○ ED ○ Other _____

Patient: Age: _____ Sex: _____ ○ New ○ Follow-up

Complexity: ○ Low ○ Moderate ○ High

Focus: ○ Data Gathering ○ Diagnosis ○ Therapy ○ Counseling

1. Medical Interviewing Skills (○ Not observed)

1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

2. Physical Examination Skills (○ Not observed)

1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

3. Humanistic Qualities/Professionalism

1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

4. Clinical Judgment (○ Not observed)

1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

5. Counseling Skills (○ Not observed)

1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

6. Organization/Efficiency (○ Not observed)

1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

7. Overall Clinical Competence (○ Not observed)

1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

Mini-CEX Time: Observing _____ Mins Providing Feedback: _____ Mins

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

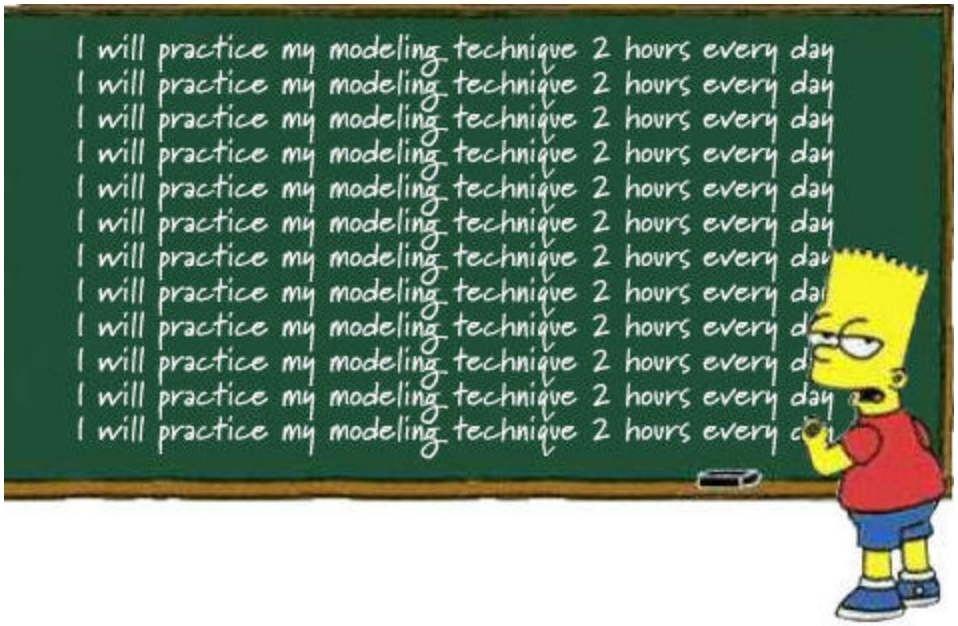
LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments: _____

_____ _____

Resident Signature Evaluator Signature

Mini-CEX Exercise



Start exercise

Mini-CEX

- What are strengths?
- What are threats?

Multi-source feedback

- Multiple raters (8-10)
- Different rater groups, including self-rating
- Questionnaires
  - Specifically on observable behaviour
  - Impression over a longer period of time

Quantitative/ Psychometric approach		Qualitative/ Interpretivist approach
Scores/grades	—	Words/narratives
Statistical computation	—	Professional judgment
Cut-off scores	—	Performance standards, EPAs, milestones
Algorithmic	—	Judgmental/triangulation of information
Bias	—	Perspective
True score	—	Multiple perspectives
Reliability	—	Saturation of information
Validity	—	Trustworthiness/credibility

PLOS ONE

RESEARCH ARTICLE

Exploring Residents' Communication Learning Process in the Workplace: A Five-Phase Model

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Abstract

Context

Competency-based education is a resurgent paradigm in professional medical education. However, more specific knowledge is needed about the learning process of such competencies, since they consist of complex skills. We chose to focus on the competency of skilled communication and want to further explore its learning process, since it is regarded as a main competency in medical education.

Objective

This study aims to explore in more detail the learning process that residents in general practice go through during workplace-based learning in order to become skilled communicators.

Methods

A qualitative study was conducted in which twelve GP residents were observed during their

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ORIGINAL ARTICLE

feedback has been unclear. This study demonstrates the benefits of moving away from a behaviouristic approach to assessment, based on punishment and rewards. It reveals the potential benefits of applying three constructivist principles to assessment: authenticity, empowering students with a more active role and gradual descaffolding to enable transformation towards a learning orientation.

performance, but often fails to reach its potential. Although different assessment cultures have been proposed, the impact of these cultures on students' receptivity to feedback is unclear. This study aimed to explore factors which aid or hinder receptivity to

assessment cultures which, if addressed by programme designers, could enhance the learning potential of feedback following assessments. Students should be enabled to have greater control over assessment and feedback processes, which should be as authentic as possible. Effective long-term mentoring facilitates this pro-

Professionalism Mini-Evaluation Exercise

PROFESSIONALISM MINI-EVALUATION EXERCISE

Evaluator:_____
Student/Resident:_____

Level: (please check) ?**3rd yr** ?**4th yr** ?**res 1** ?**res 2** ?**res 3** ?**res 4** ?**res 5**
Setting: ?**Ward** ?**Clinic** ?**OR** ?**ER**
?**Classroom** ?**Other**_____

	N/A	UN	BEL	MET	EXC
Listened actively to patient Showed interest in patient as a person Recognized and met patient needs					
Extended him/herself to meet patient needs					
Ensured continuity of patient care					
Advocated on behalf of a patient Demonstrated awareness of own limitations					
Admitted errors/omissions					
Solicited feedback					
Accepted feedback Maintained appropriate boundaries					
Maintained composure in a difficult situation					
Maintained appropriate appearance					
Was on time					
Completed tasks in a reliable fashion					
Addressed own gaps in knowledge and/or skills					
Was available to colleagues Demonstrated respect for colleagues Avoided derogatory language					
Maintained patient confidentiality					
Used health resources appropriately					

? Please rate this student's/resident's overall professional performance during THIS encounter: ? UNacceptable ? MET expectations
? BELow expectations ? EXCeeded expectations

? Did you observe a critical event? ? no ? yes (comment required)

Comments:

Multi-source feedback

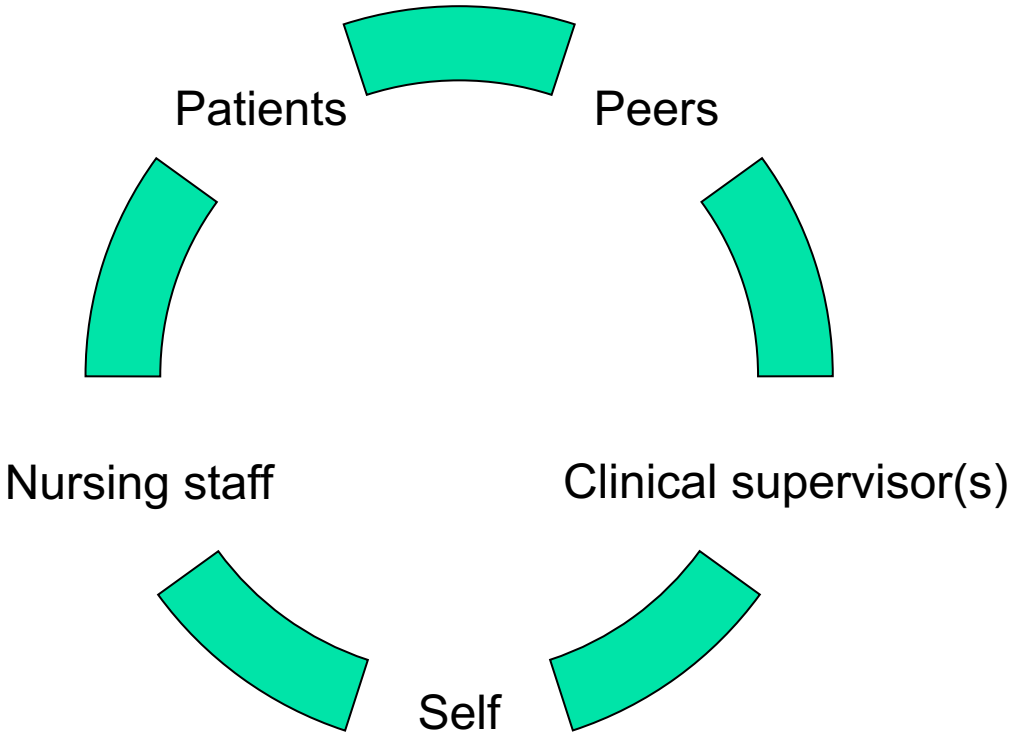
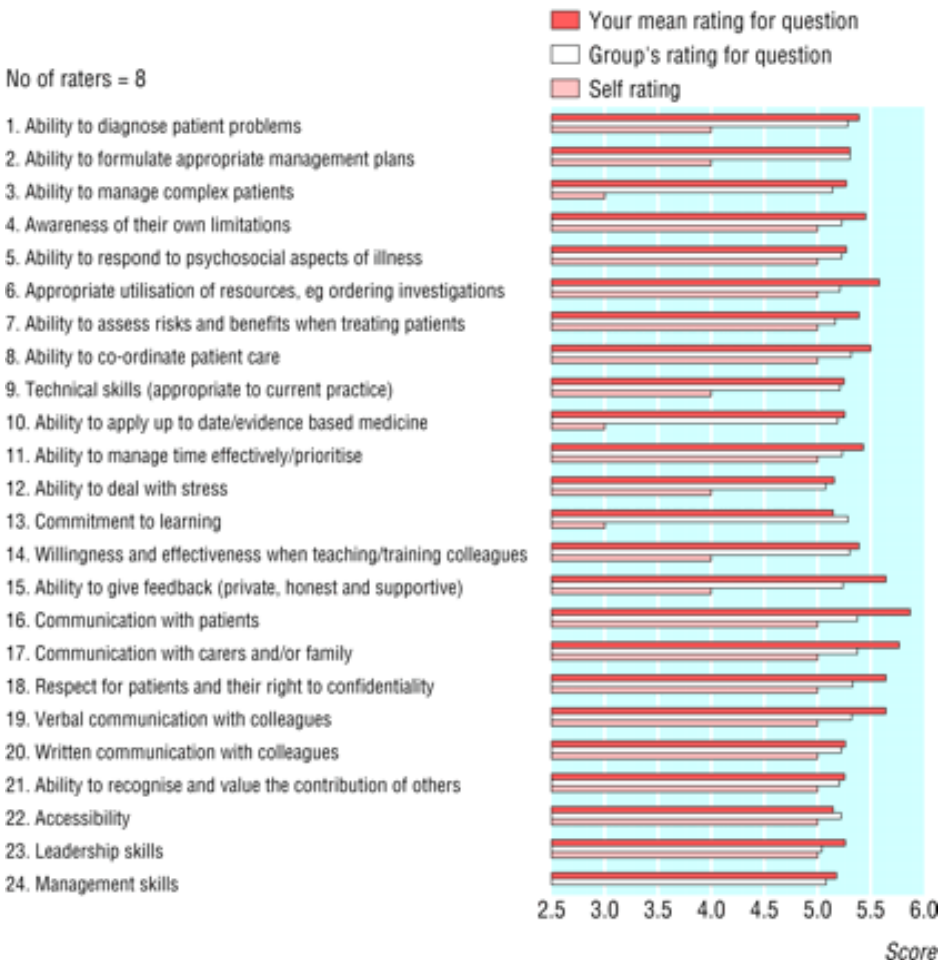


Illustration MSF feedback



SPRAT (Sheffield peer review assessment tool; Archer JC, Norcini J, Davies HA. 2005. Use of SPRAT for peer review of paediatricians in training. Bmj 330:1251-1253.)

Multi-source feedback procedure

- Step 1: select raters
  - Proposal by assessee in conjunction with supervisor
- Complete questionnaires
  - Raters remain anonymous
  - Assign responsibility to someone (i.e. secretary)
  - Require qualitative feedback
- Discuss information
  - Mid-term review, end of rotation
  - Plan of action, reflection
- Reporting
  - i.e. in portfolio

Multi-source feedback

- What are strengths?
- What are threats?

Multi-source feedback

- Rich source of information on professional performance
  - On different competency domains
- Different groups of raters provide unique and different perspectives
- Self-assessment versus assessment by others stimulates self-awareness and reflection

Self assessment

Eva KW, Regehr G. 2005. Self-assessment in the health professions: a reformulation and research agenda. Acad Med 80:S46-54.

Self-direction

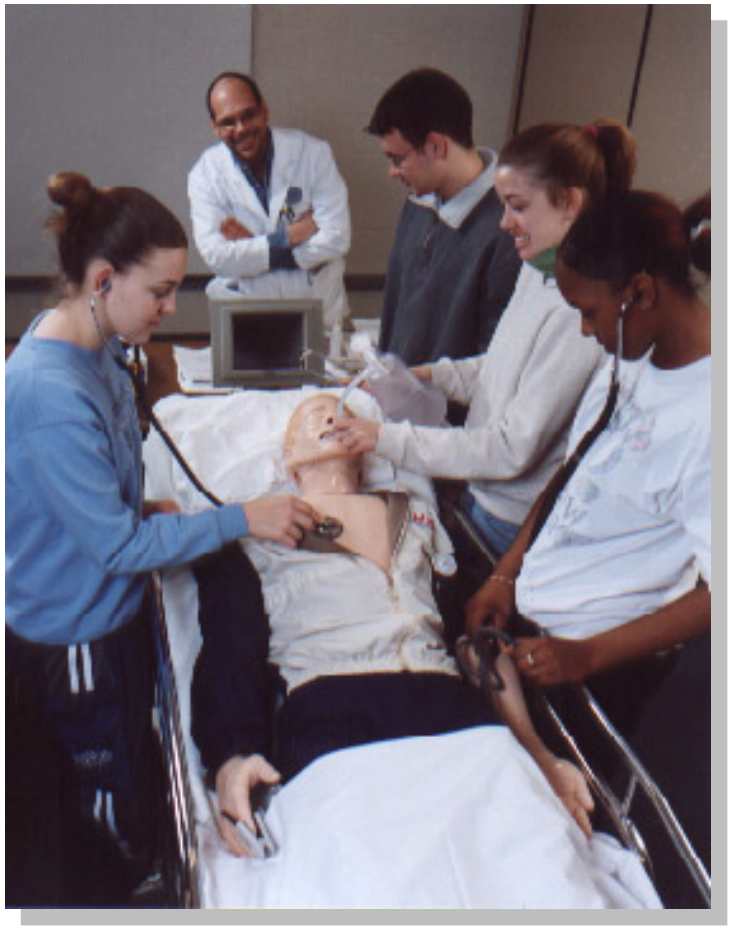
Multi-source feedback

- Assessment and learning: concrete, descriptive, qualitative feedback is extremely useful
- Learning: feedback is central; Plan of action is part of feedback; follow-up!
- Assessment: proper documentation is essential for defensible decisions

Multi-source feedback

- Dilemma's:
  - Dual role of supervisor (helper & judge)
  - Anonymity of raters
  - Discrepancies between rater groups
  - Time pressured (absence of) rich feedback

Multisource-feedback

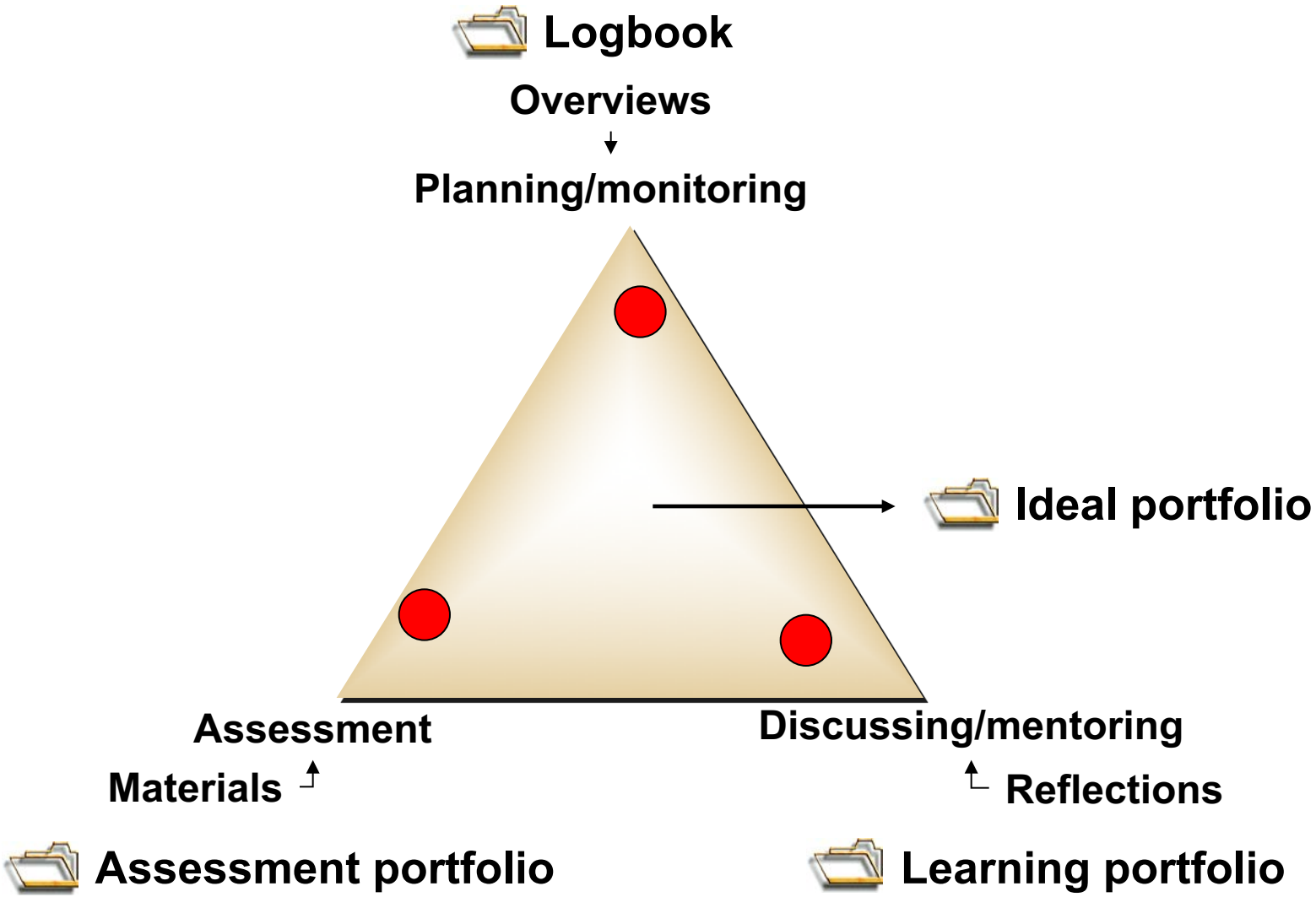


"The most important goal of multirater feedback is to inform and motivate feedback recipients to engage in self directed action planning for improvement. It is the feedback process, not the measurement process that generates the real payoffs." (Fleenor and Prince, 1997)

Portfolio

- A collection of results and/or evidence that demonstrates competence
- Usually paired with reflections, plans of actions, discussed with peers, mentors, coaches, supervisors
- Aggregation of information (very comparable to patient chart)
- Active role of the person assessed
- Reversal of the burden of evidence
- But it’s a container term

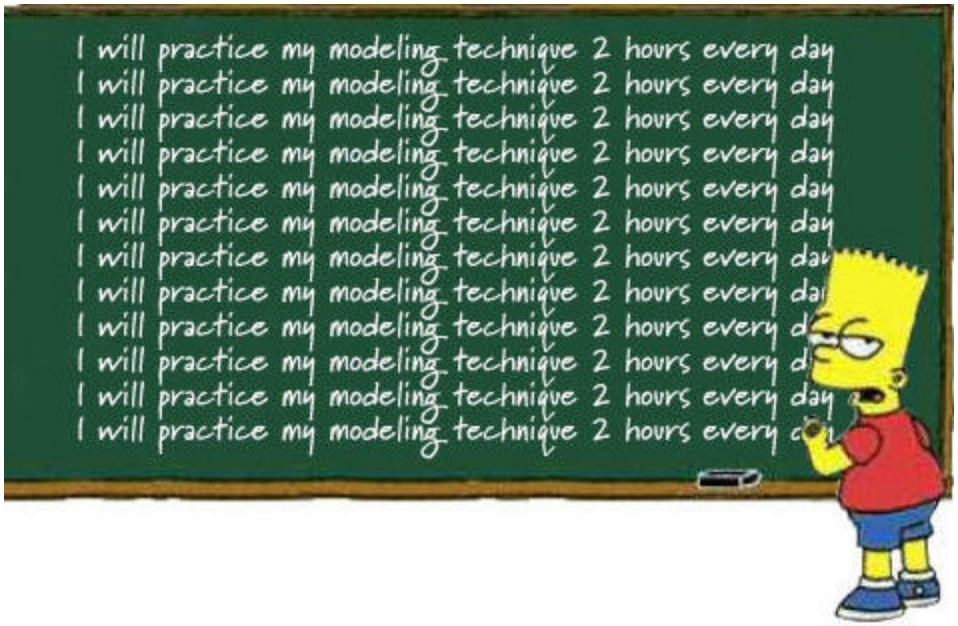
Classifying portfolios by functions



What exactly

- Purpose:
  - Coaching
  - Assessment
  - Monitoring
- Structure
  - Professional outcomes
  - Competences
  - Tasks, professional activities
- Evidence
  - Open (self-directed, unstructured)
  - Structure (how much is prescribed)
- Interaction
  - Coach, mentor, peers
- Assessment
  - Holistic vs analytic

Portfolio


I will practice my modeling technique 2 hours every day
I will practice my modeling technique 2 hours every day
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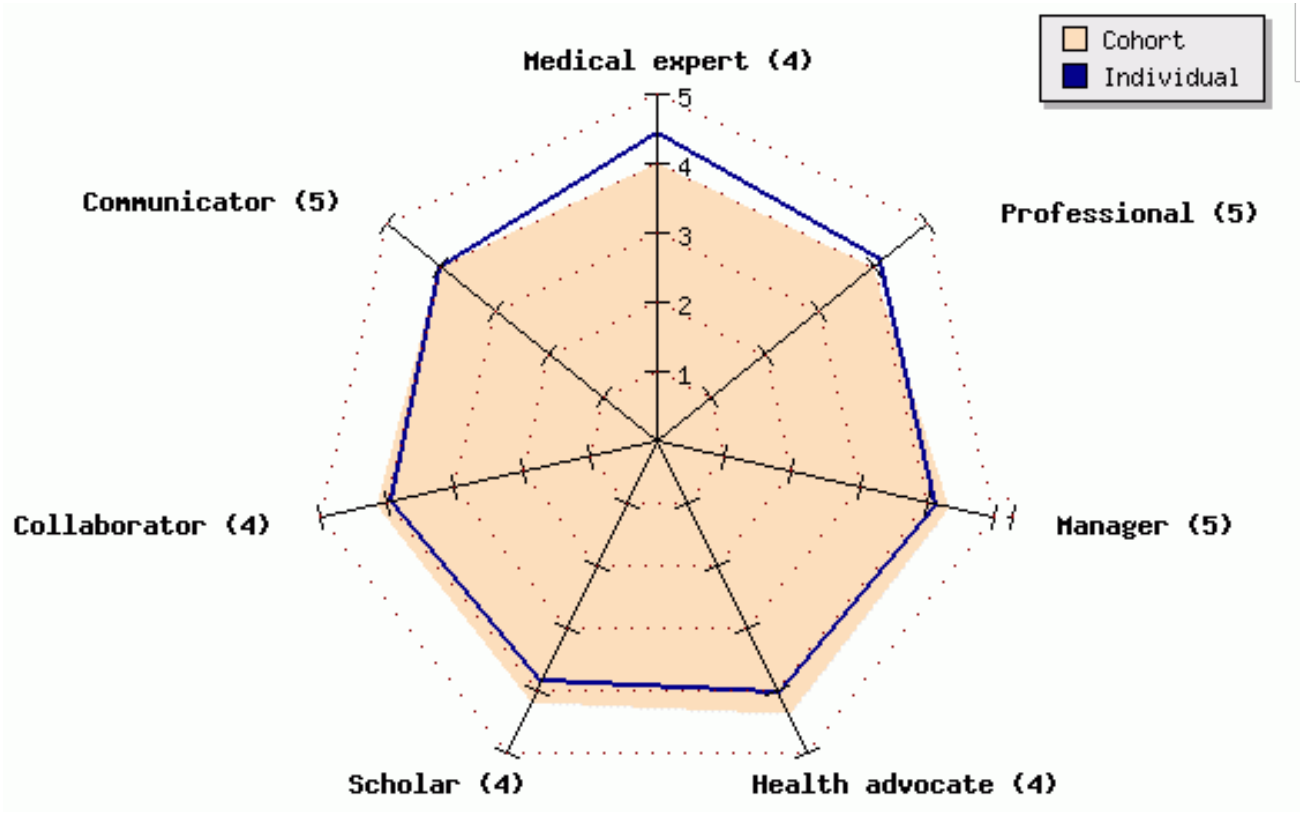
Maastricht Electronic portfolio (ePass)

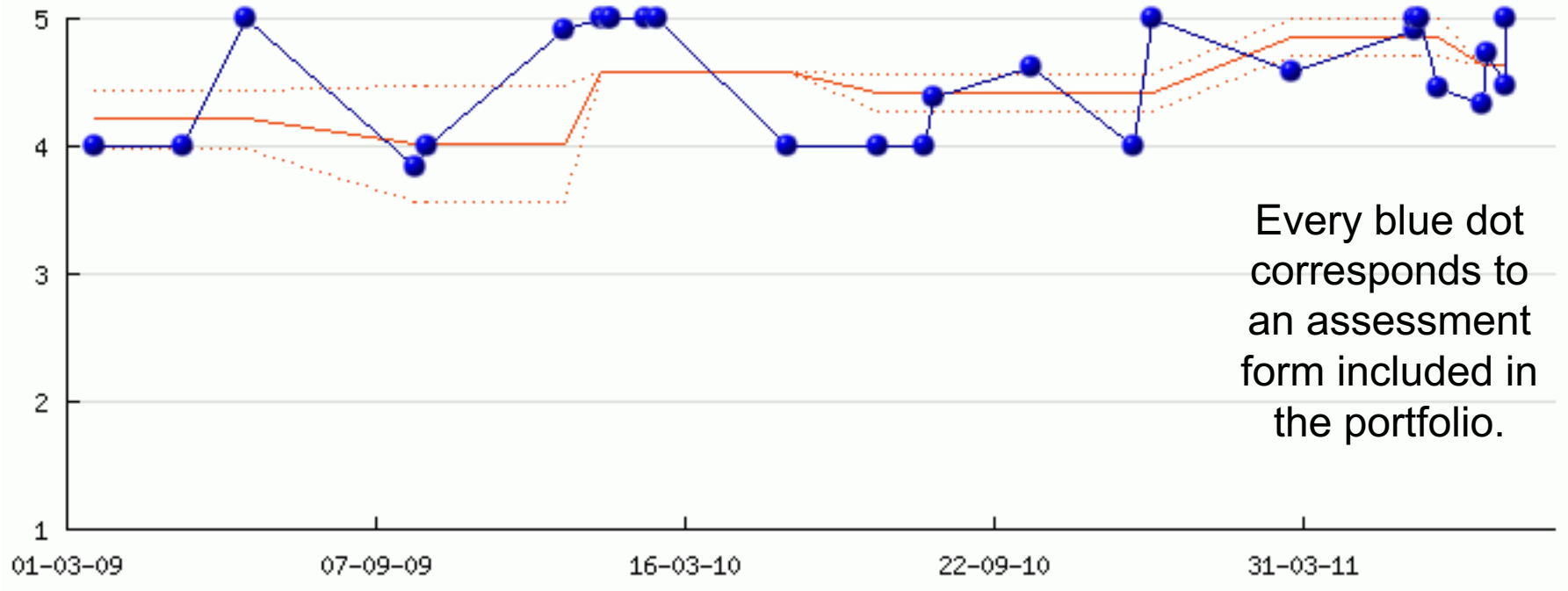


Comparison between the score of the student and the average score of his/her peers.

Maastricht Electronic portfolio (ePass)

1: Medical expert

Table view



Every blue dot corresponds to an assessment form included in the portfolio.

What can go wrong?

- “Reflection sucks”
- Too much structure
- Too little structure
- Portfolio as a goal not as a means
- Ritualization
- Ignorance by portfolio stakeholders
- Paper tiger

Portfolio recommendations

- Portfolio is not but an assessment method, rather it is an educational concept
  - Outcome-based education
  - Framework of defined competences
  - Professional tasks need to be translated in assessable moments or artefacts
  - Self-direction is required (and made possible)
- Portfolio should have immediate learning value for the student/resident
  - Direct use for directing learning activities
  - Be aware of too much reflection
- Portfolios need to be ‘lean and mean’

(Driessen, E., Van Tartwijk, J., Van der Vleuten, C. Wass, V. Portfolios in medical education: why do they meet with mixed success? A systematic review. Medical Education, 2007, 41, 1224-1233.)

Portfolio recommendations

- Social interaction around portfolios are imperative
  - Build a system of progress and review meeting around portfolios
  - Peers may potentially be involved
- Purpose of the portfolio should be very clear
- Portfolio as an aggregation instrument is useful (compare with patient chart)
- Use holistic criteria for assessment; subjectivity can be dealt with

(Driessen EW, Van der Vleuten CPM, Schuwirth LWT, Van Tartwijk J, Vermunt JD. 2005. The use of qualitative research criteria for portfolio assessment as an alternative to reliability evaluation: a case study. Medical Education 39:214-220.)

“It may not be a perfect wheel, but it’s a state-of-the-art wheel.”