



Maastricht University

*Leading
in Learning!*

An European e-portfolio:

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Portfolios were introduced with the aim of improving the learning and assessment of doctors. **Erik Driessen** believes that they work well when used correctly, but **Geoff Norman** remains unconvinced

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Normally, portfolios, defined as a collection of a learner's work that gives evidence of learning and may be used for the purposes of assessment¹ have received increased attention of educators over the past few years. According to a systematic review by Driessen and colleagues, they have the potential to improve self-assessment and summative assessment at all levels from undergraduate to post-professional education.² The learning portfolio is not just another learning or assessment method. It is really a Jack of all trades, and owing in multiple guises to do almost anything we demand of the learner at any level from novice to expert. It is an opportunity for students to report on work done, feedback received, progress made and plans for improving competence.^{3,4}

How can it adopt so many roles? Simply because the title really is an accurate description – is a portfolio with individual specific content. Although, in that maximum versatility, it also creates difficulties for anyone attempting to decide whether

portfolios are good or bad. Unless you can specify what lies inside the folder, it's difficult to make generalisations about the value of the method. Asking whether learning portfolios are good for learning or assessment is a bit like asking whether drugs are good for treating disease. The answer must be, it depends.⁵ However, fools rush in, so I will attempt some general observations.

Lack of evidence

Although the review found that, consistent with the rhetoric, most people regarded learning portfolios as useful for reflective learning, professional development, etc, this conclusion was based almost entirely on self-perception. One study was conducted with practising physicians and examined self-reported intention to change their practices.⁶ The other used interviews of students' perceptions of their personal and professional development.⁷ It is doubtful whether these self-assessments can be

treated as legitimate performance measures, particularly in view of the considerable literature indicating that people, including health professionals, have enormous difficulty assessing themselves.⁸ Furthermore, it takes a lot of work to write portfolios and to mark them. Use of portfolios in the final examination at Dundee required at least 3-4 examiner hours for each student,⁹ a total of 400-500 hours of examiner time.

And it's not clear that the effort is rewarded. In one study, only 35% of trainees thought it provided an opportunity to analyse critical clinical incidents and only 15% thought it analysed critical incidents of professional behaviour¹⁰; another study found that only about half of trainee doctors and supervisors thought portfolios were "a good idea," and trainees described a "sense of burden" associated with their use.⁸

Although portfolios have been used in summative assessment, occasionally in very high stakes situations,⁶ the evidence of reliability and validity is quite sparse. Several studies of inter-rater reliability showed an average reliability of 0.63, which is only marginally acceptable. Even this seems optimistic to me; portfolios are usually

unstructured essays, and reliability of essay rating is notoriously poor.⁹ Further, although many studies show poor reliability, not much is known about why.

What does it test?

Evidence of validity is based on one study,¹¹ which claimed that the portfolio was a valid test of reflective ability, since "quality of reflection" assessed by review of the portfolio predicted the final grade. However, the final grade was based on the same portfolio, using different raters and criteria. This might be seen more as evidence of inter-rater, inter-form reliability than of validity. But none of this addresses content validity. The portfolio is likely to be a highly unrepresentative sample of performance because the student generally decides what is included. It remains to be seen how much selective content sampling is affecting validity since no studies have looked at this.¹¹

Does this then imply that there is no role for learning portfolios? Well, it may be that their real value is a side effect of the drug. It may not have

much use in summative assessment; there is really no evidence, despite the rhetoric, that it assesses unique aspects of competence validly, and it certainly is more labour intensive than alternatives like multiple choice questions that have proved reliability and validity. It may not be possible to show that the learning portfolio stimulates learning. And if it is applied mechanically, participants clearly view it as nothing more than a labour intensive add-on.⁸ But when it is integrated into the curriculum, it will force students to write something and teachers to spend some time individually with students to review their work. To the extent that it brings teachers and students together, it may have value as a counterpoint to the anonymity of the culture of lecture learning and sit down final examinations that is regrettably far too typical. And that's not an entirely bad thing.

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All references are in the version on bmj.com

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HEAD TO HEAD

Are learning portfolios worth the effort?

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YES A major challenge facing us is to add to the merits of assessment of doctors' performance in the workplace instead of the examination hall. The portfolio remains our best solution. It allows the collation and integration of evidence on competence and performance from different sources to gain a comprehensive picture of everyday practice. Simultaneously, portfolios can guide and coach professional development. Studies in multiple contexts confirm that this is feasible if, and only if, users take on board the conditions required for effective use of portfolios.¹⁻²

Portfolios work

To provide credible evidence of fitness to practise doctors have to show in realistic, often stressful, situations that they are competent in all aspects of patient management, diagnostics, communication, teamwork, administration, and professionalism. Since the 1990s various instruments have been developed to assess workplace based learning: the mini-clinical evaluation exercise, multisource feedback, case based discussions, clinical work sampling, and direct observation of procedural skills.³

These tools provide piecemeal information on performance. None is perfect. A portfolio amalgamates evidence from the different sources, allowing assessors to make an overall judgment of competency. The strengths of one assessment method can compensate for the limitations of another. Recent reviews confirm that portfolios effectively assess day to day performance.¹⁻²

A comprehensive range of information, collated in this way, can produce a well founded summative judgment.¹ There is an important additional advantage. Doctors or students can simultaneously analyse their own performance. They can reflect on and improve their practice and set realistic objectives for further learning.⁴⁻⁵

However, when weighing the merits of portfolios, it is essential to realise that there is no one standard portfolio. Portfolios are as diverse as their potential content and can be adapted for various purposes.⁶ Their flexibility

is one of their advantages. They can be tailored to the specific objectives or outcomes being assessed. Introducing portfolios is like buying new shoes: one size does not fit all. Careful fitting is essential. Their flexibility becomes an advantage when they are not tailored to the objectives they are supposed to help attain. If this is the case, misunderstandings arise.

When are portfolios worth the effort?

Despite many vociferous advocates, portfolios can be unpopular with medical teachers and students. Frequently heard complaints are: "It takes up far too much time," "We do we have to lug around these useless piles of paper?" and "What on earth am I to put in this self-reflection report?"

What are the facts? Research into their effectiveness is as heterogeneous as the portfolios themselves. Many reports have methodological limitations.¹ However, the studies have several common findings. The literature shows that inappropriate use of portfolios can seriously undermine any potential benefit.¹⁻² Although the portfolio concept may seem deceptively simple, it is only too easy for the desired integrated, comprehensive picture to drown in a disorganised mess of useless information. Fortunately, the literature shows that three simple conditions can prevent this.^{1,2,7}

Mentoring is the single most decisive success factor.⁷⁻⁸ Without an audience, every portfolio is arguably a waste of time.⁹ If students or doctors are to remain motivated to collate a portfolio, they need regular meetings with their mentor to reflect on the information, diagnose the state of their competence,

"Their flexibility is a clear advantage"

and set further learning goals. Evidence shows that portfolios improve the planning and monitoring of continuing medical education by combining external assessment and self assessment with mentoring. They enable the doctor to develop more challenging learning goals than is customary in traditional continuing medical education.¹⁰⁻¹¹

Secondly, the portfolio must be smart and lean.¹ Doctors and students alike have a healthy dislike for messy and massive portfolios.¹² A user friendly portfolio contains well organised materials confined to the portfolio's purpose. It

must be located quickly and with ease. Finally, users must have clear instructions and guidelines.¹³ For many, portfolios are foreign to the educational tradition they are accustomed to. The concept of combining formative and summative assessment is new. Clear guidelines on the purpose, contents, and organisation of the portfolio are essential.¹⁴

Careful implementation is crucial. A strong resistance to the portfolio can be unleashed when learners are forced to stick to a rigidly prescribed format.⁴⁻¹⁵ Conversely, when learners are allowed to create a portfolio that reflects their personal interests and concerns, they will have a sense of ownership and be motivated to develop its contents.

We need to overcome existing misconceptions in portfolio design and seek a strong evidence base to optimise their use. With proper mentoring, restricted but relevant content, and well balanced guidelines reflective of its purpose, a portfolio undoubtedly makes an important contribution to the effective assessment, both formative and summative, of performance in the workplace.

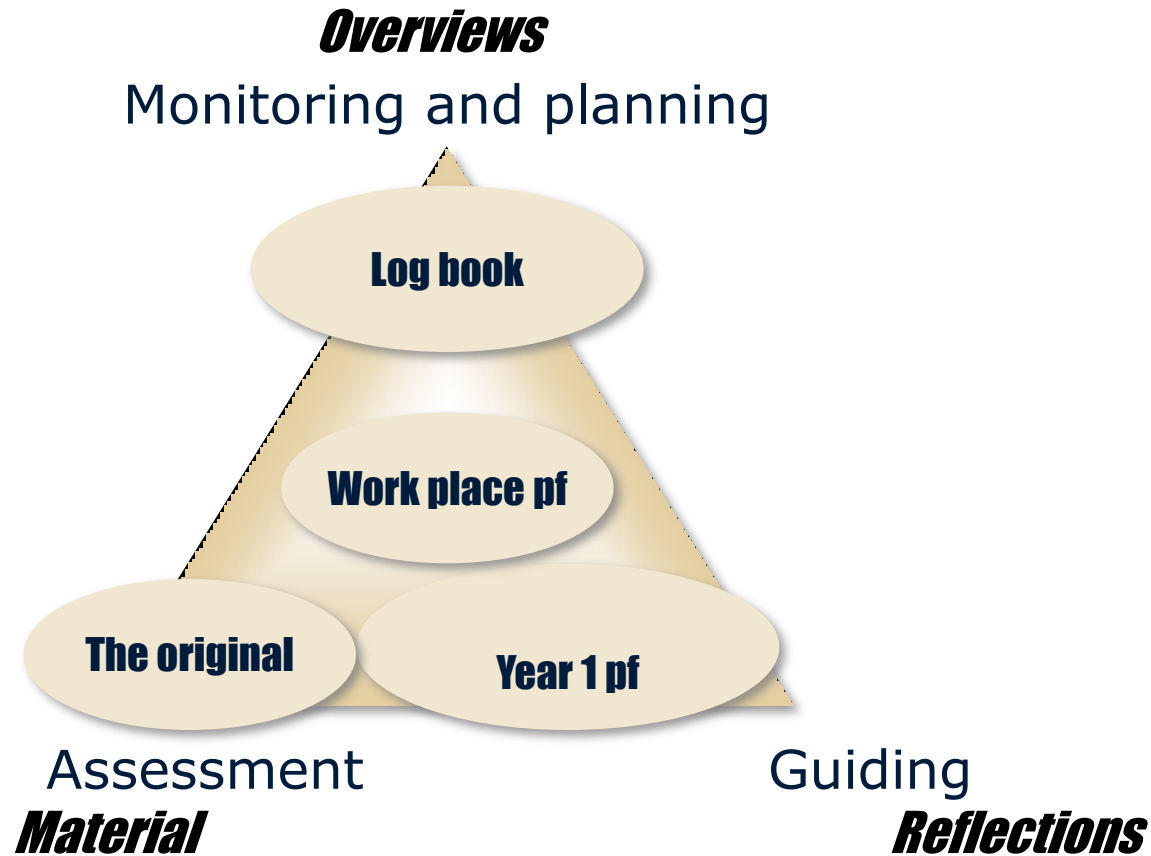
Competing interests: None declared.
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CONTRAST/ISTOCK

Introducing portfolios is like buying new shoes. One size doesn't fit all. Careful fitting is essential.

Portfolios: one size doesn't fit all



Portfolios for work place based learning

Dental Foundation Training – PERSONAL DEVELOPMENT PLAN - DF1 (Months 1 – 3)

A Dental Evaluation of Performance (EOP)

Foundation Dentist (FD) _____ GDC No. _____

Evaluator _____ Position _____

Clinical Major Competencies covered 1 2 3 4
(Key on reverse - "Please circle all that apply to this encounter")

Description of case / encounter _____

Please grade the following areas using the scale 1 - 6	Needs Improvement before DFT* completion	
	1	Borderline for DFT completion
1. Patient examination	<input type="checkbox"/>	
2. Diagnosis / clinical judgement	<input type="checkbox"/>	
3. Treatment planning	<input type="checkbox"/>	
4. Procedural knowledge	<input type="checkbox"/>	
5. Technical ability	<input type="checkbox"/>	
6. Communication (patient & team)	<input type="checkbox"/>	
7. Professionalism	<input type="checkbox"/>	
8. Time management & organisation	<input type="checkbox"/>	
After feedback given on the assessment please rate:		
9. FDs insight into own performance	<input type="checkbox"/>	

Areas of good performance _____

Areas for development before completion _____

Time (observing) _____ Time (feedback)
Evaluator Signature _____

Continue notes overleaf if necessary

Foundation Dentist (FD) Name _____

GDC No. _____

Learning Objective(s) Identified	Date identified	Identified by...			How will the learning objectives be addressed, and by when?	Learning Objective achieved.....	
		Assessment	Reflection	Other (please specify)		Date	Evidence in portfolio
Better communication with DCP	3 Sept 09	✓ D-EP	✓		Feedback from trainer, discuss with DCP.... By Dec 09	Dec 09	D-EP
Planning multiple XLAs	7 Oct 09	✓ D-CbD			Tutorial with trainer & further practice By Jan 2010	Jan 10	D-EP
Better record keeping	14 Oct 09	✓ D-CbD	✓		Discuss with trainer & Self study – by Jan 2010	Jan 10	D-CbD
OPG Technique	7 Nov 09		✓	Internal Audit	Tutorial on OPG controls – planned late January	Feb 10	Audit report
Identify signs of anxiety in patients at an earlier stage	14 Nov 09	✓ D-EP	✓		Anxiety control study day on Dec 6th	Dec 09	D-EP
Management of medical emergencies	16 Nov 09			Medical Emergency in practice	CPR Training on 4th Dec	Dec 09	Certificate from CPR Course

Adviser Review at 3 Months: Progress satisfactory? ☐ Yes ☐ No Signature _____

Adviser Comments: _____

Periodontal therapy & mgt soft tissues	Periodontal exam						
	Simple scale	12	8				
	Complex care	1	5				

FD signature _____ Date _____ Trainer signature _____ Date _____

[Home](#) [Portfolio](#) [Portfolio access](#) [Competencies](#) [Progress](#) [New](#) [My info](#) [Help](#)**Welcome Assistant Gynaecology**

You are logged in as resident in training Gynecology at Maastricht Universitair Medisch Centrum in Maastricht.



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[Learning and Reflection](#)
[Interview reports](#)
[Workplace-based assessments](#)
[360-degree feedback](#)

Refine overview

[VIEW/HIDE INSTRUCTION](#)

This overview displays all your workplace-based assessments. You can view this by clicking "view" in the table. You can filter this overview for year and semester.

Display semester:

[New workplace-based assessment](#)

Date	Form	Year /Sem	Department	Concerning	Val.	Level	Supervision	View
05-7-11	Mini-CEX-P	1-1	MUMC+/Gyn	Patient contact	yes	Above level	Moderate	View
30-6-11	Mini-CEX-P	1-1	MUMC+/Gyn		no			View
28-6-11	CAT	1-1	MUMC+/Gyn		no	At level	Moderate	View

EPASS

Assessment instruments

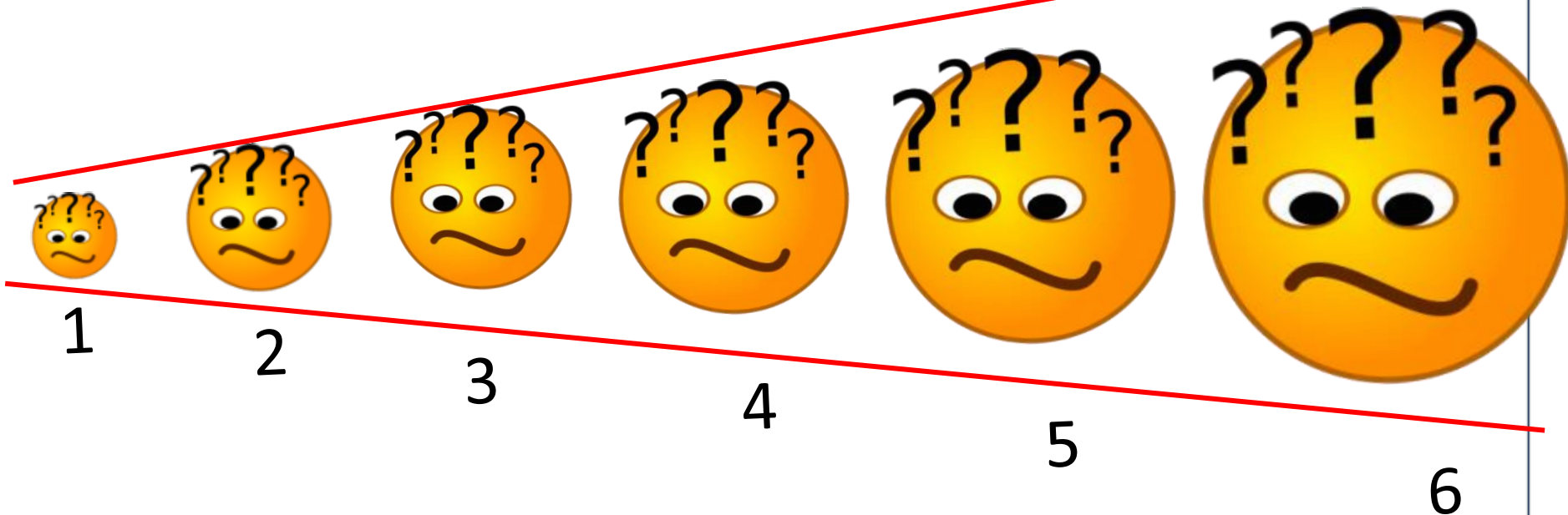
- Mini-cex
- OSATS
- CAT
- Multisource feedback
- Letter assessment
- Activity registration
- Knowledge tests
- Simulation tests
- ...



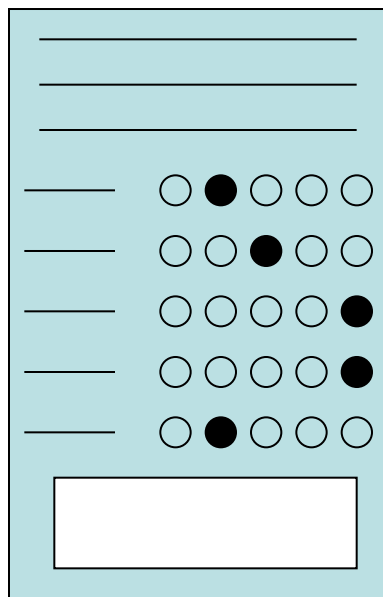
Score on
competency profile

EPASS

- Both Likert-scale items and narrative fields
- Competence development??



EPASS



A diagram of a rating form. It consists of a light blue rectangular box. Inside, there are several horizontal lines at the top for text entry. Below these are five rows of circles. Each row has five circles. In each row, one circle is filled black, and the others are empty. At the bottom of the box is a larger white rectangular area for additional notes or comments.

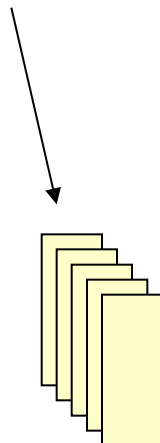
Rating form

1.1: 3.5
 1.2: 4.2

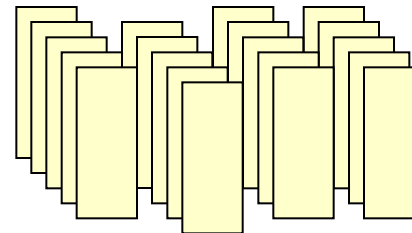
 2.1: 5.0
 2.2: 4.3

 7.4: 3.4

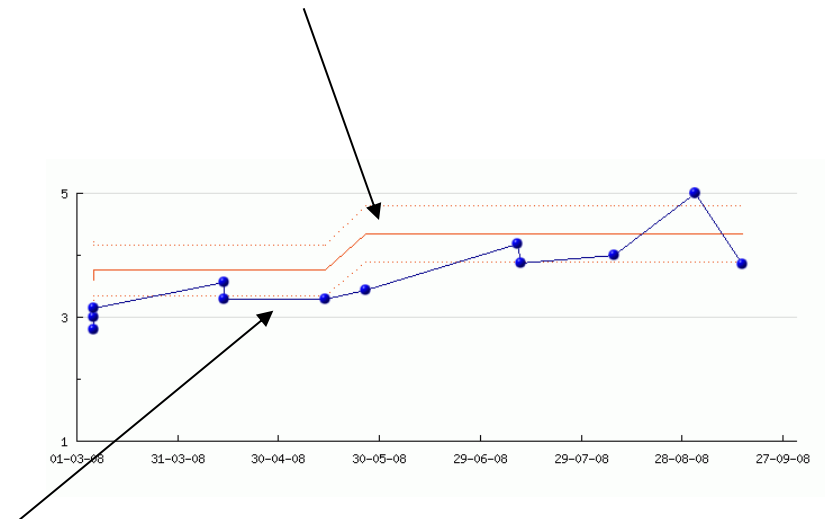
Scores



Longitudinal development



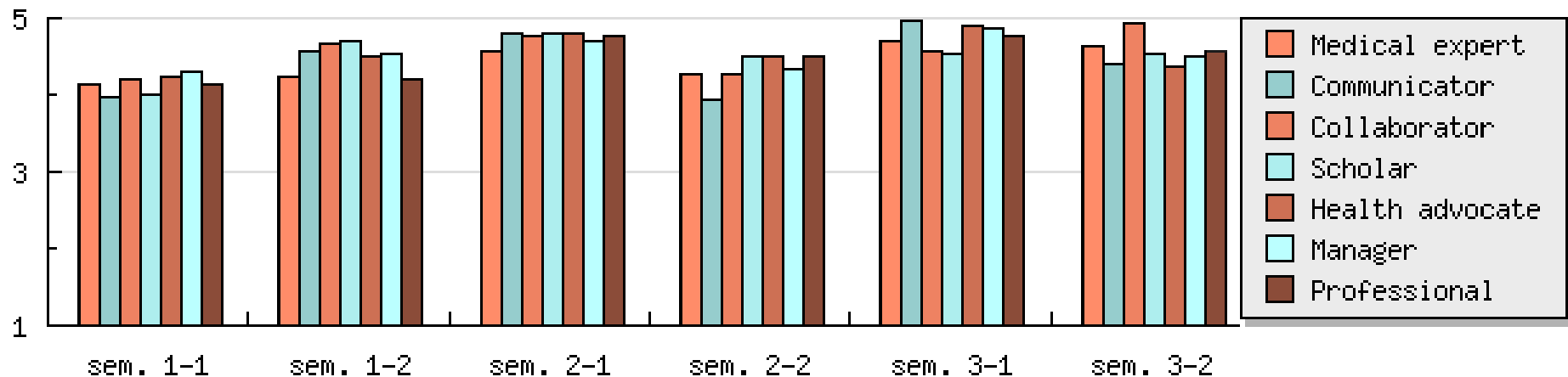
Cohort scores



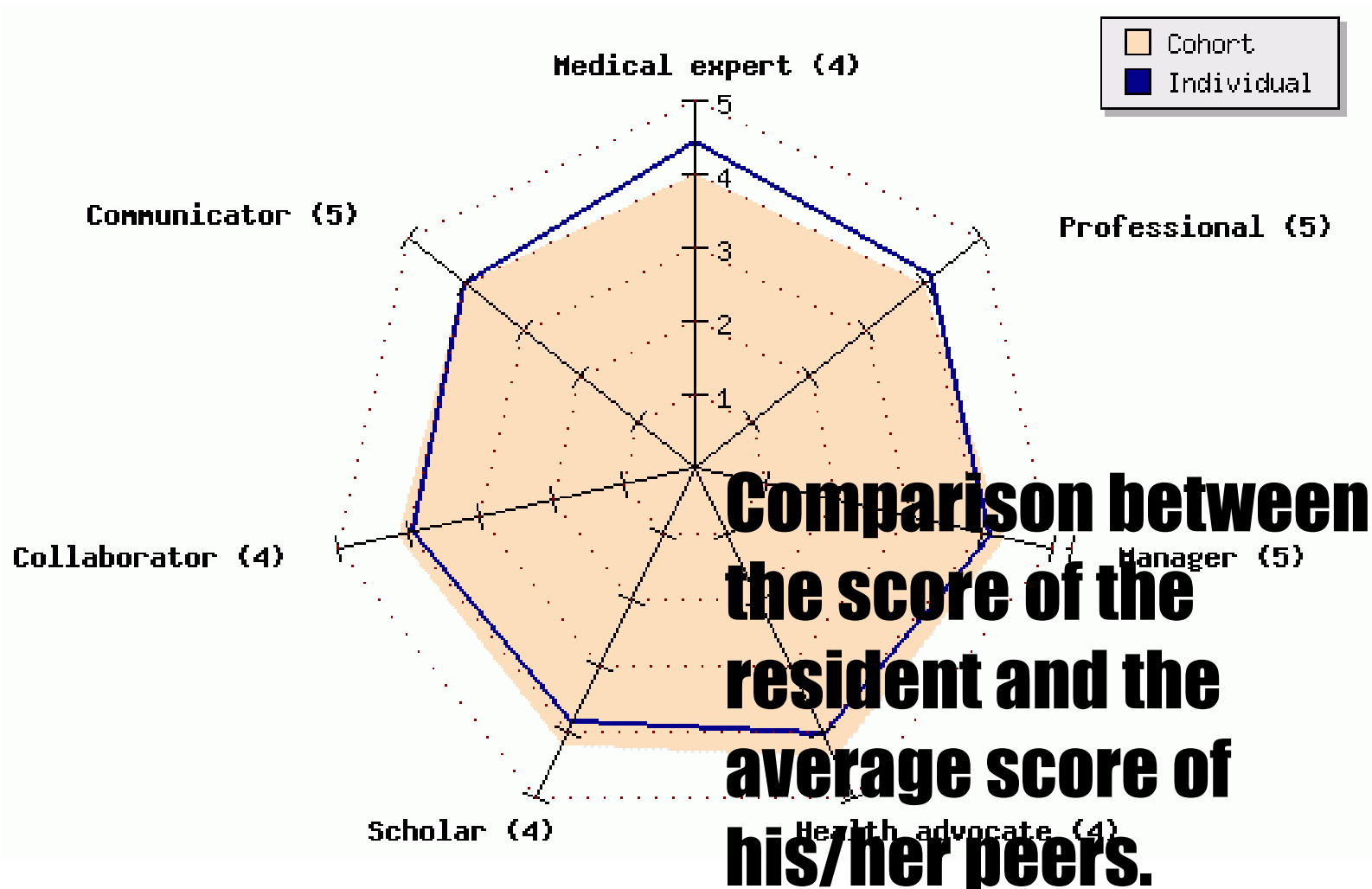
Competency profile (1)

Monitor progress for each of the seven CanMEDS-competences

Overview of the seven competences



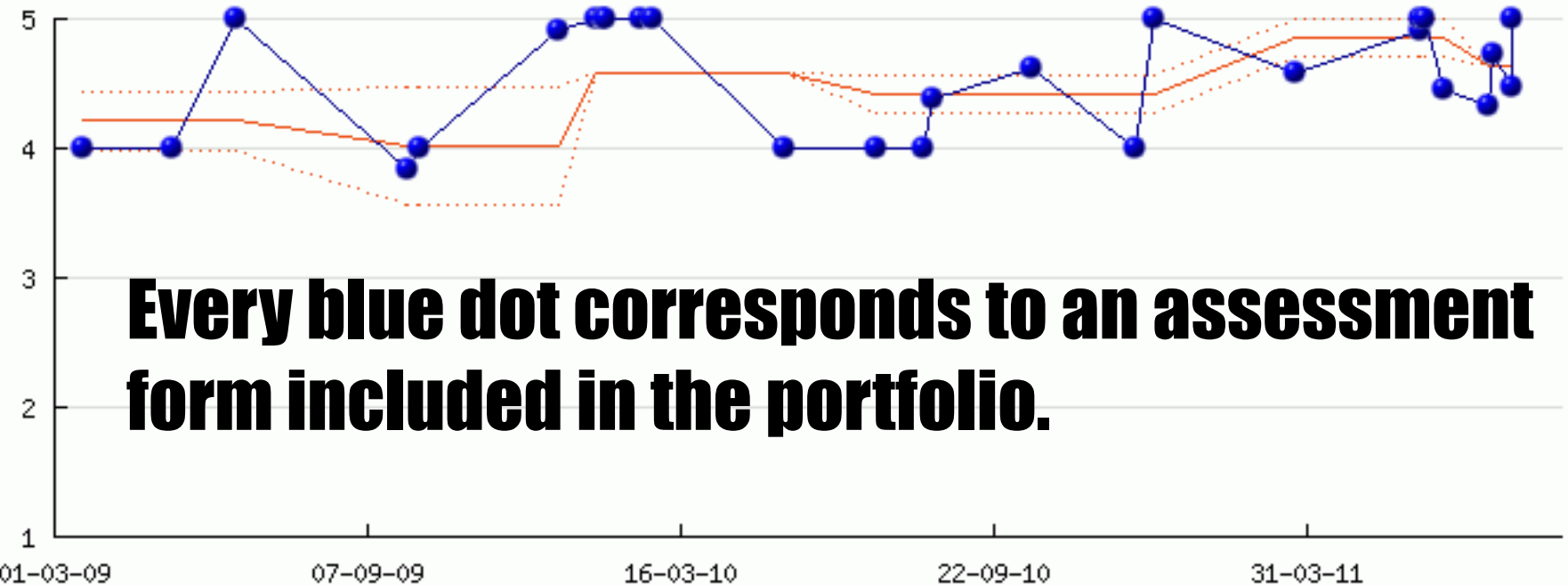
Competency profile(2)



Competency profile (3)

1: Medical expert

Table view



An European e-Portfolio

- Do it to yourself before others do it to you!
- Create as much ownership over the process as possible

2009; 31: 189–191

**MEDICAL
TEACHER**

COMMENTARY

National, European licensing examinations or none at all?

C. P. M. VAN DER VLEUTEN

Maastricht University, The Netherlands

An European e-Portfolio

- Agreement on:
 - Where is it used for? (goals)
 - Whom have access?
 - What goes in
 - Competencies
 - Criteria

An European e-Portfolio

- Other specialties interested:
 - Intensive care
 - Gynaecology (fellows)
- Video assessment

More information and reading

- e.driessen@maastrichtuniversity.nl
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- Norcini, J. and V. Burch (2007). "Workplace-based assessment as an educational tool: AMEE Guide No. 31." *Med Teach* 29(9): 855-71.
- Tartwijk, J. & Driessen, Erik W. (2009) Portfolios for assessment and learning: AMEE guide no. 45 *Medical Teacher*. 31: 790-801.