

new directions in assessment



overview

some basics about assessment

from traits to competencies

programmes of assessment

basic introduction

what is essential?

the good doctor

what is a good doctor?

financial expert

good practice

reflective person

good attitude

know's much

has life experience

good manager

good team worker

empathic person

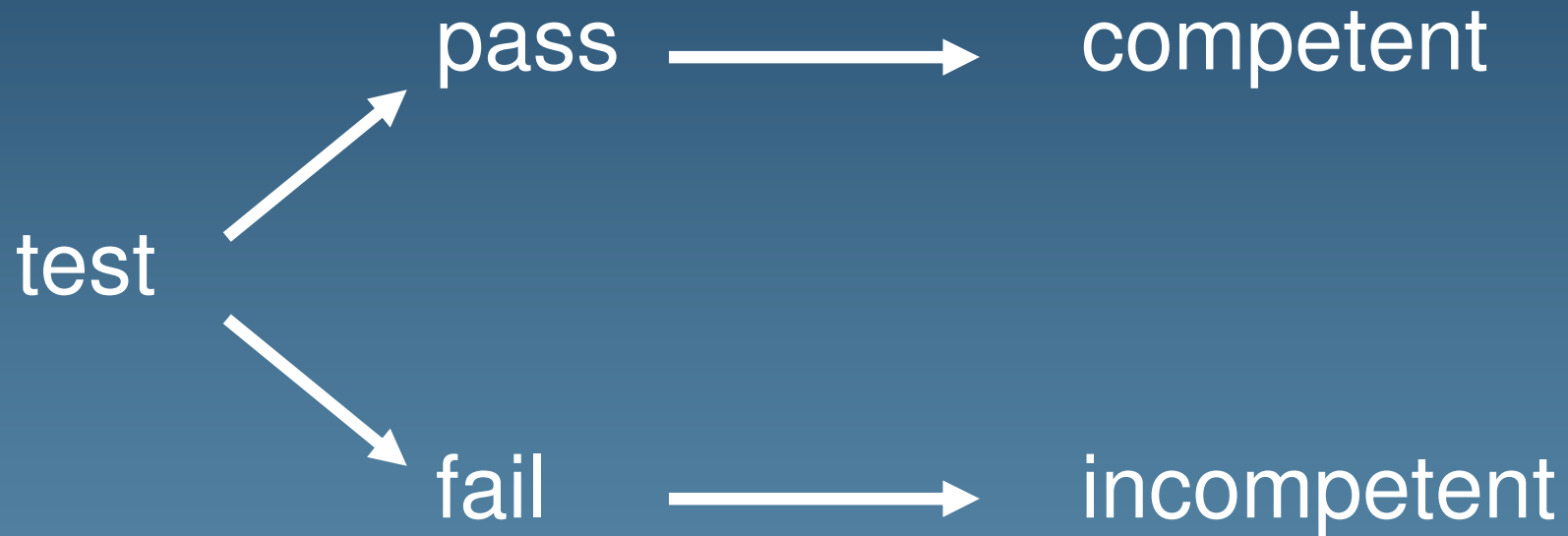
skills

communicates well

good problem-solver



simple isn't it?



simple, it isn't

	competent	incompetent
pass	green	red
fail	red	green

two major problems

- ☹ assessment is often measurement of competence rather than of performance
- ☹ no extrinsic standards for criterion validity exist

what do we have?

intrinsic standards

intrinsic standards

$$U = R \times V \times E \times C \times A$$

R = reliability

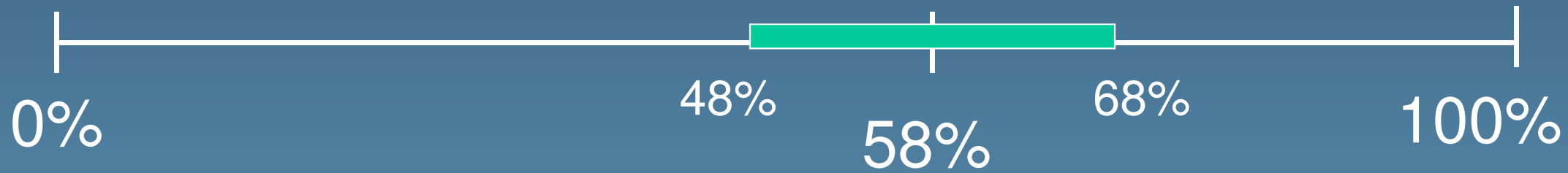
V = validity

E = educational impact

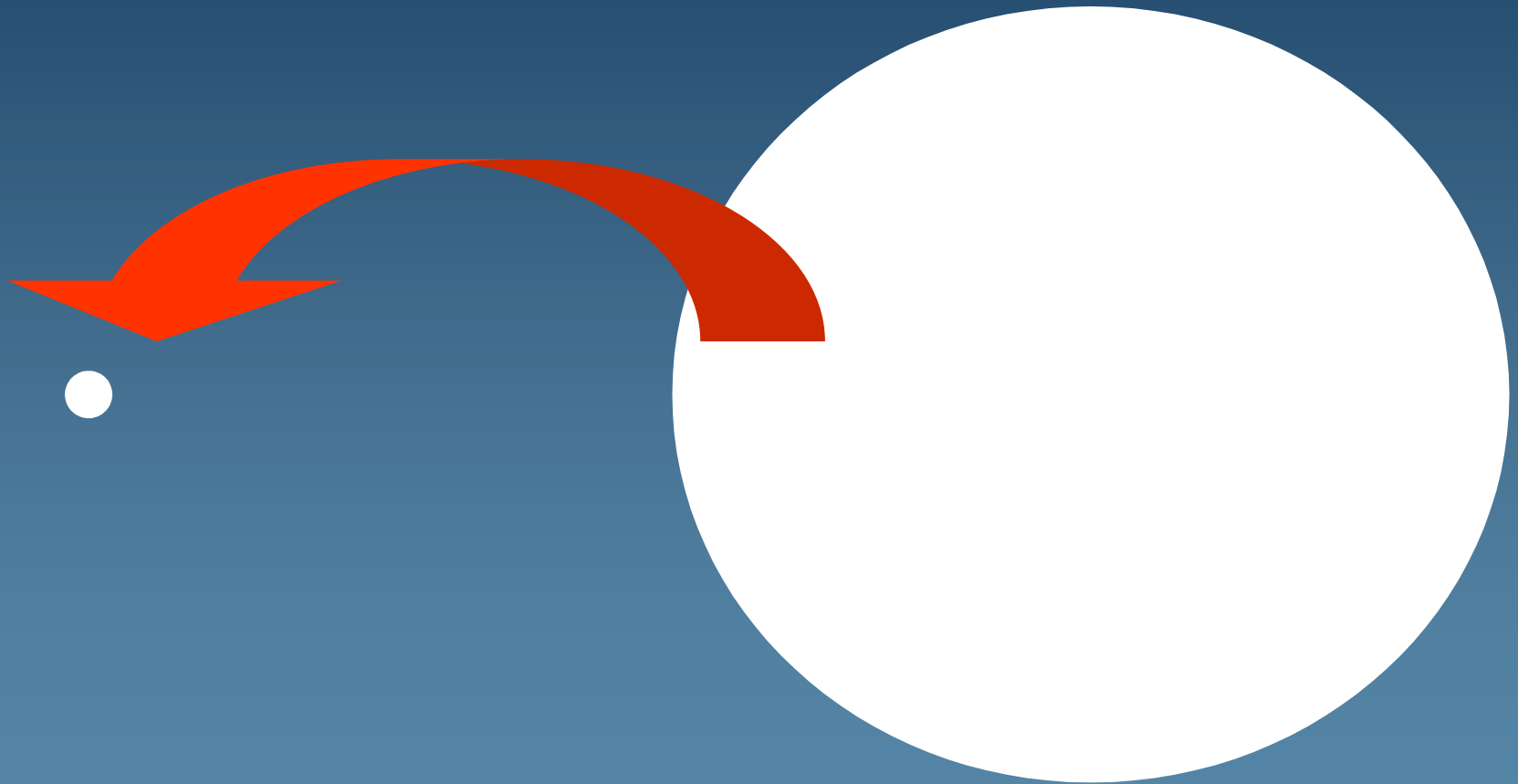
C = costs

A = acceptance

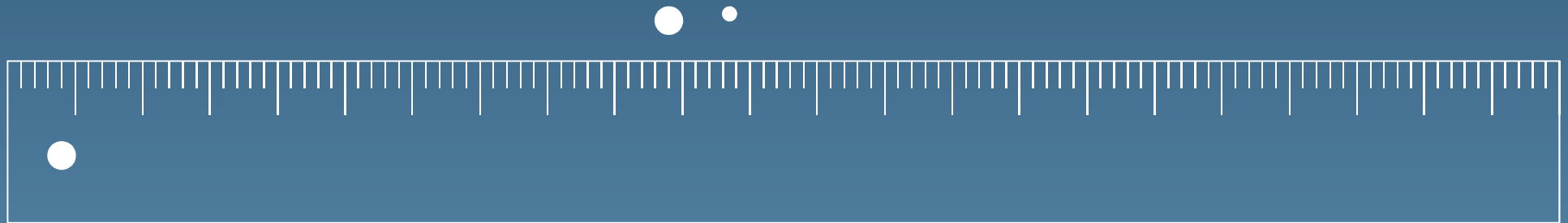
reliability



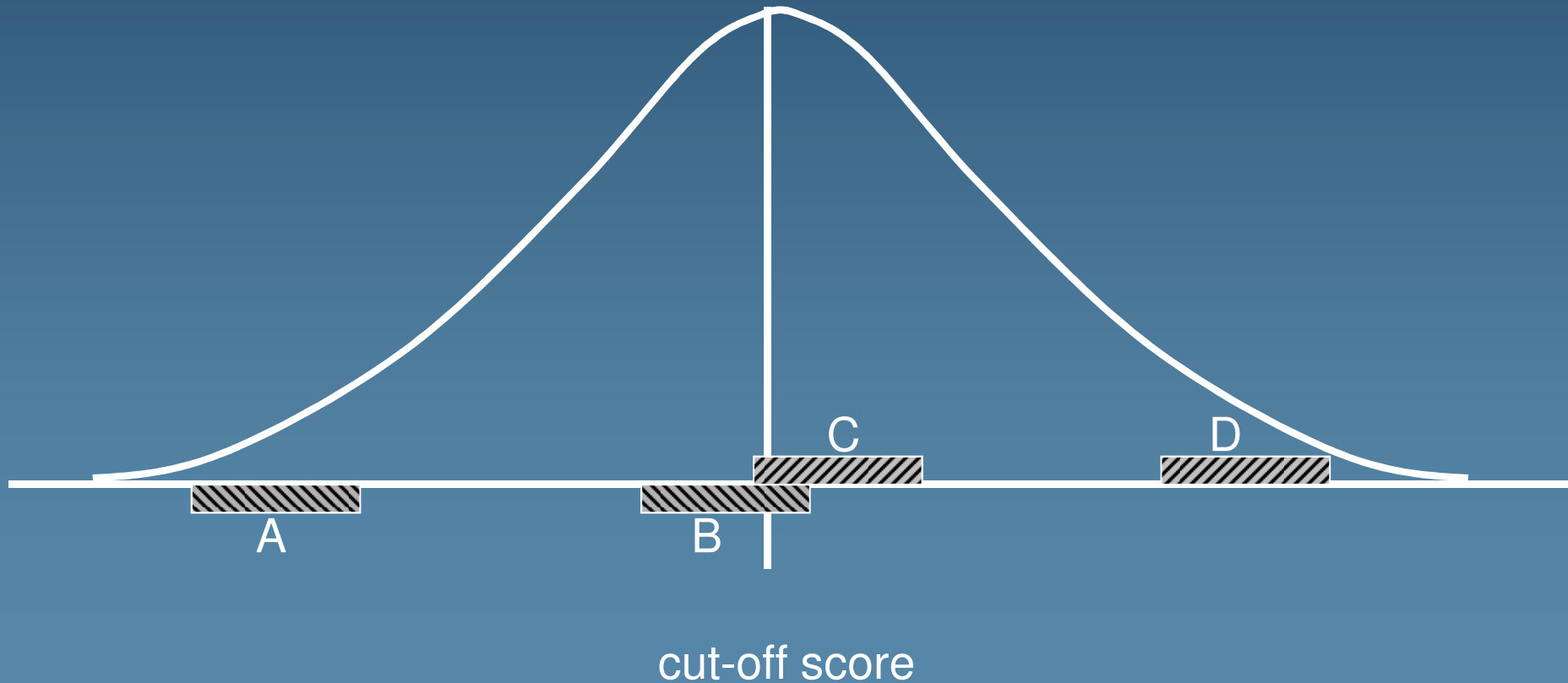
reliability: sampling error



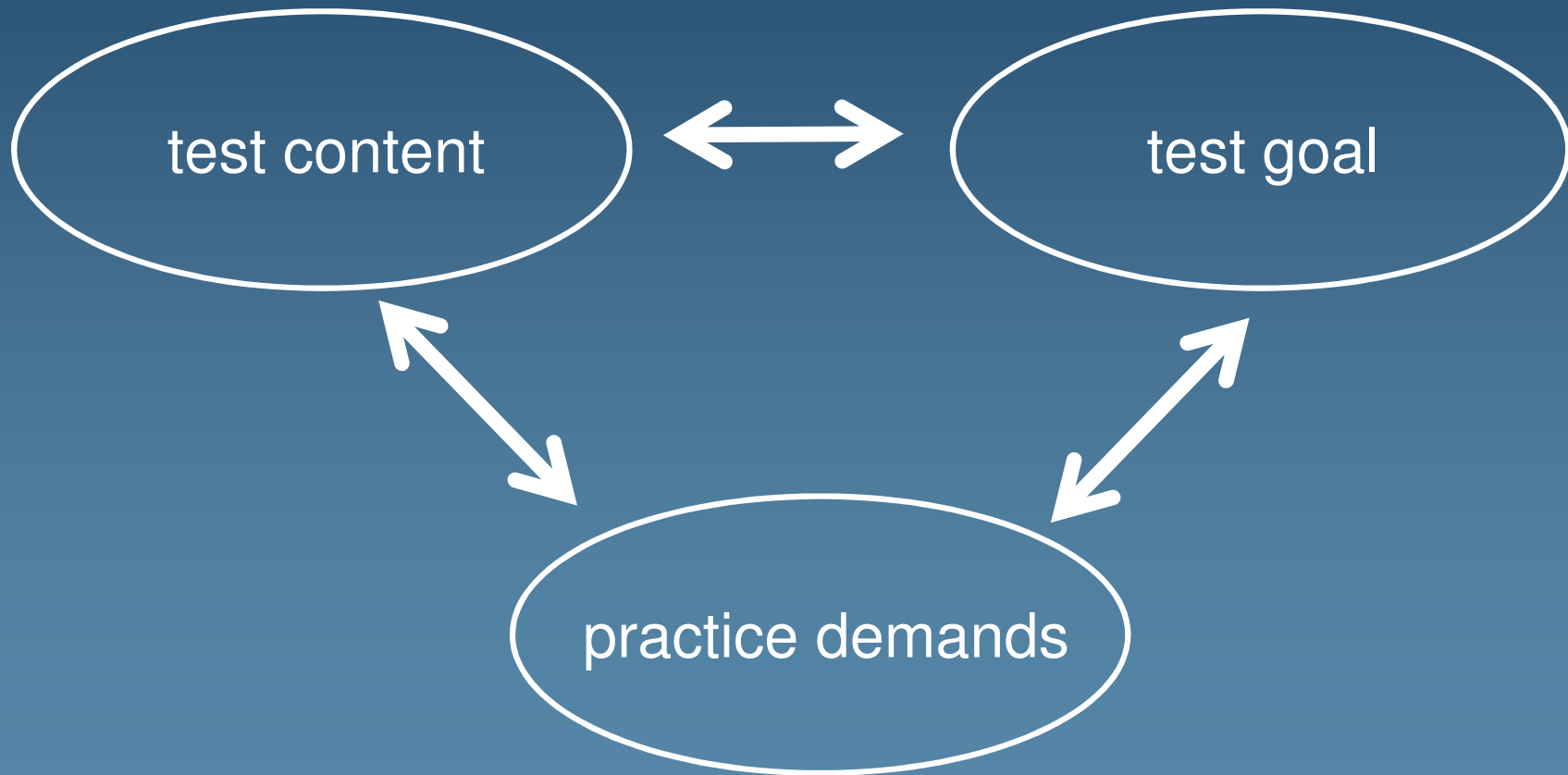
reliability: measurement error



reliability: considerations



validity



validity: indirect validity

an examination is a psychological test and should be validated accordingly:

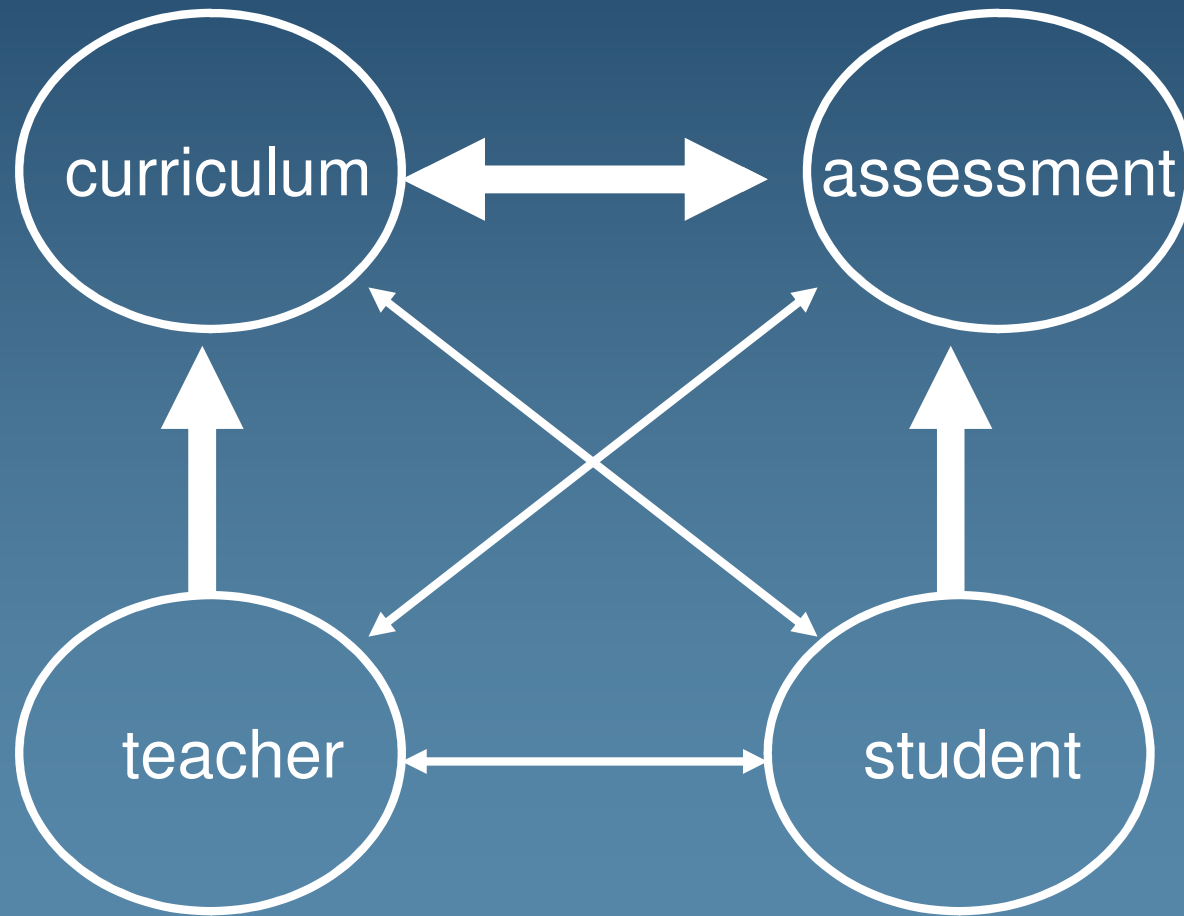
- correlations
- differences in mean scores
- factor analyses

validity: direct validity

an examination is a set of discipline relevant assignments and must be validated as such:

- blueprinting
- item construction
- quality control

educational impact



content
format
scheduling
regulatory structure



costs

- assessment is important, but
- assessment is expensive, and
- high quality assessment is very expensive

acceptance

- political issues
- support within the faculty
- responsibility towards society

intrinsic standards

$$U = R_w \times V_w \times E_w \times C_w \times A_w$$

R = reliability

V = validity

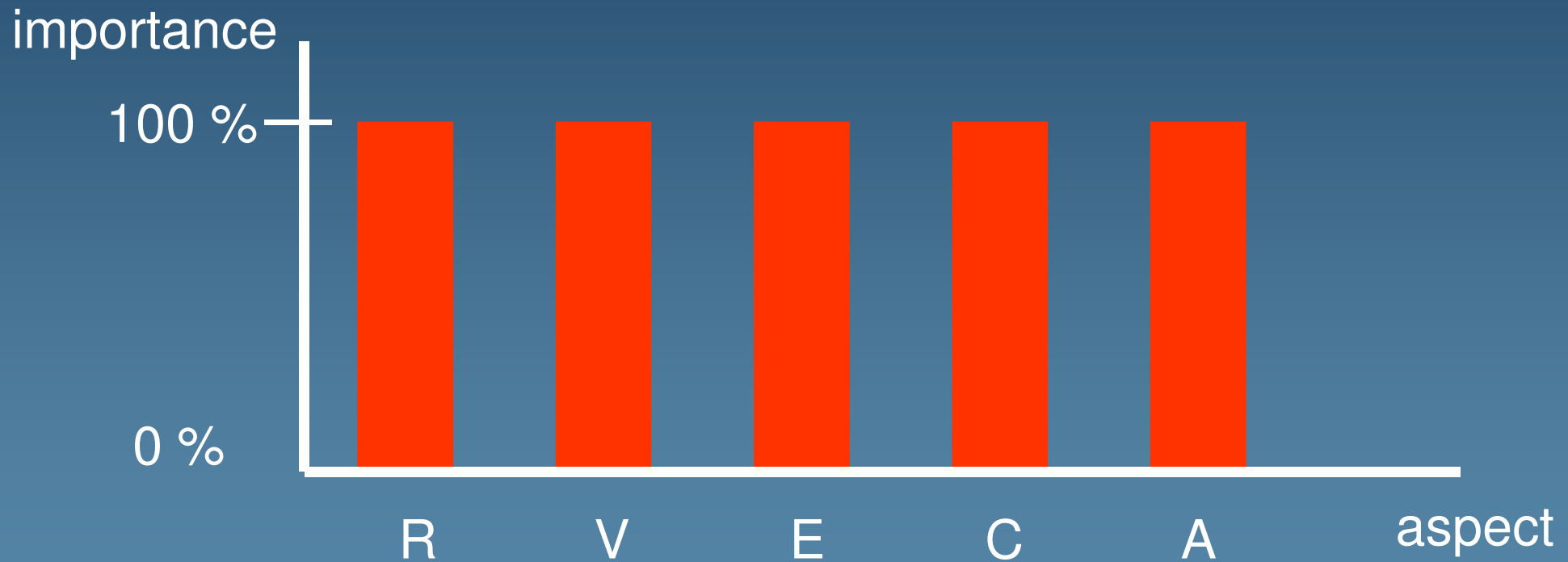
E = educational impact

C = costs

A = acceptance

w = weight

choices



choices: commercial institute



choices: educational situation



overview

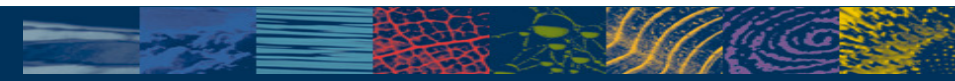
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three new instruments....

- Mini-CEX



Formulier Korte Klinische Beoordeling (KKB)

Beoordelaar: _____ Datum : _____

Fellow: _____ Aantal maanden in opleiding: _____

Patiënt / probleem / diagnose: _____

Complexiteit: laag gemiddeld hoog

1. **Anamnese** (niet geobserveerd / niet van toepassing)

onvoldoende | verdient aandacht | voldoende | goed

2. **Lichamelijk onderzoek** (niet geobserveerd / niet van toepassing)

onvoldoende | verdient aandacht | voldoende | goed

3. **Probleemanalyse/klinisch redeneren** (niet geobserveerd / niet van toepassing)

onvoldoende | verdient aandacht | voldoende | goed

4. **Communicatie** (niet geobserveerd / niet van toepassing)

onvoldoende | verdient aandacht | voldoende | goed

5. **Praktische vaardigheden** (niet geobserveerd / niet van toepassing)

onvoldoende | verdient aandacht | voldoende | goed

6. **Organisatie en efficiëntie** (niet geobserveerd / niet van toepassing)

onvoldoende | verdient aandacht | voldoende | goed

three new instruments....

- Mini-CEX
- Multi-source feedback / 360° feedback

three new instruments....

- Mini-CEX
- Multi-source feedback / 360° feedback
- Portfolio

on top of many old ones

Patient Management Problems

OSCEs

Modified essay Questions

Computer-based testing

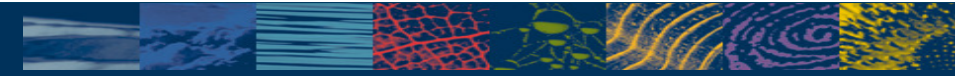
Extended-Matching Items

three new stars in the sky

Mini-CEX

Multi-source feedback / 360° feedback

Portfolio's



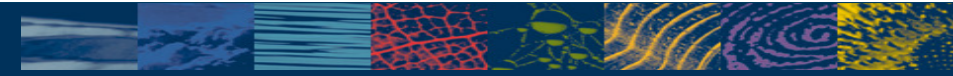
new methods → new hypes?

or not

old model of medical competence

knowledge	skills	problem solving	attitudes
instrument	instrument	instrument	instrument
instrument	instrument	instrument	instrument
		instrument	instrument





implications

traits are stable and generic characteristics

	1	2	3	4	5	6	7	8		
A	0	.5	.5	0	1	1	0	.5	1	2
B	1	.5	0	1	2.5	1	.5	0	0	2
C	1	1	.5	1	3.5	1	.5	0	0	1.5

implications

traits are stable and generic characteristics

individual items in themselves are meaningless

Ms. Smit is 72 years old. She has angina. Several times her blood pressure is taken and found to be 170/100 mmHg.

Which antihypertensive drug is most indicated for her??

- a captopril.
- b chloorthalidon.
- c metoprolol.

Mr. Johnson, 35 years old, consults his GP with complaints of chest pain. Without further information about Mr. Johnson the most likely origin of his chest pain is:

- a the chest wall;
- b the lungs;
- c the myocardium;
- d the esophagus.

resuscitation station in an OSCE



communication station in an OSCE



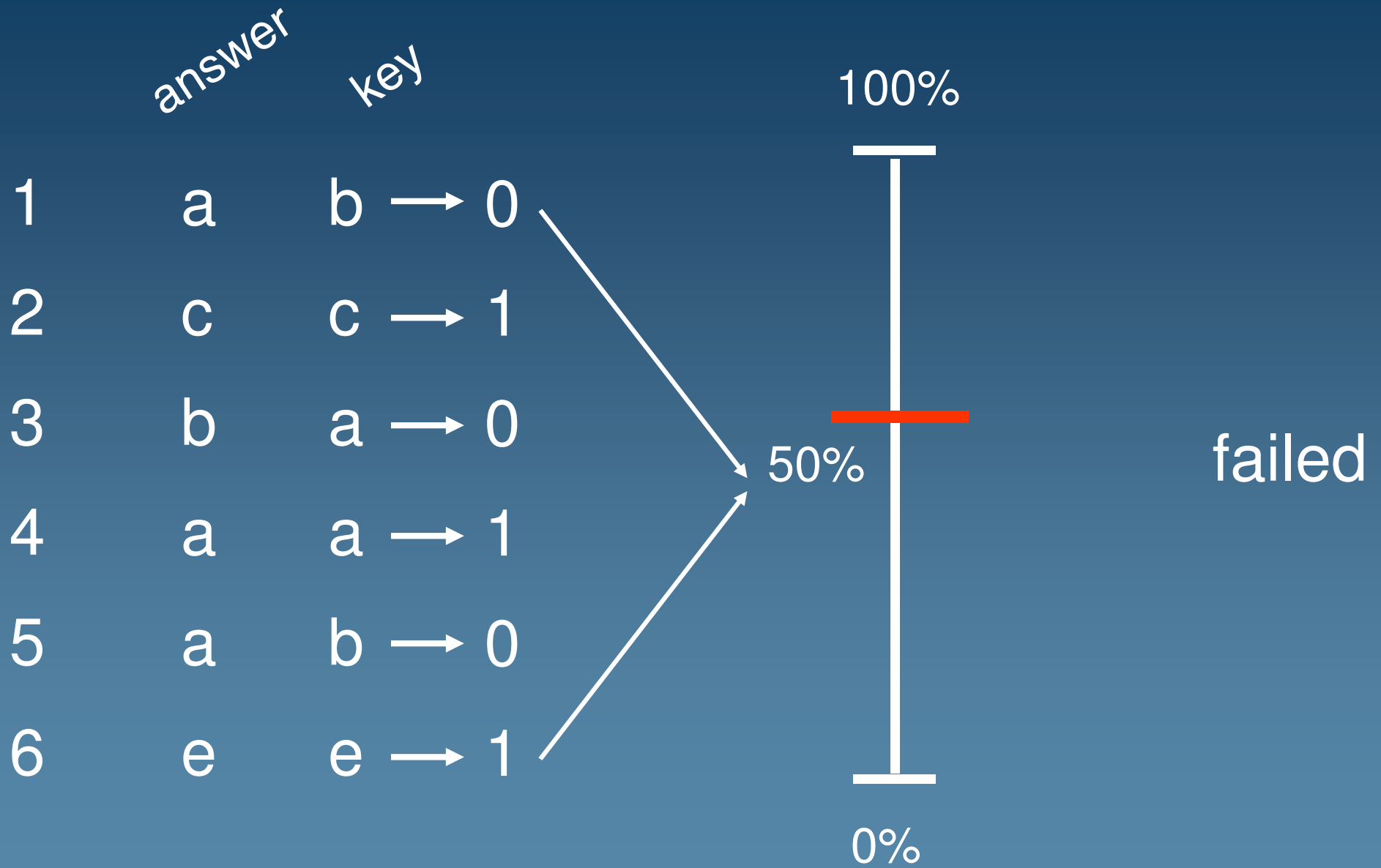
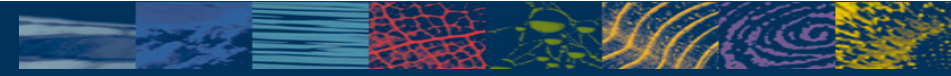
implications

traits are stable and generic characteristics

individual items in themselves are meaningless

sum scores determine what the test measures

statistics are based on elimination of information



implications

traits are stable and generic characteristics

individual items in themselves are meaningless

sum scores determine what the test measures

statistics are based on elimination of information

one single best instrument for each trait

old model of medical competence

knowledge	skills	problem solving	attitudes
instrument	instrument	instrument	instrument
instrument	instrument	instrument	instrument
		instrument	instrument



typical approach

MCQs: factual knowledge

OEQs: writing, reasoning

OSCEs:

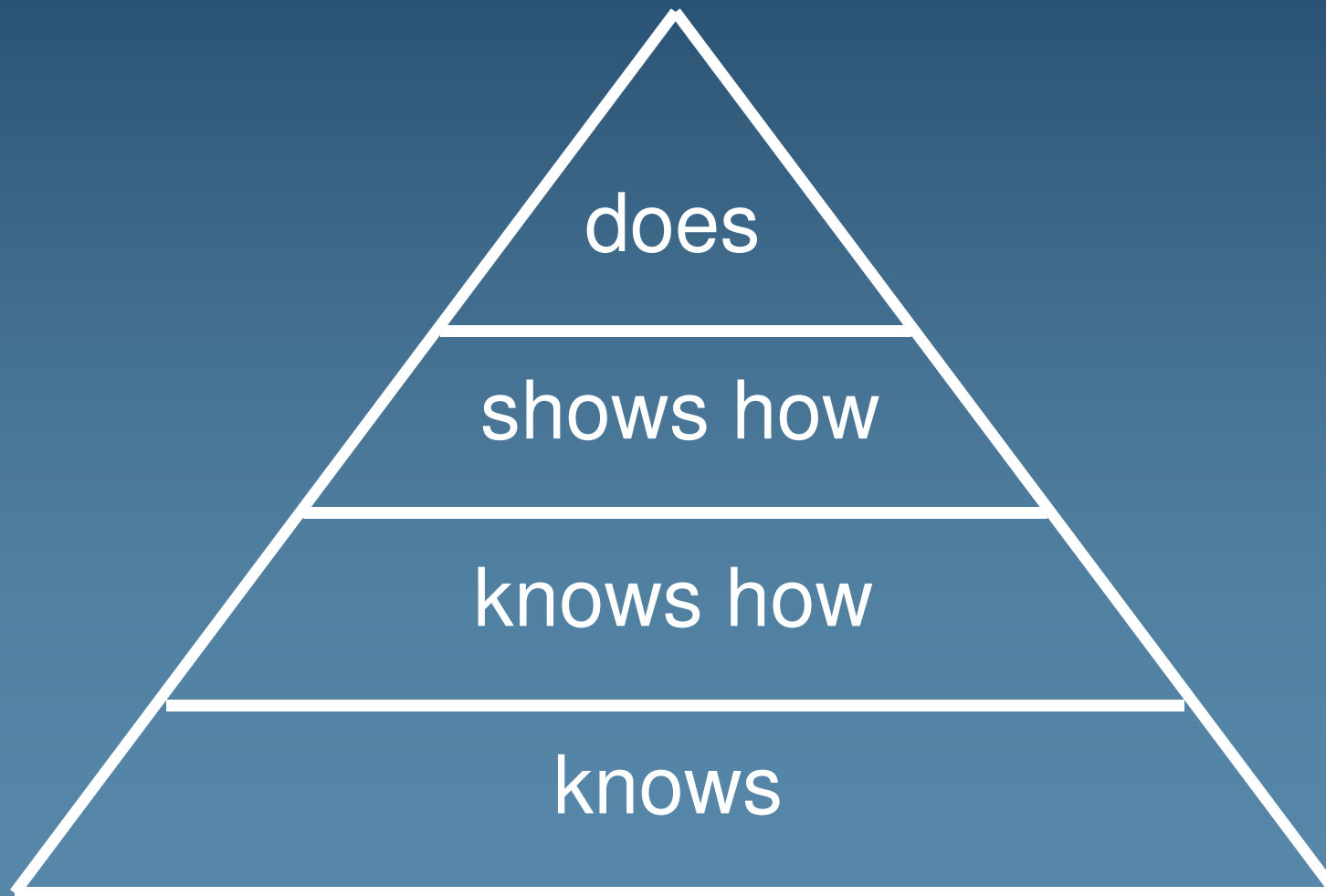
SPs:

Portfolios: professionalism



but what then?

Miller's pyramid



competencies

competencies are simple or more complex tasks a successful candidate must be able to handle, and during which s/he uses at the right time the correct and relevant knowledge, skills, attitudes and meta-cognitions to manage the case successfully.

roles of competency domains

roles:

- 1 medical expert
- 2 scientist
- 3 worker in the health care system
- 4 person

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old model of medical competence

medical expert

scientist

worker in the HCS

person

instrument

instrument

instrument

instrument

instrument

instrument

instrument

instrument

instrument

instrument



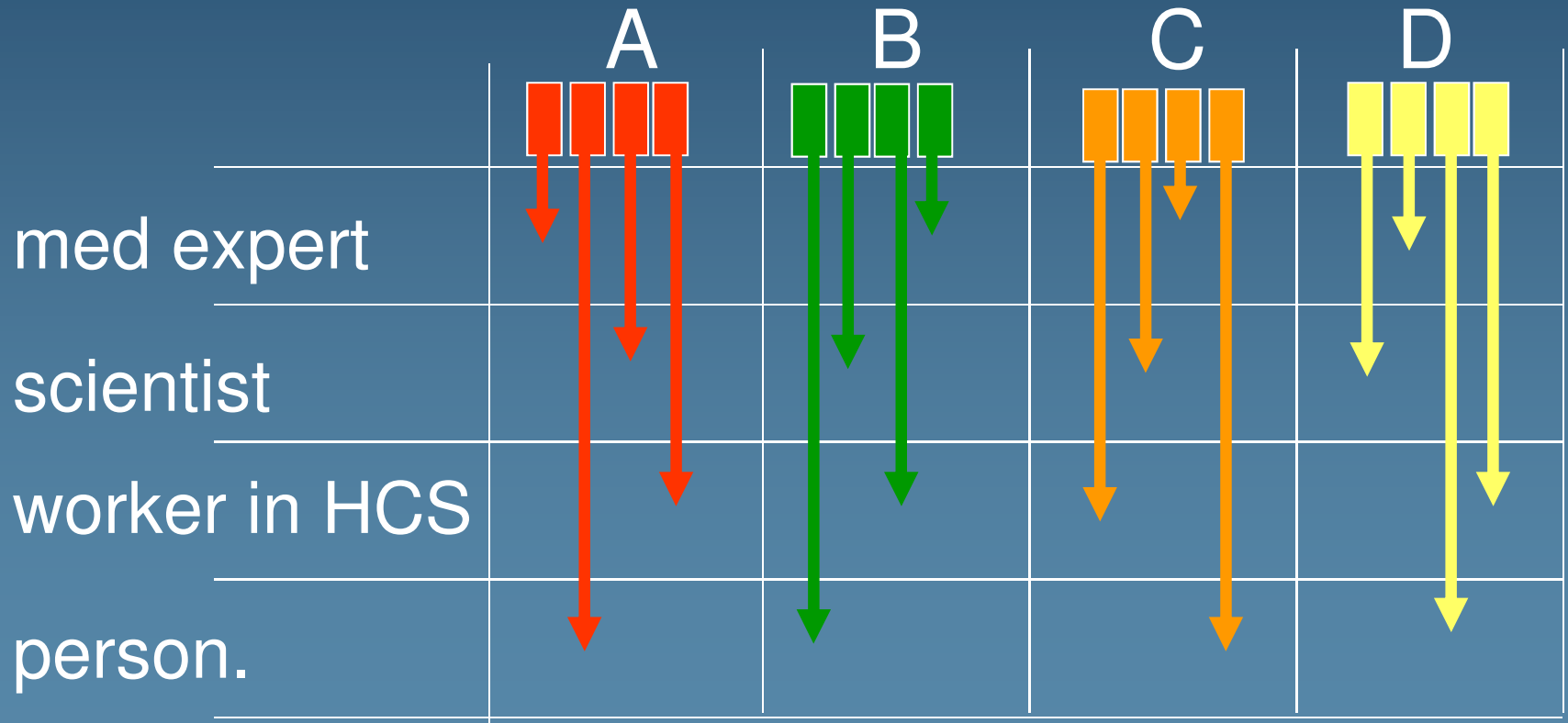
1 role – 1 instrument?

		instruments			
		A	B	C	D
roles	med expert	↓	↓	↓	↓
	scientist		↓	↓	↓
	worker in HCS		↓	↓	
	person.		↓		

multi-modal assessment

information sources

roles



implications

competencies are not stable characteristics

individual items are in themselves meaningful

sampling is more important than objectivity

judgement/feedback on the basis of rich information

a variety of instruments is needed for judgement

traditional approach: testing as screening

	competent	incompetent
passes		
fails		

modern approaches: assessment like patient care

progress
report

lab values

pathology

I.C.C.

radiodiag-
nostics.



what is the difference?

information rich judgements right until the end

goal is management: sampling and student learning

requires flexible education and training

not just a mere totaling of the results

final judgement is expert judgement

How to do this?

clinical practice

flexible individualised

combination of quantitative and qualitative

objective and subjective 'measurements'

individualised norm

trustworthy/open/ transparant

central document: patient chart

history and physical

lab values

imaging, pathology, etc.

follow up notes:

- diagnostic decisions

- therapeutic decisions

- prognostic decisions

central document: portfolio

formal objective assessment results

formal subjective assessment results

informal feedback

reflections/ minutes:

- diagnostic
- therapeutic
- prognostic

implications for the research agenda

design criteria for assessment programmes

how to combine information from various sources

how to scaffold human judgement

safe procedures

probabilistic psychometrics

Thank you