360° assessment of surgical trainees: Is it a hopeless chimera?


Gustave Moreau
1867

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360° assessment – Multisource feedback (MSF)

Meant to assess several constructs:

- Clinical competence: Knowledge and skills
- Professionalism
- Interpersonal relationships
- Managerial competence

The assessment pathway is cyclical

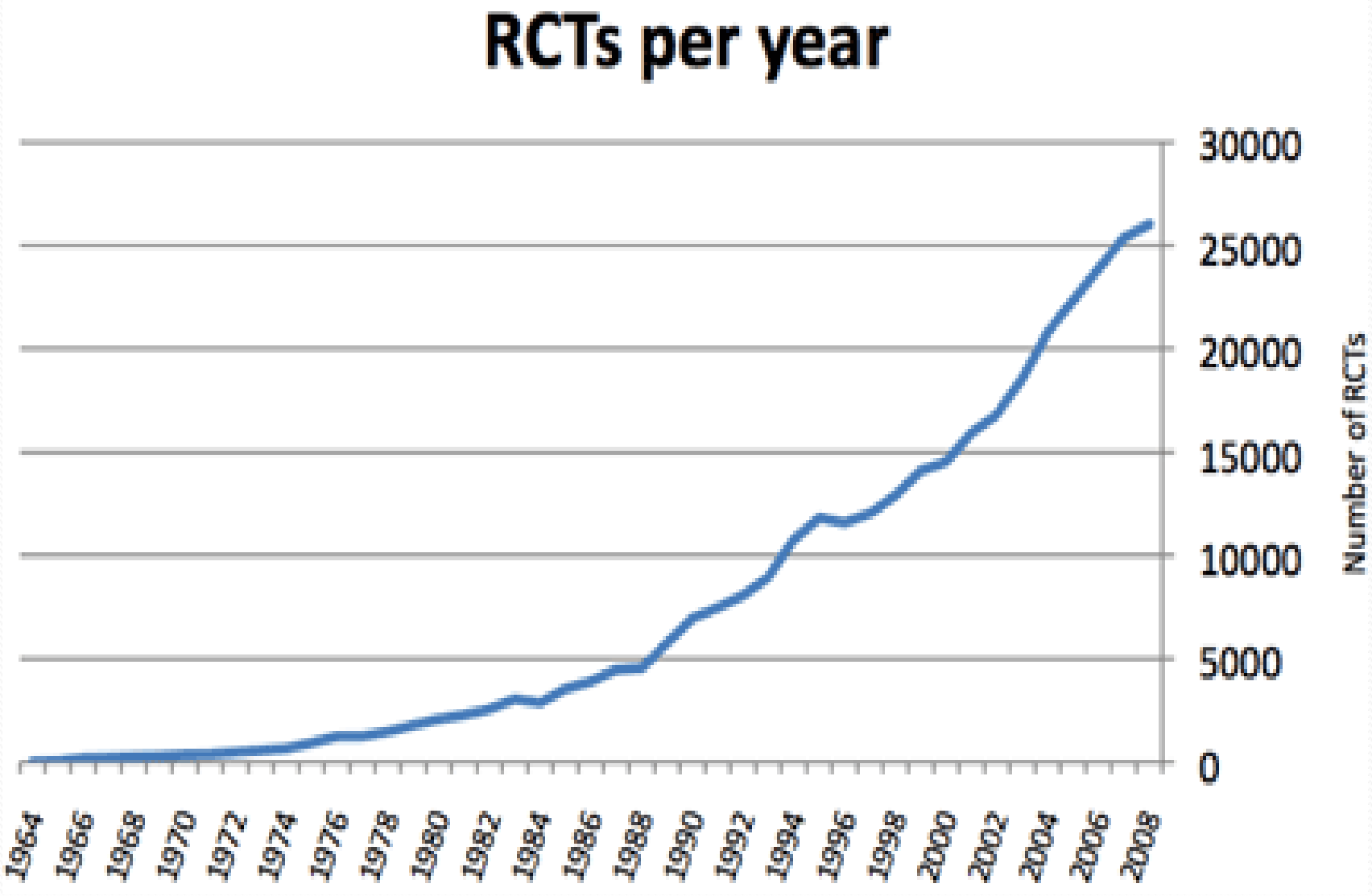
Components of surgical training:

- Knowledge : *Assessed to high degree*
- Skills: *Assessed to a low degree*
- Professionalism (Attitudes): *Hardly assessed at all*

Facing problems on all these issues

- Knowledge – Information overload
- Skills – WTD; Technological development; Undefined metrics
- Attitudes – Tangible regress

Knowledge:Medline (PubMed) Statistics



This information overload means:

- 1,114,000 medical scientific papers in 2013 in Medline
- >16,000 RCT's in 2013
- 309 RCT's / week
- 44 RCT's / day
- Growing by 7% / year
- Doubling every 10 years

Skills: Parallels with aircraft pilots in simulation and assessments:

- “Pilot handling flying skills have become eroded since……fully automated, systems-designed aircraft”

- “Most accidents occur in phases which involve pilot skills”

Remedial measures regarding aircraft pilots:

- Monitor skill levels during real-life pilot handling
- Monitor line flying observations
- Simulation observations
- Feedback from above indicators to adjust training skills

Assessing surgical technical skills

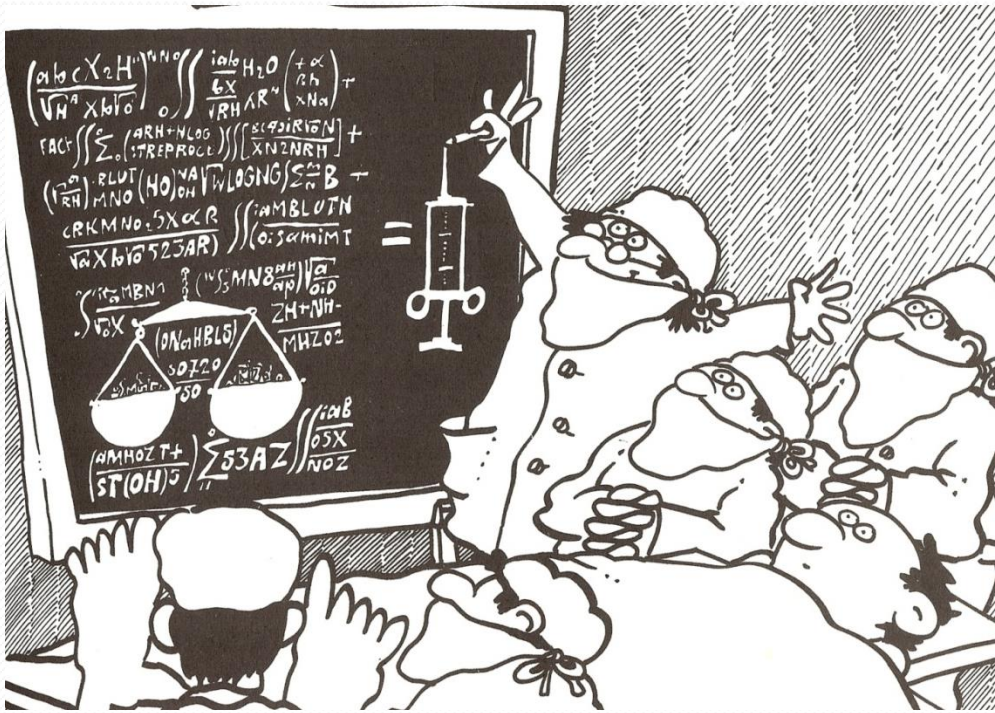
- Need for a taxonomy of metrics

What is a ‘metric’?

- Measurement of what is valued in human performance
- Each aspect of performance constitutes a metric

What skills are we assessing?

- Bedside tasks
- Surgical procedures
- Outcomes



Need to assess technical skills

- Patient safety
- New technologies
- Advent of simulation-based training
- Public and media scrutiny
- Accountability

Value of clinical skills centres

- Independent of ‘real patients’
- Allows structured training
- Immediate feedback
- Repeated practice
- Objective as well as subjective metrics of performance
- Risk-free training

Which model?

- Bench model
- Box trainer
- Task trainer (e.g. Central line insertion, colonoscopy, AAA simulators)
- Hybrid simulators (simulate technique and teamwork)
- Full body manikin
- Virtual reality
- Animal cadaver
- Human cadaver
- Live animal
- Live patient

Which instrument?

- Competence based logbooks
- Checklists (task-specific or procedural)
- Simulators and other models

What metrics?

- Objective
- Subjective

Objective metrics

- Psychomotor skills and abilities
- Speed
- Accuracy
- Efficiency (Time/motion studies)
- Manual technique
- Errors
- Task specific or procedural checklists
- Decision making skills
- Outcomes(e.g. Tensile strength of knot; wound closure approximation; patency of anastomotic closure; lesion margin distance; lymph node clearance count; wound infection rate; estimated blood loss; sperm count post vasectomy)

Subjective metrics

- Technical skills rating scales (Process rate scales)
- Assessment of human factors (confidence, stamina, temper, dealing with stress)
- Critical fails

Attitudes

- *The situation is not reassuring*

Lancet Editorial:
vol 376; 25/08/2010

Theodore Gericault 1819

"Surgery is a specialty adrift ..... lacks professionalism and leadership"

Status quo:

- Virtue based medicine is under threat
- Ours is a profession grounded in compassion and sympathy for the sick
- There is plenty of science and technology but little caring in medicine
- Medicine is becoming a technical exercise
- Health care has been transformed into a commodity – numbers, output
- Altruism, virtue, solidarity, human dignity and the common good seem to have no place
- Too much influence by the entrepreneur and corporate industry

How is training in professionalism done now?

- There is a “hidden curriculum”

- Osmosis from role models
- This may propagate inappropriate behaviour patterns

How can we influence training in professionalism?

- Foster a harmonious environment that encourages proper thinking and work
- Encourage meaningful debate
- Give recognition for positive outcomes
- Define opportunities that challenge trainees
- Be mindful of organisational vision, mission and values
- Attract and stimulate the best talent

Why is it important? The answer is in the content:

- Respect and compassion towards the sick
- Respect towards colleagues and junior staff
- Abide by the values of honesty, confidentiality and altruism
- Maintain competence throughout our careers
- Improve care by evaluating its processes and outcomes
- Participate in educational programmes
- Provide care irrespective of age, gender, race, disability, religion, social or financial status
- Deliver best quality care in a compassionate and caring way

How do we ensure our trainees (future colleagues) are professional?

- Step 1: Careful selection
- Step 2: Introducing professionalism into curriculum
- Step 3: Teaching and training of professionalism
- Step 4: Assessment of professionalism

Step 1: Careful selection

- Selection criteria vary widely
- Psychological testing to identify self-actualisers, e.g.
  - Acceptance and realism
  - Problem-centering
  - Spontaneity
  - Autonomy
  - Openness to change

Step 2

- Introduce Professionalism into postgraduate surgical curriculum e.g.:
  - American College of Surgeons
  - UK Intercollegiate Surgical Curriculum programme (Module 10)
  - Royal Australasian College of Surgeons

Step 3

- Teach and train
  - *Videos and film to stimulate discussion*
  - *Clinical theatre to assess medical behaviour*
  - *Video based virtual patient case (RCSI)*
  - *Sharing of anonymous 'patient stories'*
  - *BMA – guidance on use of social media*

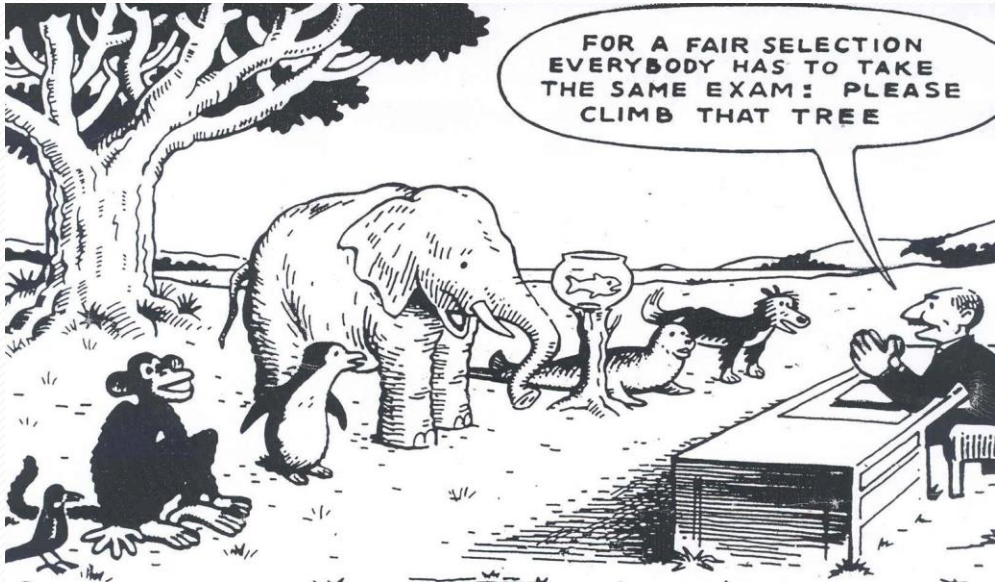
- However:
- Teaching and training of professionalism – still in its infancy
- Little evidence of how to train and teach professionalism
- Doubt as to effectiveness of formal teaching on attitudes and behaviour
- Thus further research in this area is required

Step 4

- Assess
  - *If professionalism is not assessed – given low priority by trainees*
  - *Trainees concentrate only on areas that are formally assessed*
- Multisource feedback – 360 degree assessment
- Need for a conscientiousness index – engagement in educational activities, punctuality, submission of data and assignments on time, participation in educational activities;
- Need for a professionalism index – assessment by trainers/tutors (mostly subjective)

What assessment prerequisites are necessary?

- Appropriateness and Relevance
- Standardization:– Contents and execution
- Validity:– Accuracy of tasks with the relevant learning goals
- Reliability
- Objectivity
- Transparency
- Equity



Assessment: Who should be the assessors?

- Self
- Peers
- Co-workers
- Patients

Limitations of 360°assessment

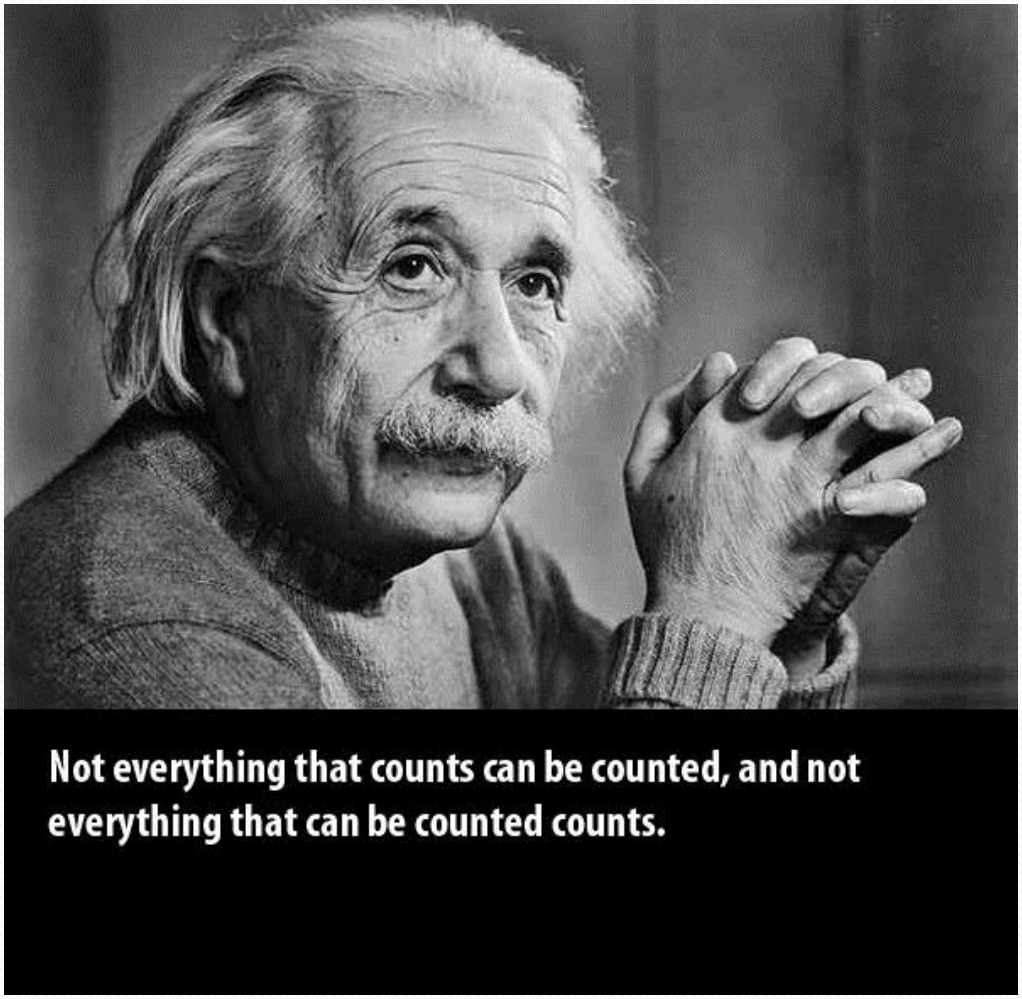
- Technical skills assessment tools are often considered better for formative assessment than for summative assessment
- Their reliability can be calculated mathematically only to some extent from the various observations *(Inter-rater, Test-retest, Internal consistency reliabilities used*)
- Multisource feedback (MSF) is probably useful both for formative and summative assessment

Difficult but necessary

- ***These are metrics of convenience and are obviously not absolute***

- ***The challenge is in making them practicable***

Conclusion



.....but we need to try to make possible what is necessary.

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