Curriculum Development

Dr. Musharraf Husain

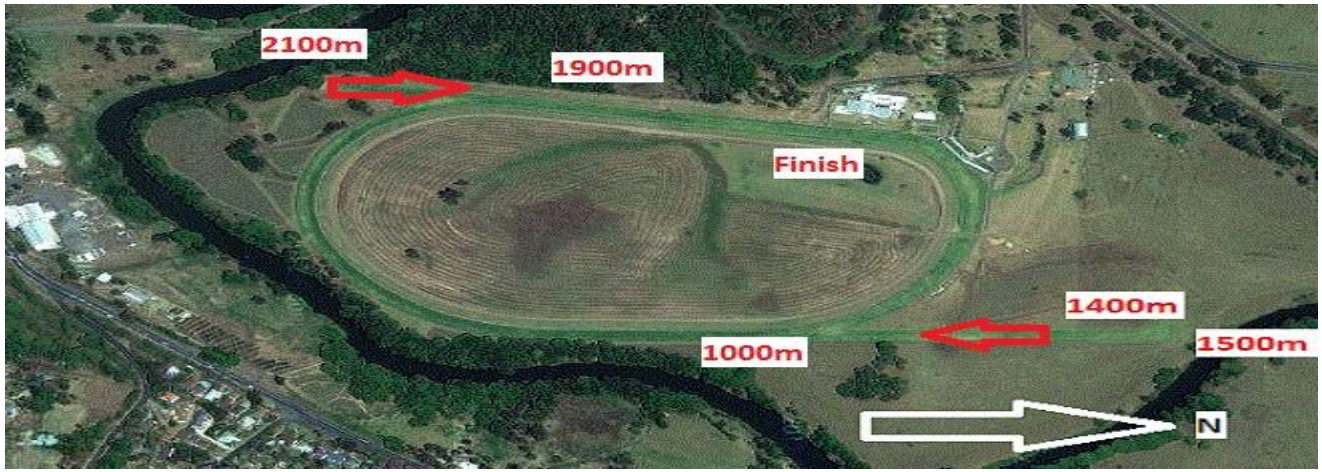
MS,DNB,MNAMS,MRCS(Edin)

Member MEU

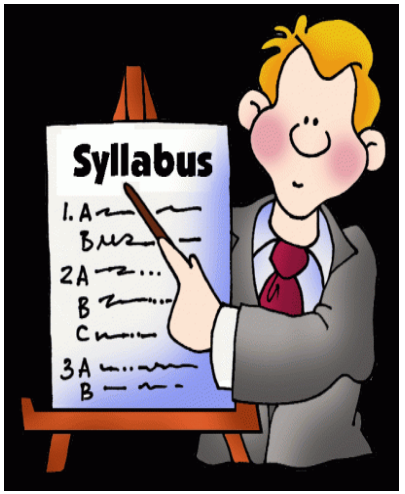
Curriculum

Latin word – *“race-course”*

(***Path*** to be followed and ***frame*** within which it has to be followed)



Definition



Syllabus:

Summary of the topics to be covered.

Curriculum:

A plan of action which incorporates the *learning outcomes* to be attained over a *period of time* by exposing the learner to various *learning experiences.*

Planning the Curriculum

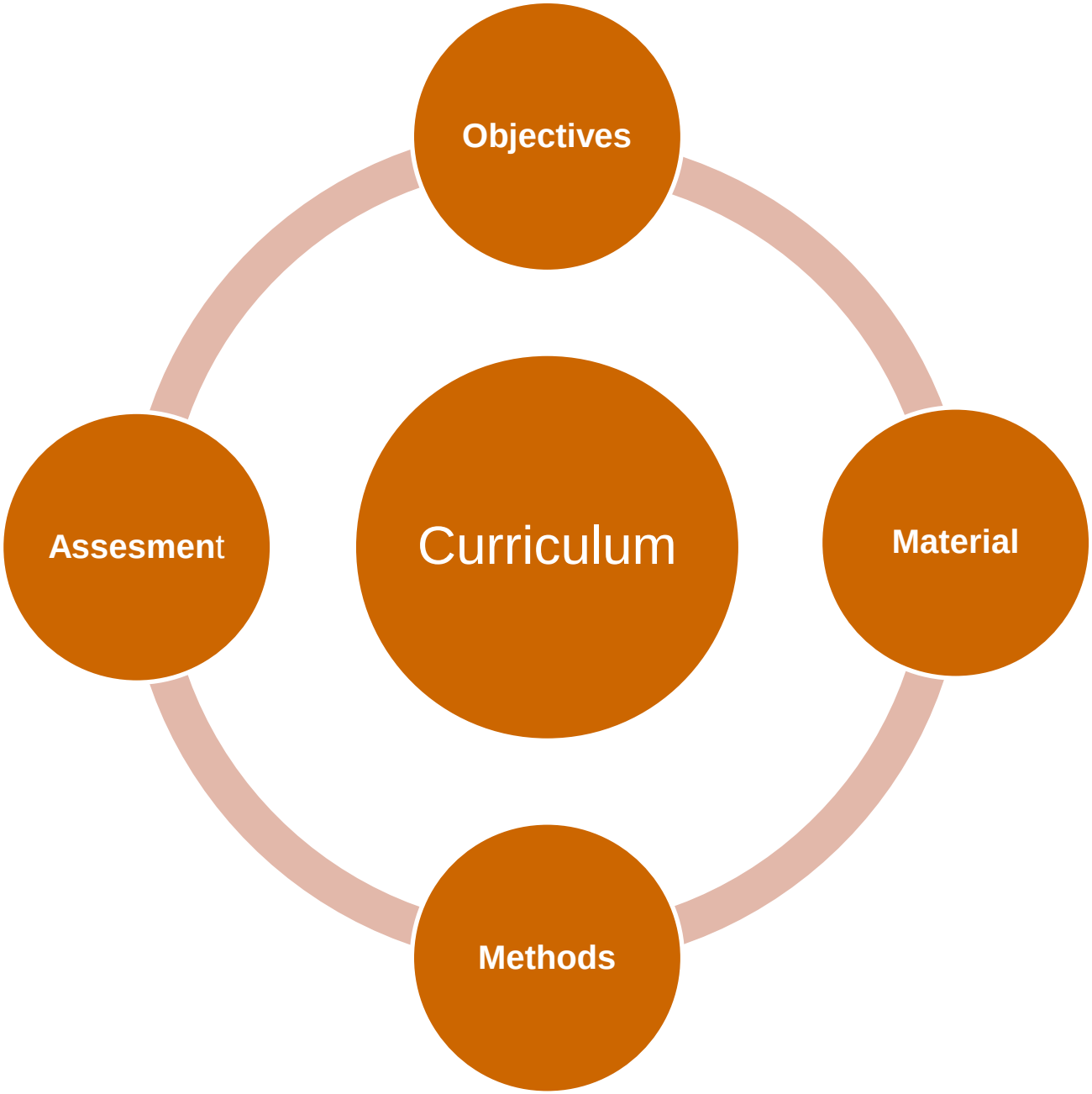
- Curriculum foundation
- Curriculum Components

Curriculum Foundation

- Why a subject is being taught
- Who is being taught
- How a subject is being taught
- What is to be achieved

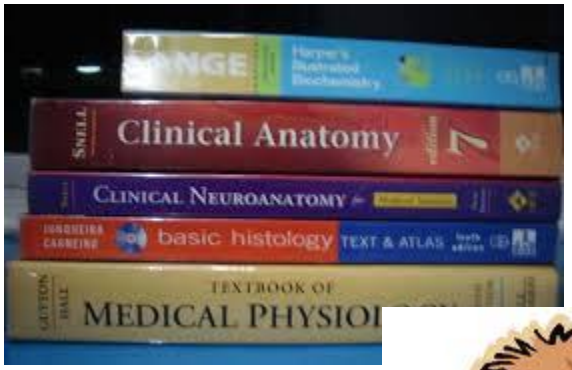
Curriculum Components

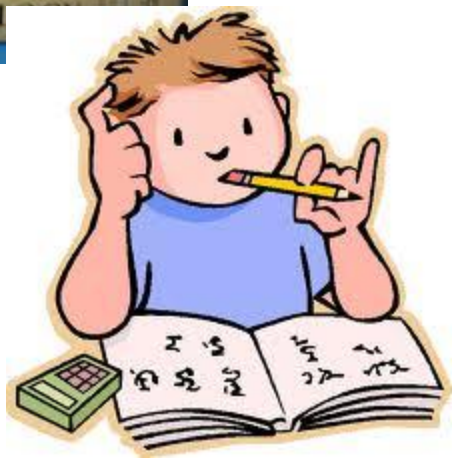
- Objectives
- Materials
- Methods
- Assessment

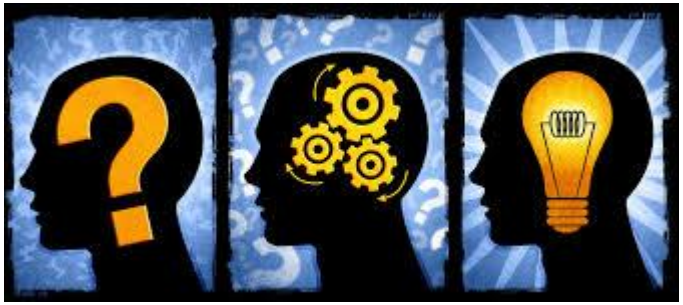

Objectives
Assesment
Curriculum
Material
Methods

Approaches to Curriculum planning

- Subject centred
- Learner centred
- Problem solving

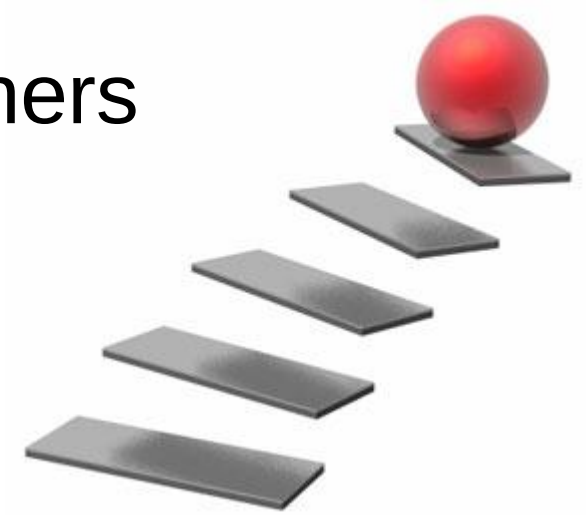






Steps to develop curriculum

- Problem identification
- Needs Assessment of learners
- Goals and Objectives
- Educational Strategies
- Implementation
- Evaluation and Feedback



Innovations

- Integrated
- Problem based
- Skills training
- Affective domain

Learning objectives

Subject	Systems	Weightage	Cognitive	Psychomotor	Affective
General Surgery		30	40	40	20
Systemic Surgery		70	50	40	10
	Gastrointestinal	20			
	Hepatobiliary	10			
	Urology	20			
	Endocrine	05			
	Speciality	15			

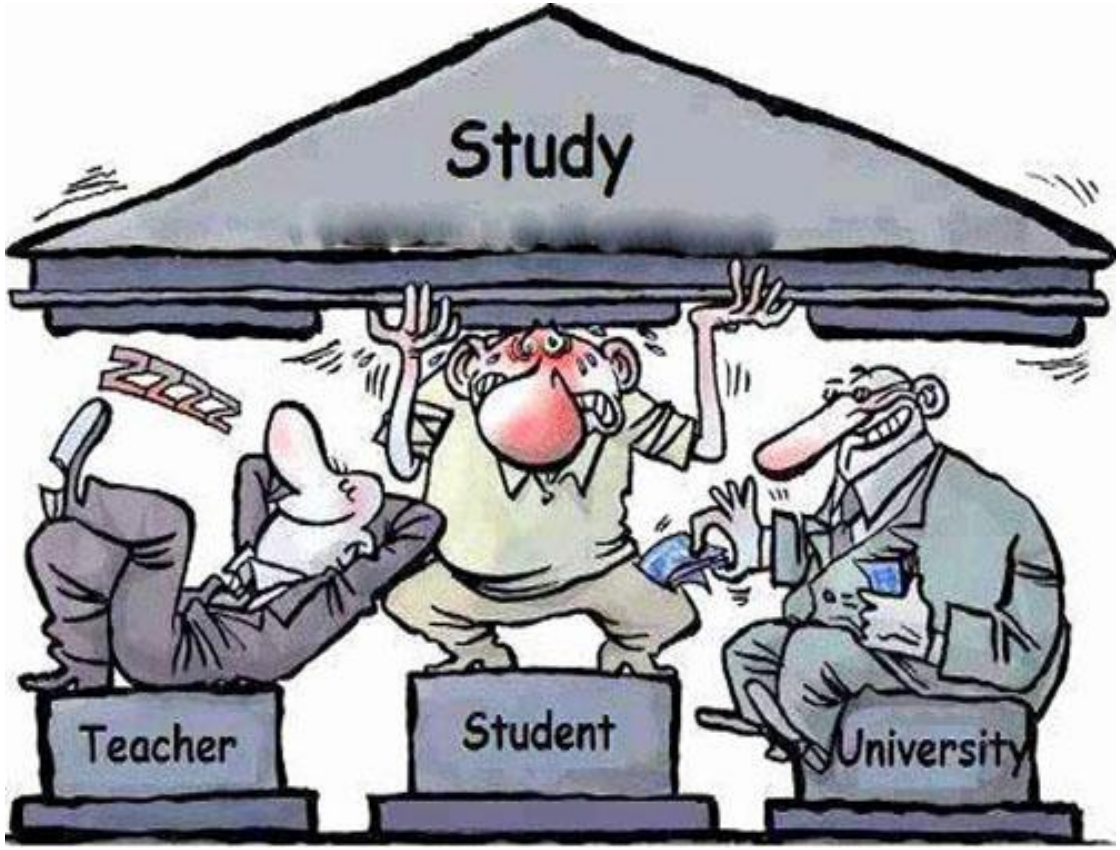
Aim to accomplish your goal through various objectives

Important!

Objectives have to stem from the aim and the goals are the breakdown of the objectives.

Curriculum Implementation

Thank You



Teaching Skills and Strategies for Effective Lecturing

Dr. Azra S Hasan

Mind is not an empty vessel

that has to be filled

but a _____

that has to be _____

Welcome and Rejoice

Learning Objectives

1. Appreciate the importance of teaching skills
2. Should be able to use these skills effectively

Teaching Skills

1. Lesson planning
2. Set induction
3. Presentation
4. Attitude
5. Listening

Teaching Skills

6. Effective questioning
7. Stimulus variation
8. Use Of A.V. Aids
9. Pupil’s reinforcement
10. Closure

1.Lesson Planning

Objectives? Content ?
Take home points?

How can you organize your material to accomplish your objectives?

Student feedback

2. Set Induction

"Draw pupil's attention"

- **Asking few questions**
- **Quotations**
- **State objectives**
- **Why the topic is important ?**

3. Presentation

Making your presentation stick by chip and Dan Heath- 2008

Make Ideas Sticky

HOW ?

S– simple

U–unexpected

C–concrete

C–credible

E–emotion

S–stories

WOW !

S- Simple

- The process of prioritization (find the core)
- MUST KNOW, DESIRABLE TO KNOW
- New additions

U– Unexpected

- **Gap theory** : Gap in knowledge creates intellectual curiosity –

C- Concrete

- ‘Velcro theory of Memory’
- More ‘sensory hooks’

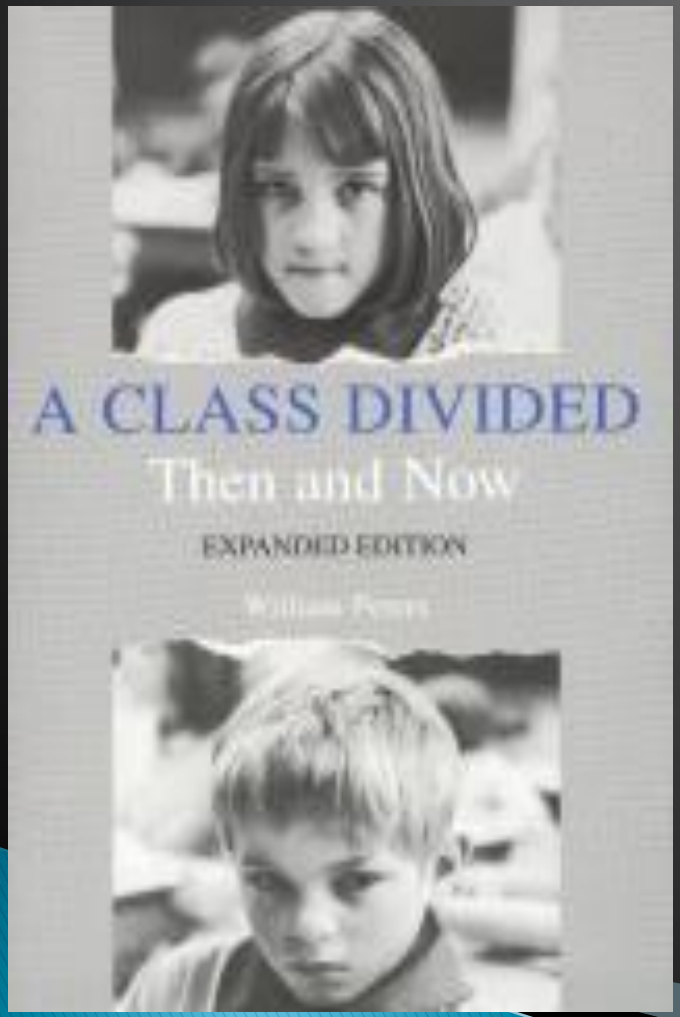
CB IUS BUP SCPUN O ID A

- CBI USB UPS CPU NOIDA

C-Credible

- See something or experience it, to believe it
- Use statistics – focus on relationship between two and not the number

Jane Elliot Experiment In 3rd Grade Elementary School On April 5, 1968



E,S- Emotion & Stories

- It makes people care for idea or concept
- Make people feel something
- Empathy and horror works

5,6- Listening and Effective Questioning

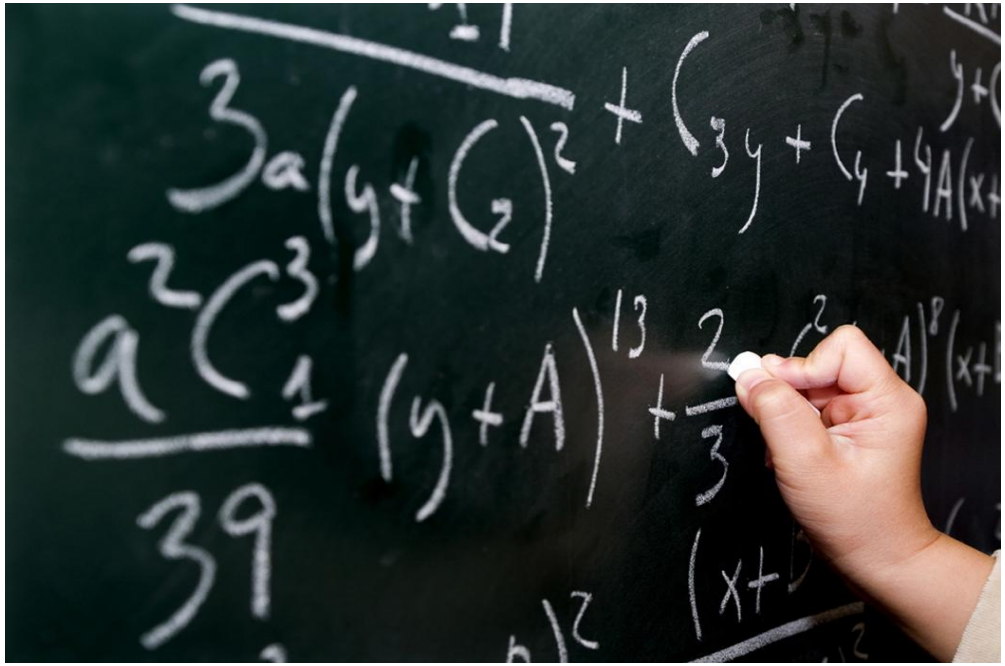
- **Involve , interact with students**
- **Listen** to your audience
  (students)
  – spoken and unspoken

7%

17%

67%

Curse of Knowledge…

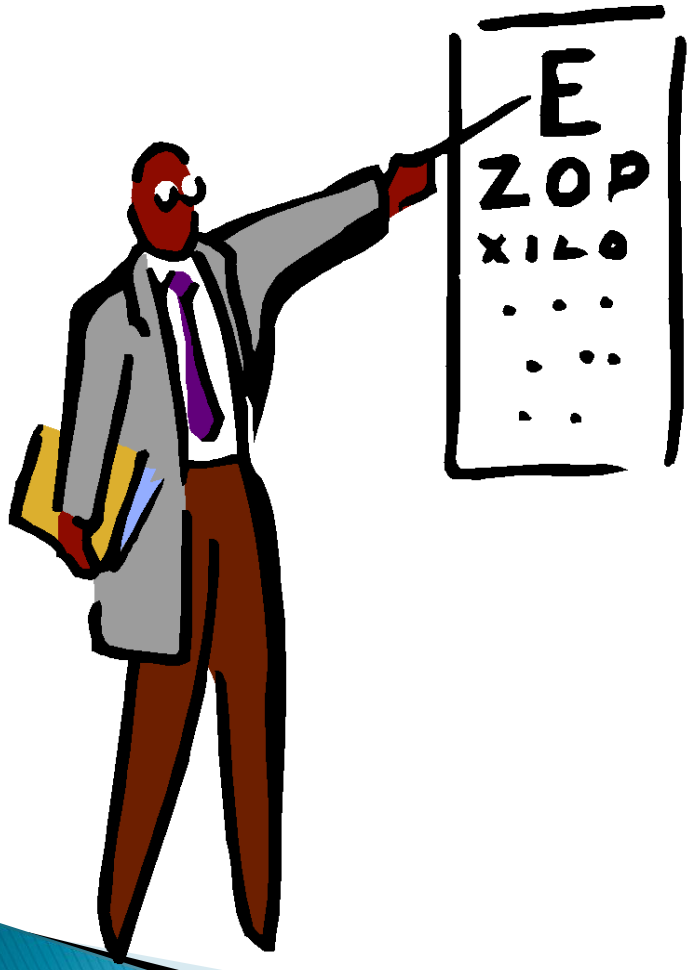


And the confusion it causes!

7.Stimulus Variation

- Changing pace of lecture by:
  - By shifting emphasis
  - Soliciting questions
  - Jokes
- Giving directions

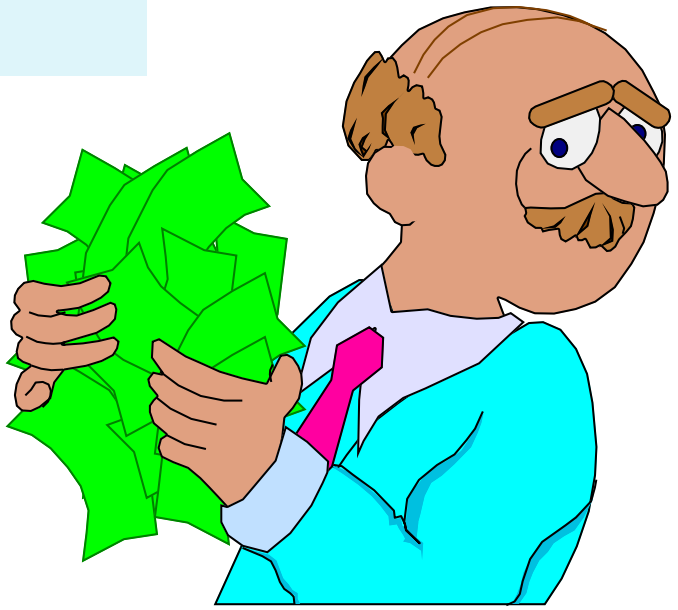
8. Use of Aids



9- Pupil reinforcement

10. Closure

- **Summarizing**
- **Quotations**
- **Asking some questions**



The FUN test

is a very reliable measure of competence. The only people who have fun skiing slopes are those who have the expertise to enjoy them

3,4.Presentation and Attitude

how to LECTURE

Definition- lecture

- Uninterrupted rambling exposition of apparently irrelevant information delivered in a sleep inducing monotone for one hour

Lectures……

OUT *of* FASHION

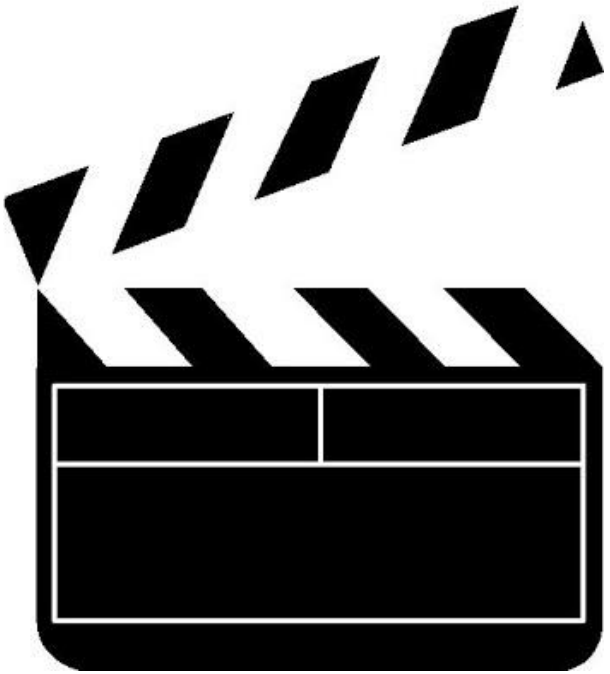
???

4 P's of Lecturing

- Preparation
- Presentation
- Performance
- P…

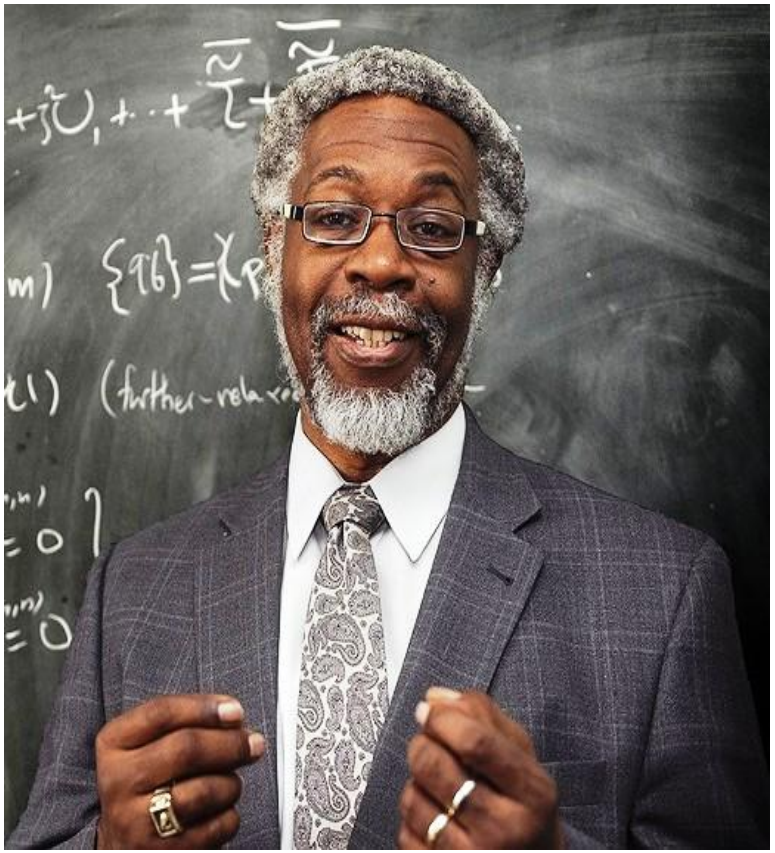
1.Performance

- Showtime!!! Lecturing as theatre



Performance

- Dr. Fox experiment
- ***Mathematical Game Theory***



Six Separate Lectures

Great performance

High content	Medium content	Low content
(26 facts)	(14 facts)	(4 facts)
High seduction	High seduction	High seduction

Bad performance:-

High content	Medium content	Low content
(26 facts)	(14 facts)	(4 facts)
Low seduction	Low seduction	Low seduction

Dr. Fox : *Biochemistry of Learning..*

High Seduction: enthusiasm, humor, friendliness, expressiveness

Low Seduction: monotonous, boring, angry

Who lights the lamp in your head?

"Before listening to your lecture I was confused about this subject

Having listened to your lecture I am still confused

……|**But on a higher level"**

Performance Cont'd

- I speak, you listen

"Where the notes of the lecturer become .....

the notes of the student without passing through the minds of either"

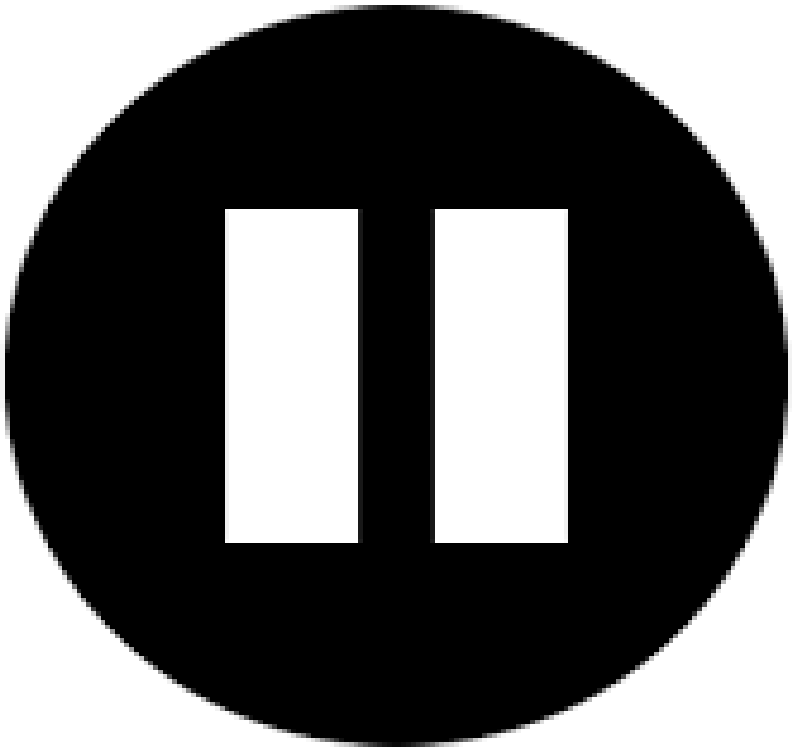
Verbal markers:-

- ***Tell them what you're going to tell them;***
- ***Tell them;***
- ***Tell them what you told them.***

- **Transition: "*My next point*..."**, **"*In conclusion*..."**

- **Emphasis: "*Let me highlight this point*…"**

Pause: To let the point sink in



- **Rate:** 150 words/min; 1 slide/min
- **Modulation:** jocks vs. evangelists vs. infomercials
- **Volume**: project; microphone stage presence
- **Direction**: address each person in the room, one thought per person

Control negative emotions

- Anxiety, stage fright, epinephrine, arousal
  - Use the extra energy
  - Breathing exercises
- Humor don't have to be a comic, but it helps
- Enthusiasm check your energy level
- **TEACHER LIVELINESS**

Boring….

Angry

Or Would You Rather have me talk?

LECTURALGIA

- 2 WORD DEFINITION..???

Causes of lecturalgia

Med Educ 2001;35(12):1135-42.

Poor judgment

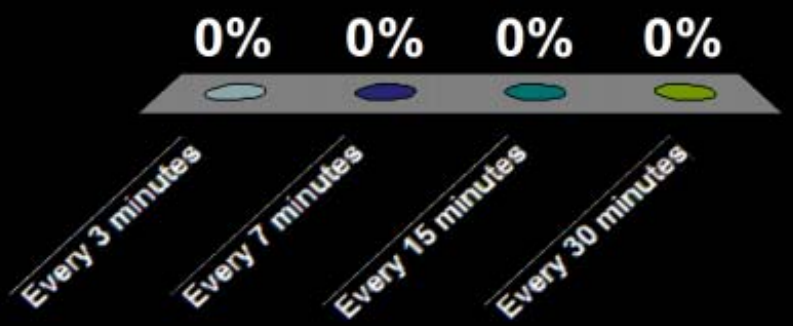

Poor
organization

Poor delivery

Symptoms to look out for….

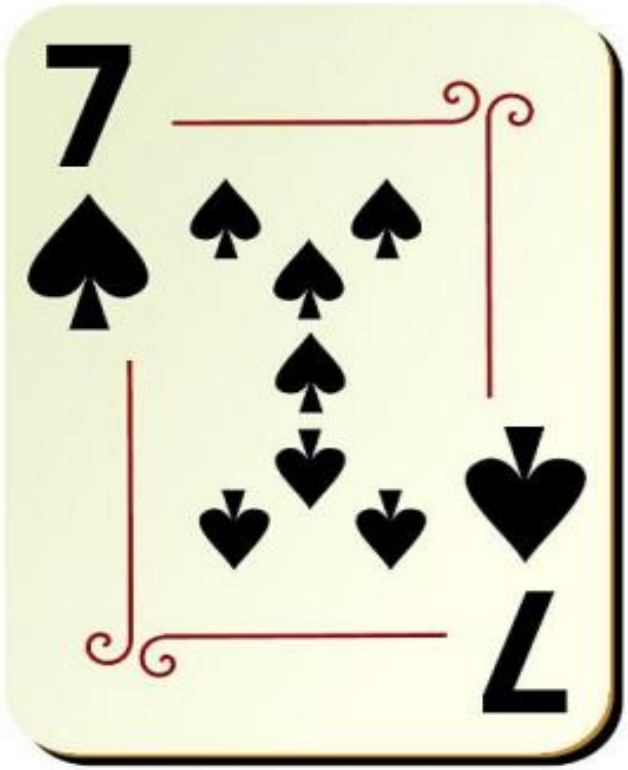
How frequently do you need to reengage your audience?

1. Every 3 minutes
2. Every 7 minutes
3. Every 15 minutes
4. Every 30 minutes



Rule of thumb … PLUS…6

Every



Minutes

KISS -KEEP IT SIMPLE, STUPID

- Most people recall only 2-3 points
- Don't read facts, print them out
- Simplify or focus on HEADING and technical points

CHALK AND TALK

- Board legible from last row
- White or Yellow Chalk \ Black Marker on White board
- Use board SYSTEMATICALLY
- Talk to AUDIENCE not the board
- NEW CONCEPT on a clean board
- PERFORMANCE is most important

Photographic versus Phonographic Memory

Mr PP

……But conditions apply!

Conditions apply:-

- FONT
- COLOUR
- BACKGROUND
- 6x6 RULE

- This is Arial 12
- This is Arial 16
- This is Arial 28
- This is Arial 32
- This is Arial 44
- This is Arial 48

Make It Clear

- ALL CAPITAL LETTERS ARE DIFFICULT TO READ
- Upper and lower case letters are easier
- Underlines may signify hyperlinks
- Instead use colors to **emphasize**

Keep it simple

- The 6 x 6 rule
  - No more than 6 lines per slide
  - No more than 6 words per line
  - two font types per presentation

Laser Etiquette

Inspire

Why lecture ????

Influence

Inspire

Inform

Definition of Lecture

L- LIVELY
E- EDUCATIVE
C- CREATIVE
T- THOUGHT PROVOKING
U- UNDERSTANDABLE
R- RELEVANT
E- ENJOYABLE

“Tell me I forget

Teach me I remember

Involve me and I learn”

In Conclusion…

- **4 P's:**

1. **Performance,**
2. **Preparation,**
3. **Pre**

What is the final P .. the 4th P???

- A [illegible]rds
- **P**ractice makes perfect
- Worth saying, bears re**P**eating

Final "P" to great teaching skill

Passion


THANK
YOU
AND
HAPPY
NEW YEAR

Dr Chandra Mohan

LEARNING RESOURCE MATERIALS IN MEDICAL EDUCATION

SLO

- At the end of this session you should be able to impart a student the ability to:
- Identify resources,
- Design a plan for resource use,
- Make resources available, and
- Work well with teachers, peers, and other resource persons.

LRM

- **Learning resource materials are MEANS OR VEHICLES used EFFECTIVELY either by student or teacher in the learning process.**
- **"Those human and material resources that provide learners with the facts, principles, and experiences necessary to realize meaningful learning outcomes."**

WHY SHOULD WE KNOW LRMS

- **Medical profession- Life long self directed learning**
- **A good teacher aims to make himself or herself irrelevant as he or she imparts the students ability to make best use of resources**

STAGES OF SELF-DIRECTED LEARNING

- Slotnick's staged theory of physicians' learning

	Stage	Stage-specific activities
Stage 0	Scanning	Learners are alert for potential problems
Stage 1	Evaluation	Learners collect information to decide whether to take on the problem
Stage 2	Learning	Learners gain the skills and knowledge needed to address the problem
Stage 3	Gaining experience	Learners apply the new skill and knowledge in a range of ways and settings

What are LRMS

- Faculty in Class
- Books
- Curricular Materials
- Journals
- Peers
- Senior Colleagues
- E Books/Journals
- Websites
- Simulation
- Manikins
- Paramedics
- Tests

USES OF LRM

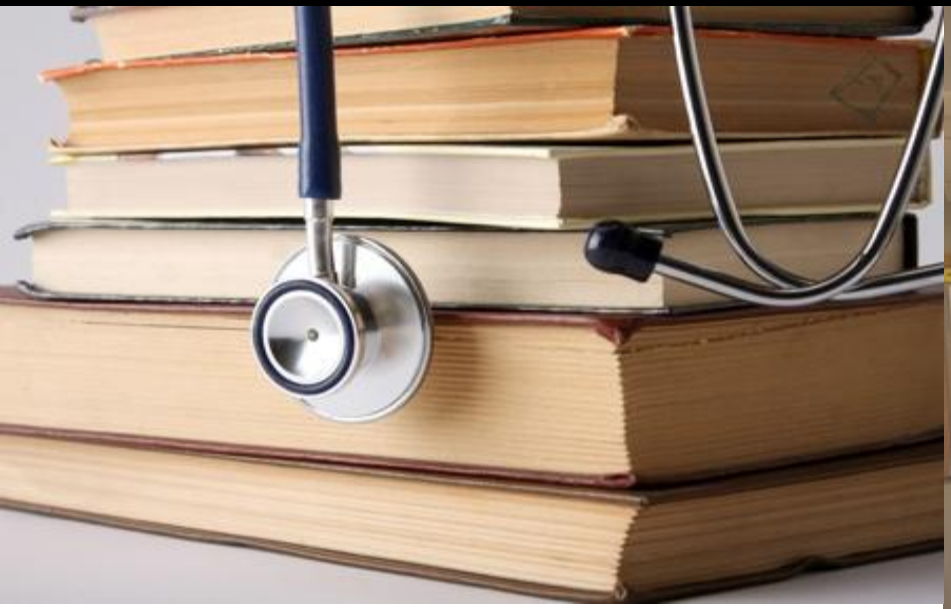
- Teacher to supplement the lecture, seminar or practical or laboratory sessions.
- Students to supplement formal or didactic teaching.
- Students for independent learning.
- Professionals to educate the community, health decision makers etc.

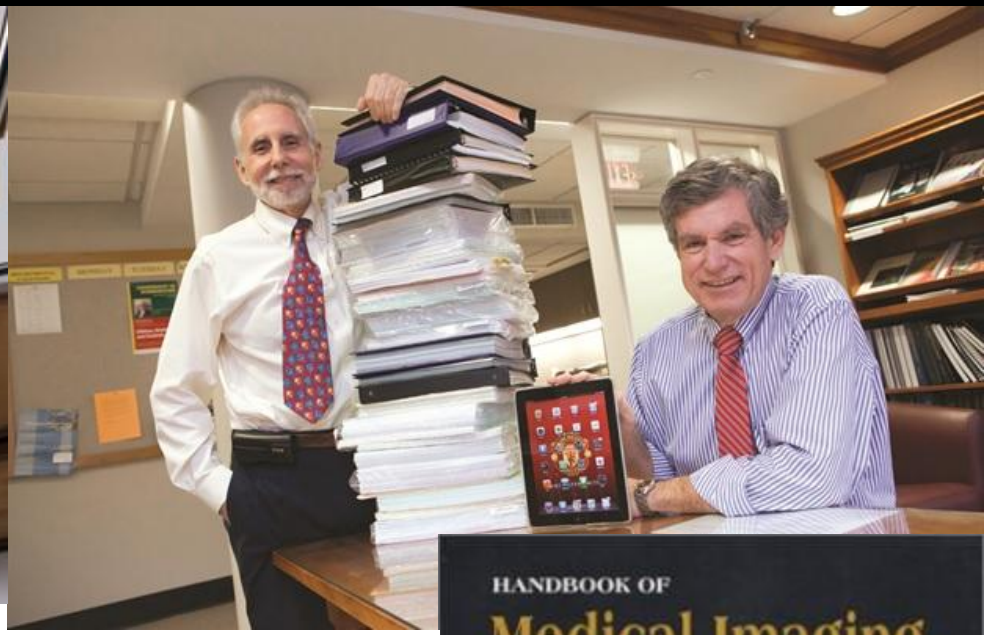
TYPES OF LRM

- A- Printed Media
- B- A-V Aids
- C- Advanced Technology
- D- Live Materials

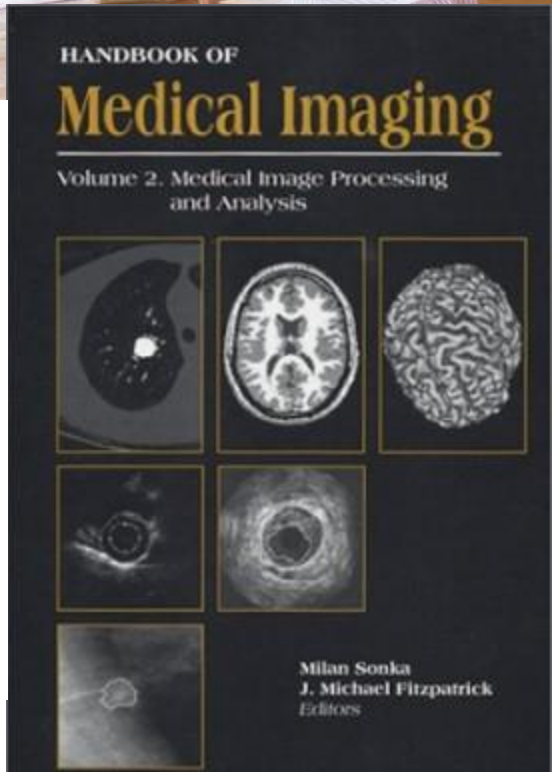
PRINTED MEDIA

1. Books, Journals, Handouts Etc.
2. Programmed Text ; Self Learning Modules and Packages
3. Written Simulated Patient Management Problem (SPMP)






HEART & LUNG
PEDIATRIC PULMONOLOGY
Volume 18, Number 6, December 1994
PEDIATRICS
CHEST
CRITICAL CARE MEDICINE


HANDBOOK OF
Medical Imaging
Volume 2. Medical Image Processing and Analysis
Milan Sonka
J. Michael Fitzpatrick
Editors

AUDIO-VISUAL MEDIA

1. Visual Aids
    a) Non Projected
    b) Projected
2. Audio-Aids
3. Audio-Visual Aids

NON PROJECTED

PROJECTED

ADVANCED TECHNOLOGY

1. Computer Assisted Learning (CAL)
2. Computer Aided Instruction (CAI)

E- LEARNING RESOURCES

- Synchronous (text based chat, voice and video conferences, collaborative sessions, etc.) and Asynchronous communication (forums, emails, off-line messages, etc.)

- http://histology.med.umich.edu/schedule/medical

SOME ONLINE RESOURCES

- himsr.org
- www.medscape.com
- www.**web**md.com
- www.nlm.nih.gov/medlineplus
- www.cdc.gov
- www.who.int/en/
- www.mayoclinic.com
- www.medilexicon.com - Dictionary
- www.medicalstudent.com - Free Text Books
- www.biomedcentral.com - Free Medical Journals
- www.freemedicaljournals.com - Also: Free Medical Books

LIVE MATERIALS

1. Patients
2. Community
3. Teachers
4. Students

SELECTION OF APPROPRIATE LRM

- The **OBJECTIVE** to be achieved.
- **Who** is to be taught ?
- **Size** of the group.
- **Ability of the instructor** to use a particular aid.
- **Time available** for the instructors.
- **Budget** allotment

THANK YOU

From Assessment to Evaluation

Dr Satendra Singh

Medical Education Unit, UCMS & GTB Hospital,

FAIMER Faculty

Assoc Editor, RHiME

Editorial Member,

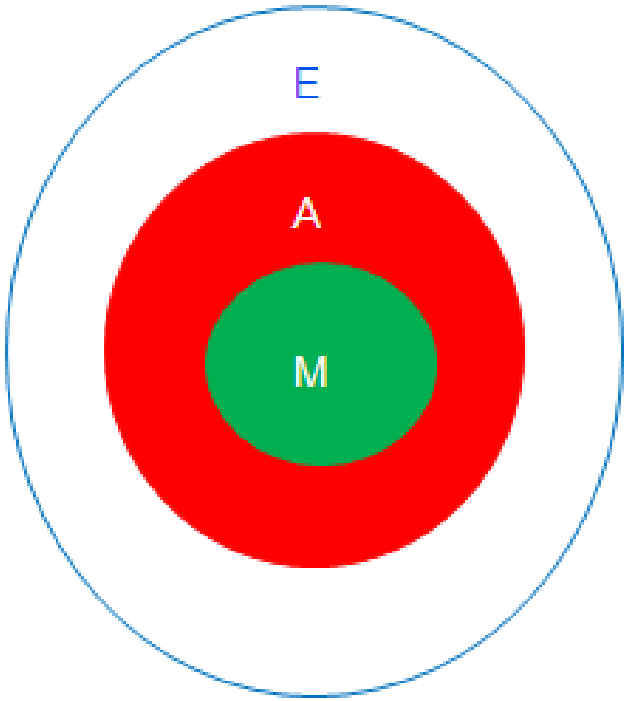
J Educ Evalv Health Prof

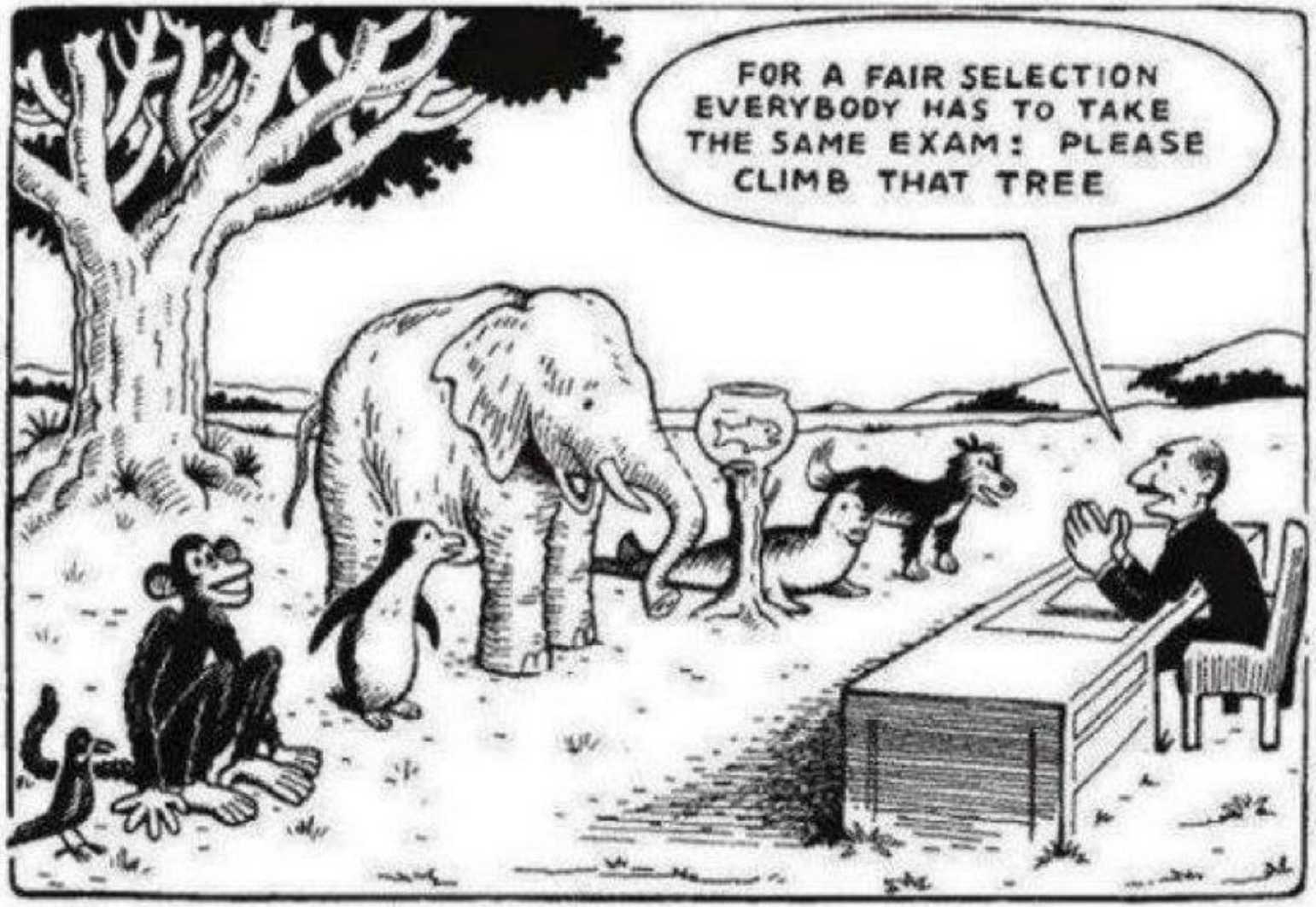

I TAUGHT STRIPE HOW TO WHISTLE
I DON'T HEAR HIM WHISTLING
I SAID I TAUGHT HIM, I DIDN'T SAY HE LEARNED IT
It is assessment which helps us distinguish between teaching and learning.

- It is assessment which help us distinguish between teaching and learning
- Students learn not what you expect, but what you inspect.
- Anything which is not evaluated is never learnt properly

Clarify these terms?

- Measurement
- Application of tool for fin achievement
- Assessment
- Objective measurement interpretation
- Evaluation
- Passing value judgment

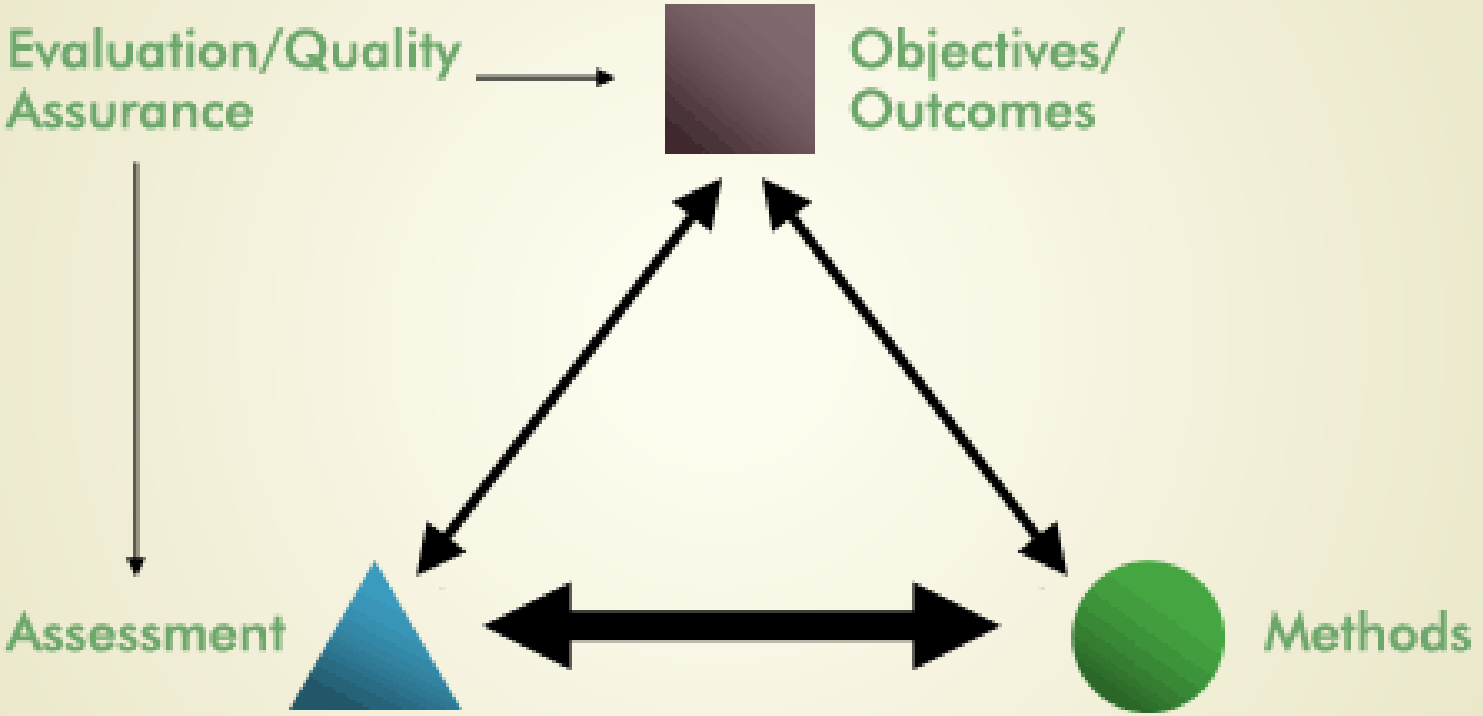




Our Education System

http://techmorf.com/category/pics/

Linking up the Elements: The Educational Paradigm



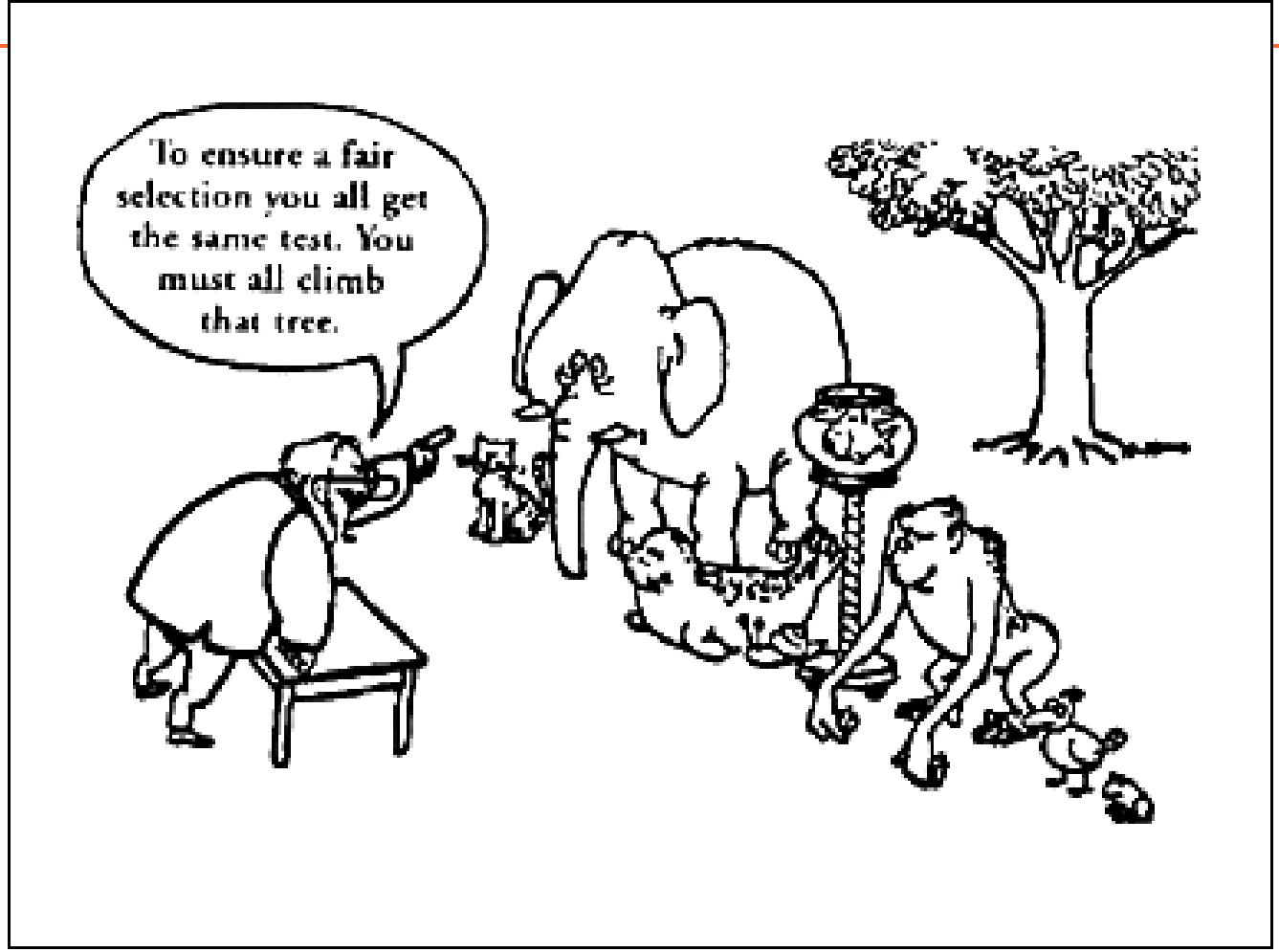
Clarify these terms?

- Test
- Conventionally, refers to a written instrument used to assess learning

- Tool
- Used to observe skills or behaviour to assess extent of learning

Clarify these terms?

- Criterion-referenced testing
- Norm-referenced testing



- CRT –Fixed standards; only pass/fail
- NRT – Rank ordering, no fixed criteria, how they fared in relation

Purpose of Assessment?

- Pass/fail
- Rank order the students

- Measure improvement
- Providing feedback to students

Prove	Improve

What are the types of Assessment?

- Formative
- Summative
- Continuous Internal Assessment

The Garden Analogy

If we think of our students as plants …

Summative assessment is the process of simply measuring them.

Formative assessment is the equivalent of feeding and watering the plants appropriate to their needs - directly affecting their growth.

Chef tasting the soup – Formative
Guests tasting the soup - Summative

Assessment for learning –Formative

Assessment of learning - Summative

Assessment paradigms

Assessment for Learning

- enables teachers to use information about students' knowledge, understanding and skills to inform their teaching
- teachers provide feedback to students about their learning and how to improve

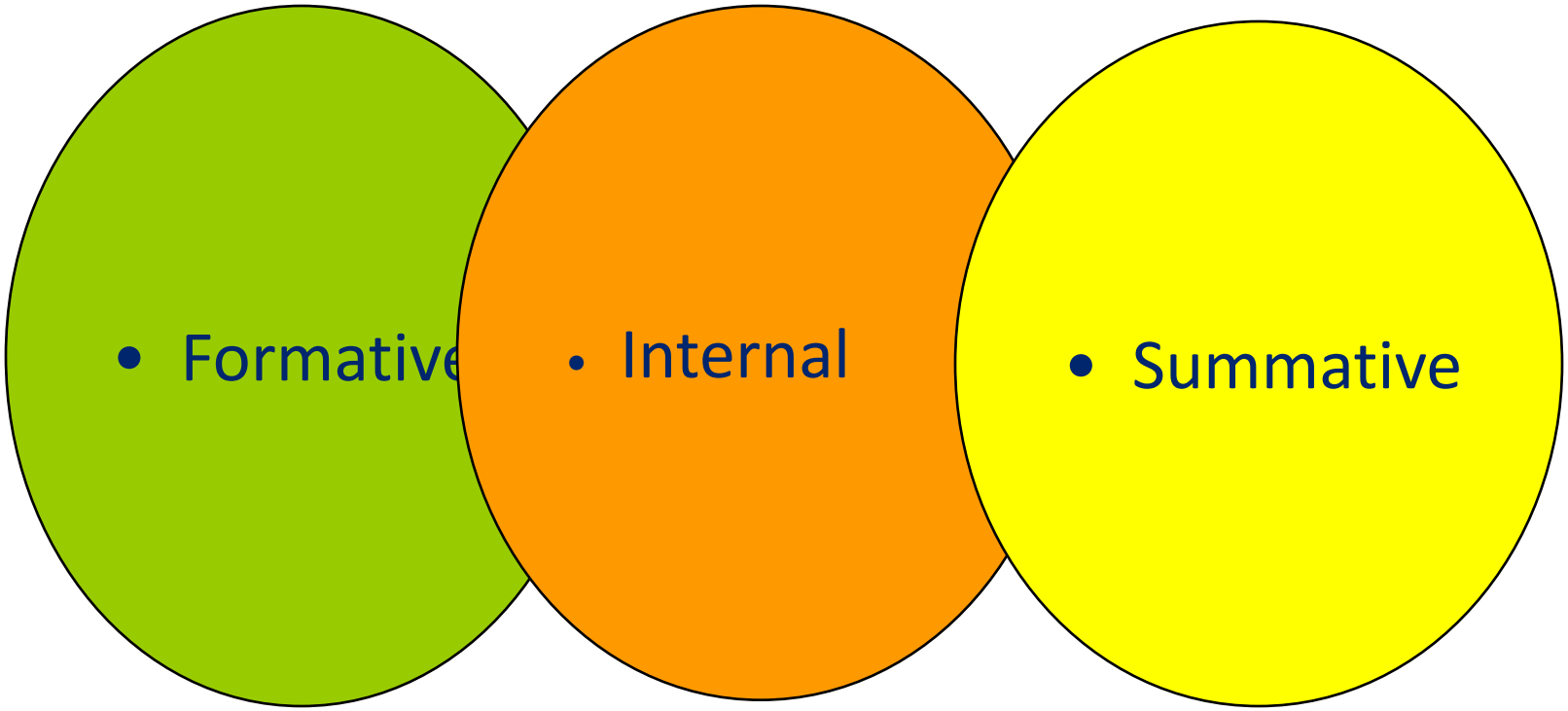
Assessment as Learning

- involves students in the learning process where they monitor their own progress, ask questions and practise skills
- students use self-assessment and teacher feedback to reflect on their learning, consolidate their understanding and work towards learning goals

Assessment of Learning

- assists teachers to use evidence of student learning to assess student achievement against learning goals and standards

Methods of assessment used drive student learning



•Assessment should be ***continuous*** to be meaningful

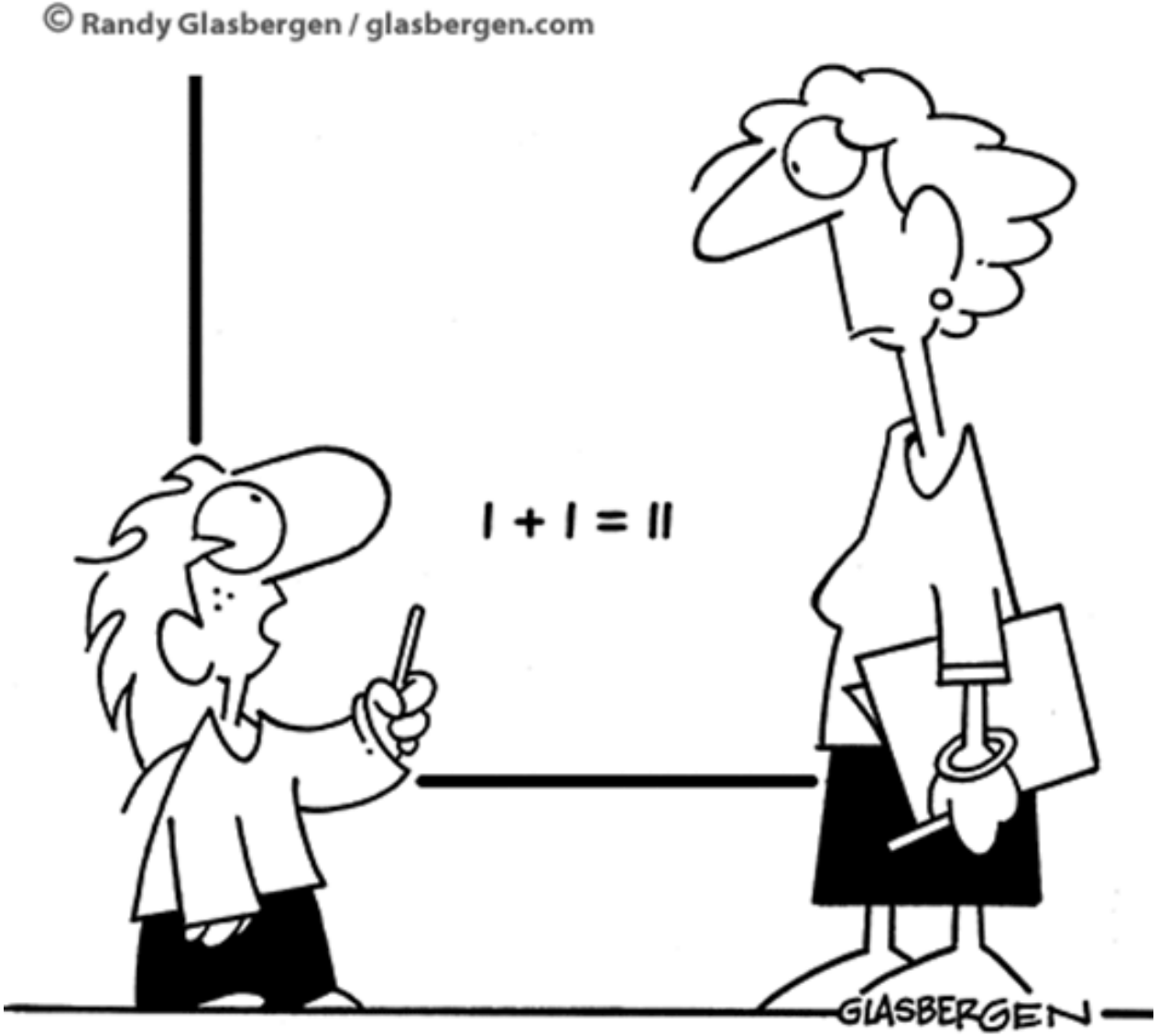
Strengths of Internal Assessment

- Opportunity to provide corrective feedback
- Range of competencies can be tested
- Continuous assessment steer the students' learning

Problems with Internal Assessment

Problems with Internal Assessment

- Improper implementation
  - How to implement? 50%?
- Lack of faculty training
  - No feedback, no weightage to soft skills
- Misuse/abuse
  - No longer to be added in finals
- Lack of acceptability
  - Variable marking, too much power



"If you want a better answer, ask a better question!"

SINGH, *et al*

Box 1: THE QUARTER MODEL OF IN-TRAINING ASSESSMENT

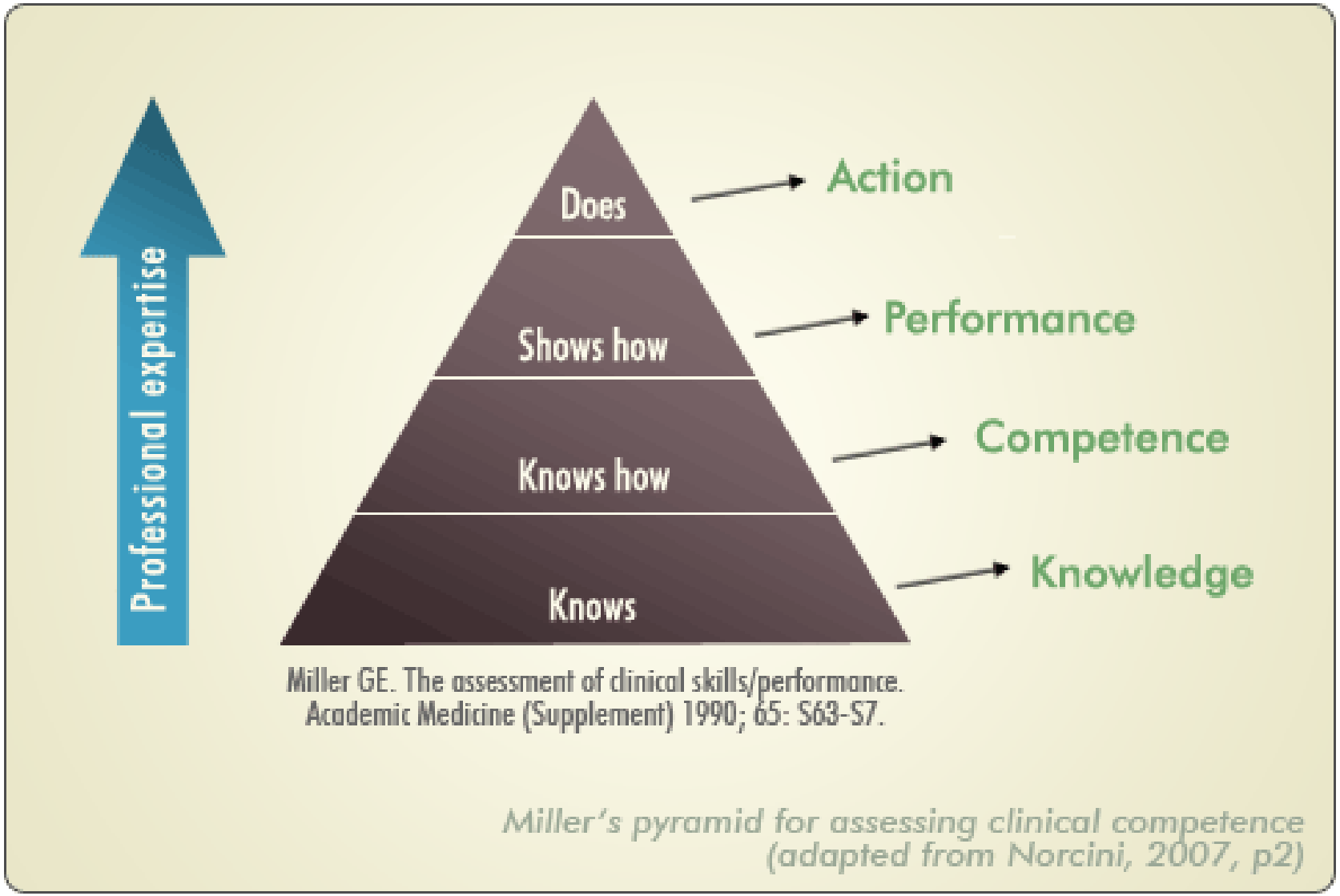
1. One assessment to be conducted at least every quarter.
2. No teacher to contribute more than a quarter (25%) of the marks for any student.
3. No single tool to contribute more than a quarter (25%) of the marks.
4. No single assessment to contribute more than a quarter (25%) of the total marks.

Theory (Max. marks 50)	
Knowledge tests: using multiple tools*	40
Preparation, participation, regularity, sincerity	8
Other academic activities: quiz, seminar etc.	2

Practical/clinical (Max. marks 50)	
Practical and clinical skills (including communication skills, bedside manners): using multiple tools*	35
Regularity, sincerity, professionalism, presentation	8
Log books	5
ICMR or other projects, community work, etc.	2

Clarify these terms?

- Competence
- Performance

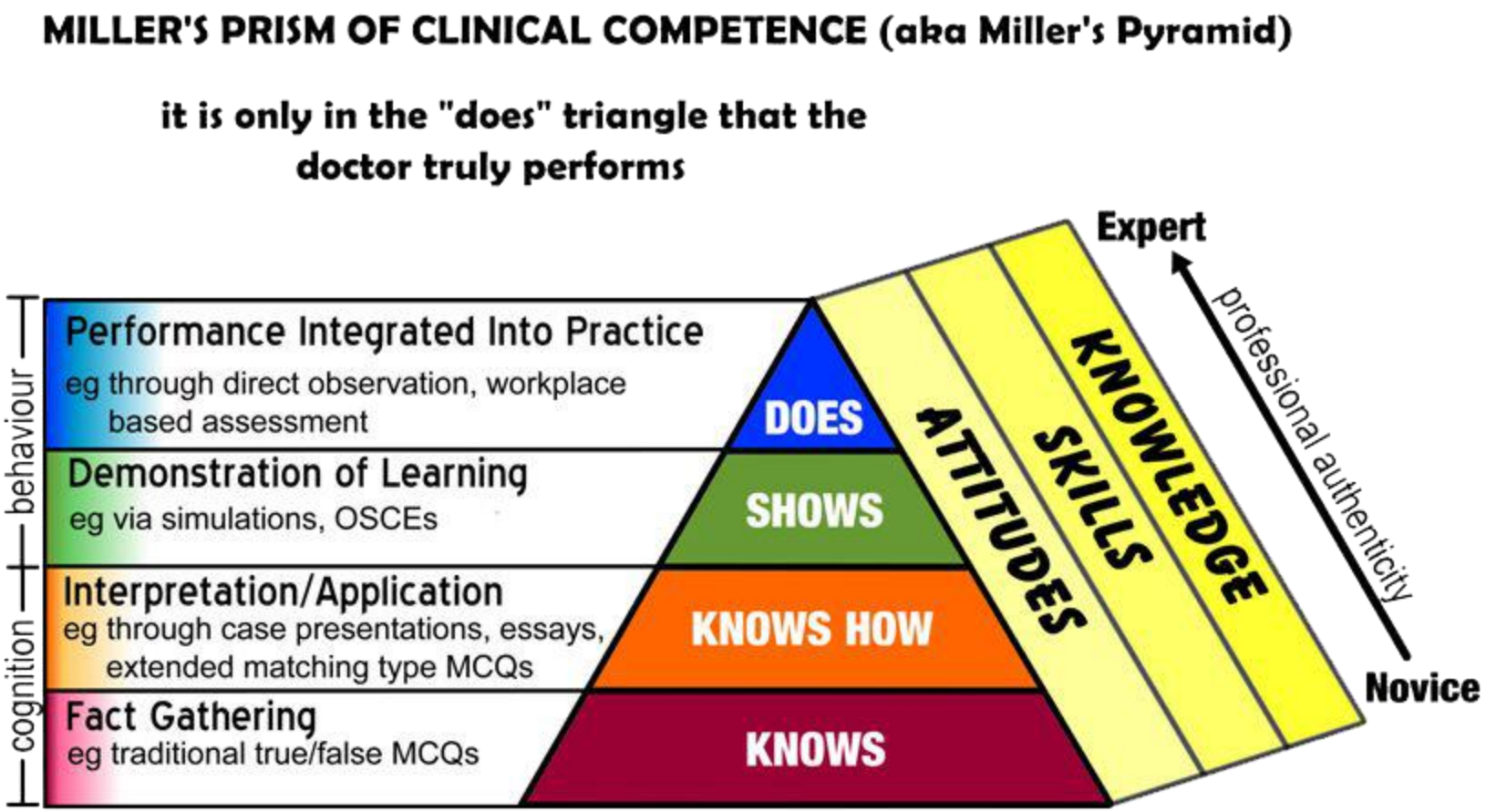


Miller's pyramid for assessing clinical competence (adapted from Norcini, 2007, p2)

Competence vs Performance

- Competence = Capability
- Miller's level II – *Knows how* – Competence
- Miller's level III – *Shows how* – Competency and Performance
- Competence is pre-requisite for performance in real setting
- Performance = Competence x Individual influence x External influence

Miller's Pyramid for Assessment



Based on work by Miller GE, The Assessment of Clinical Skills/Competence/Performance; Acad. Med. 1990; 65(9); 63-67
Adapted by Drs. R. Mehay & R. Burns, UK (Jan 2009)

Attributes of good assessment?

- Discuss in groups
- Think, Pair, Share

Attributes of good assessment?

- Validity
- Reliability
- Acceptability
- Feasibility
- Educational Impact

- Utility = V x R x A x F x EI


CLASS, ALL YEAR LONG, I'VE TAUGHT EACH OF YOU TO LEARN AT YOUR OWN PACE IN YOUR OWN PERSONAL STYLE.
©2005 United Feature Syndicate, Inc.
I'VE SET GOALS FOR EACH OF YOU, INDIVIDUALLY, TO HELP YOU REACH YOUR OWN UNIQUE POTENTIAL. AND NOW THE RESULTS OF THAT WILL BE MEASURED.
5-19
WITH A STANDARDIZED TEST.
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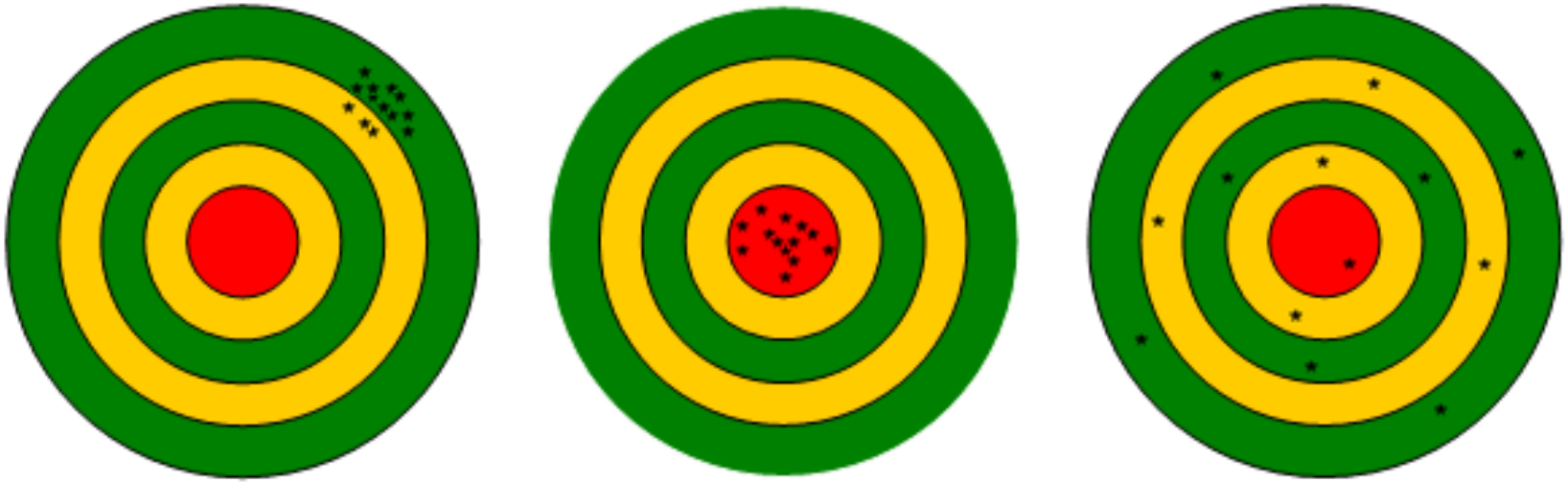
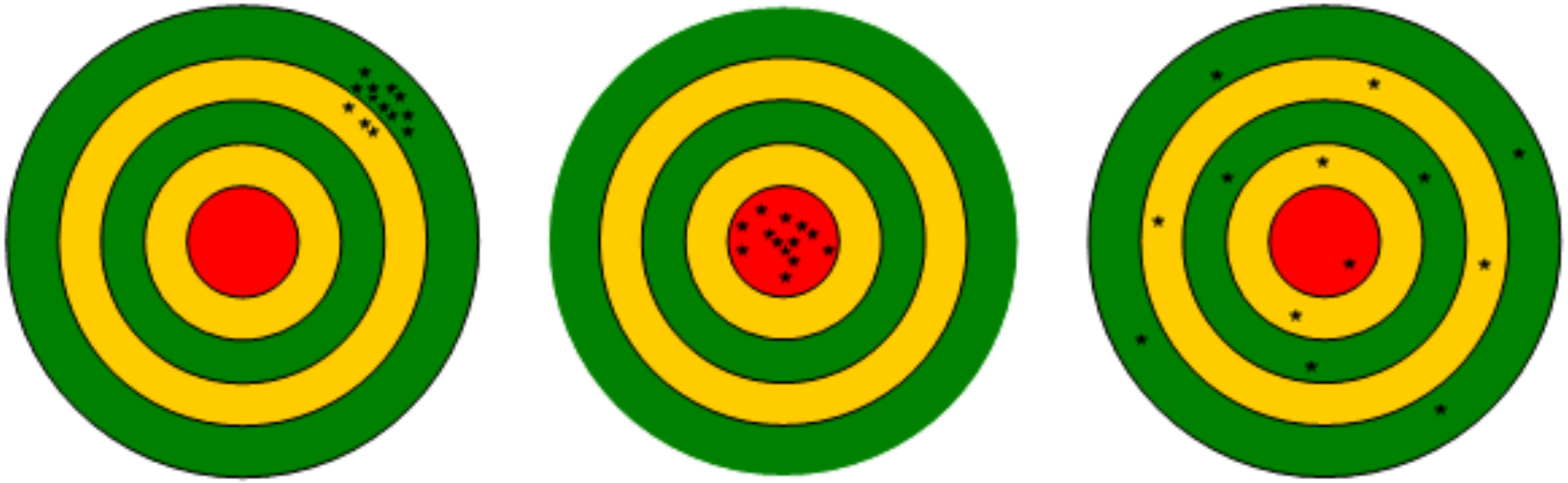




Consistent but not accurate

⇩

Reliable but not valid

Consistent and accurate

⇩

Reliable and valid

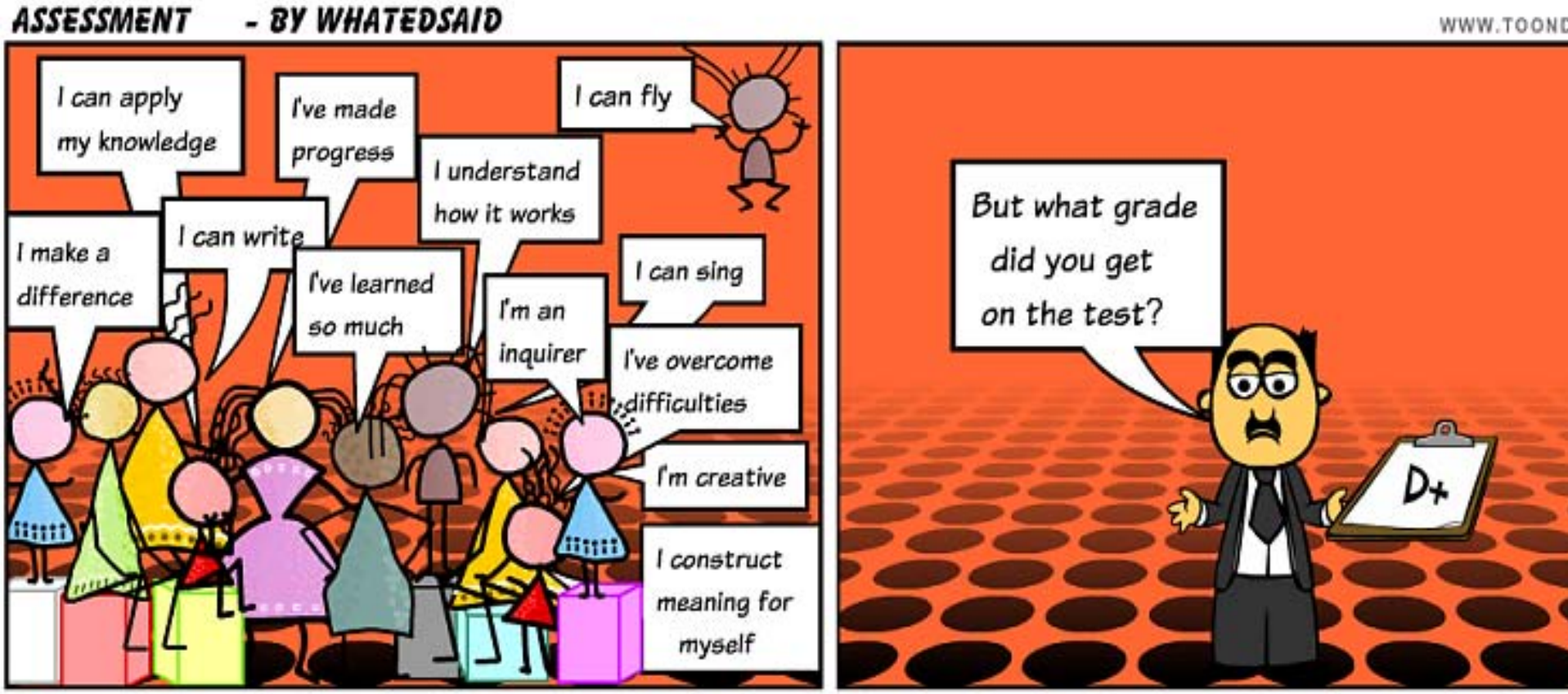
Neither consistent nor accurate

⇩

Neither reliable nor valid

VALIDITY

- Measuring what it intends to measure
- Assessing intelligence of a person by looking at his foot size.



RELIABILITY

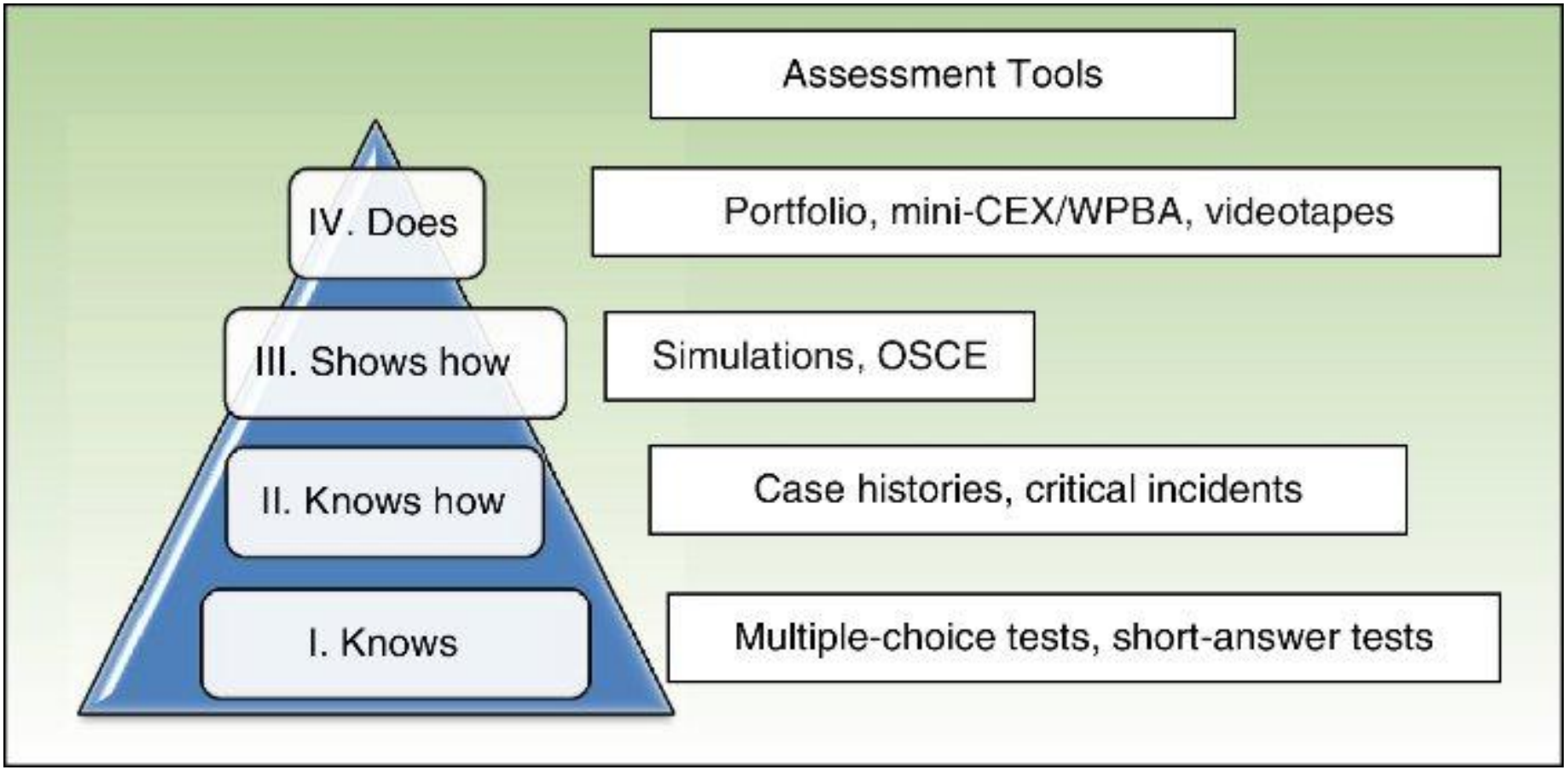
- Refers to the consistency/reproducibility of an assessment.
- One which consistently achieves the same results within the same subjects under identical conditions.
- IQ test of intelligence should give similar results irrespective of confounding factors (tiredness, nervousness).

The degree of confidence that we can place in our results

Rely-ability

Pitfalls of conventional evaluation

- Reliability
  marred by patient, examiner and student variables
- Validity
  does not measure the process, only the end result
- Acceptability and Feasibility
  average
- Educational impact ??


Assessment Tools
IV. Does
Portfolio, mini-CEX/WPBA, videotapes
III. Shows how
Simulations, OSCE
II. Knows how
Case histories, critical incidents
I. Knows
Multiple-choice tests, short-answer tests

Mini Clinical Evaluation Ecercise

- A Mini-CEX involves a trainee being directly observed by an assessor whilst performing a focussed clinical task during a specific patient encounter.
- The assessor rates and provides structured feedback on the trainee's performance in this specific instance.
- A Mini-CEX is expected to comprise 10-15 minutes of observation and 5-10 minutes of feedback.

Evaluator: _____ Date: _____

Fellow: _____ ○ 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 | 4 5 6 | 7 8 9

Unsatisfactory | Satisfactory | Superior

2. Physical examination skills (○ Not observed)

1 2 3 | 4 5 6 | 7 8 9

Unsatisfactory | Satisfactory | Superior

3. Humanistic qualities/professionalism

1 2 3 | 4 5 6 | 7 8 9

Unsatisfactory | Satisfactory | Superior

4. Clinical judgment (○ Not observed)

1 2 3 | 4 5 6 | 7 8 9

Unsatisfactory | Satisfactory | Superior

5. Counseling skills (○ Not observed)

1 2 3 | 4 5 6 | 7 8 9

Unsatisfactory | Satisfactory | Superior

6. Organization/efficiency (○ Not observed)

1 2 3 | 4 5 6 | 7 8 9

Unsatisfactory | Satisfactory | Superior

Overall clinical competence (○ Not observed)

1 2 3 | 4 5 6 | 7 8 9

Unsatisfactory | Satisfactory | Superior

Mini-CEX time: Observing: _____ Min Providing feedback: _____ Min

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

OBJECTIVE STRUCTURED LONG EXAMINATION RECORD (OSLER)

DATE :

CANDIDATE'S NAME : EXAMINATION NO. :

Examiners are required to GRADE each of the ten items below and assign an overall GRADE and MARK concerning the candidate prior to discussion with their co-examiner as follows :

EXAMINER .....

CO-EXAMINER .....

GRADES		MARKS	
P+ =	VERY GOOD/EXCELLENT	(60-80+)	See next page for specific mark details
P =	PASS/BORDERLINE PASS	(50-55)	
P– =	BELOW PASS	(35-45)	

	GRADE	AGREED GRADE
PRESENTATION OF HISTORY		
PACE/CLARITY		
COMMUNICATION PROCESS : ..... (history, e.g., CVS; investigation, e.g., endoscopy; management, e.g., patient education).		
SYSTEMATIC PRESENTATION		
CORRECT FACTS ESTABLISHED		
PHYSICAL EXAMINATION		
SYSTEMATIC		
TECHNIQUE ..... (including attitude towards patient)		
CORRECT FINDINGS ESTABLISHED		
APPROPRIATE INVESTIGATIONS IN A LOGICAL SEQUENCE ..... (Communication Process option)		
APPROPRIATE MANAGEMENT ..... (Communication Process option)		
CLINICAL ACUMEN ..... (Problem identification/Problem-solving ability		

OSLER

ADDITIONAL COMMENTS :

Please Tick (✓) For CASE DIFFICULTY

	Individual Examiner	Agreed Case Difficulty
Standard		
Difficult		
Very Difficult		

INDIVIDUAL EXAMINER

OVERALL GRADE	MARK

PAIR OF EXAMINERS

AGREED GRADE	AGREED MARK

Fig. 1 : The OSLER.

Adapted from: *Med Teacher 1997; 19: 7-14.*

Effective Evaluation of Educational Programs

Do not confuse evaluation with assessment

- Evaluation focuses on programs
- Assessment focuses on learners

Effective Evaluation of Educational Programs

- Evaluation's Purpose

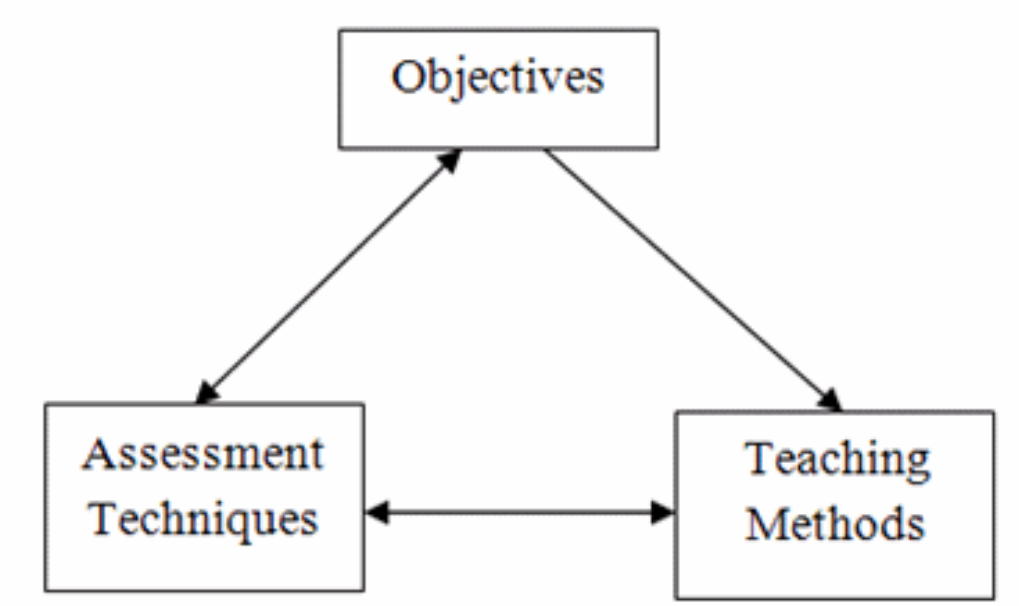
- Determine the merit or worth of a program

- Key Questions

- 1.Whose opinion matters?
- 2.What would really be meaningful to them?

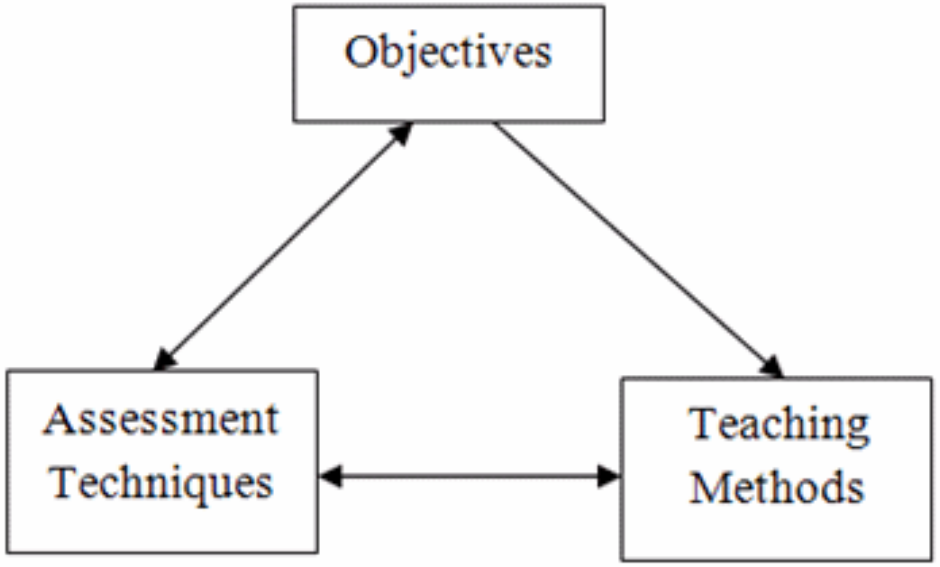
Evaluation approaches

- Objectives-oriented
- Process-oriented



Evaluation approaches

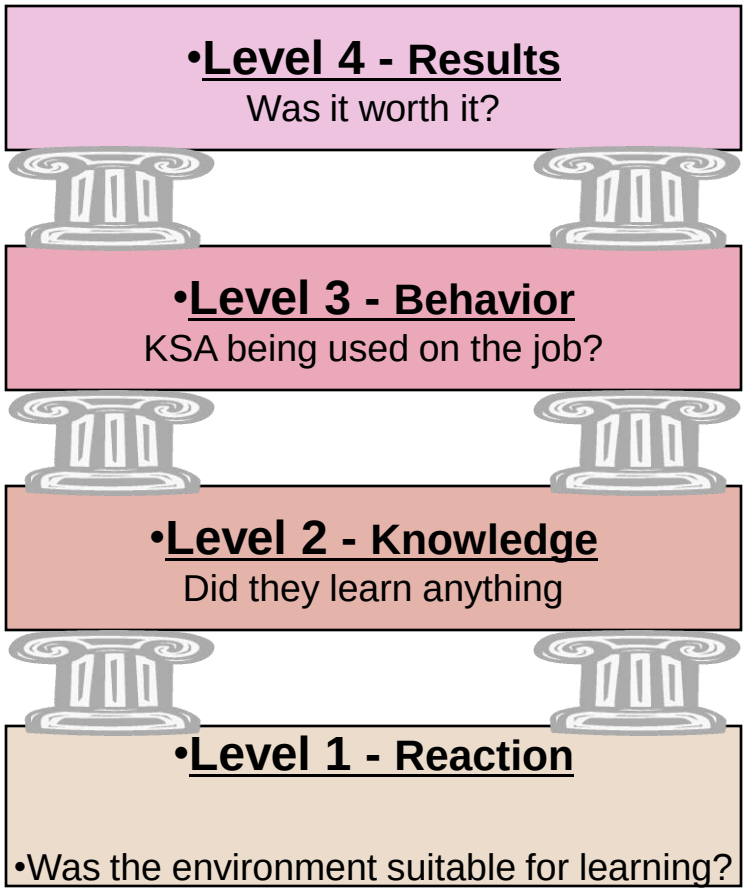
- Outcomes (Kirkpatrick's model)
- Measurement method
- Instrument
- Modality



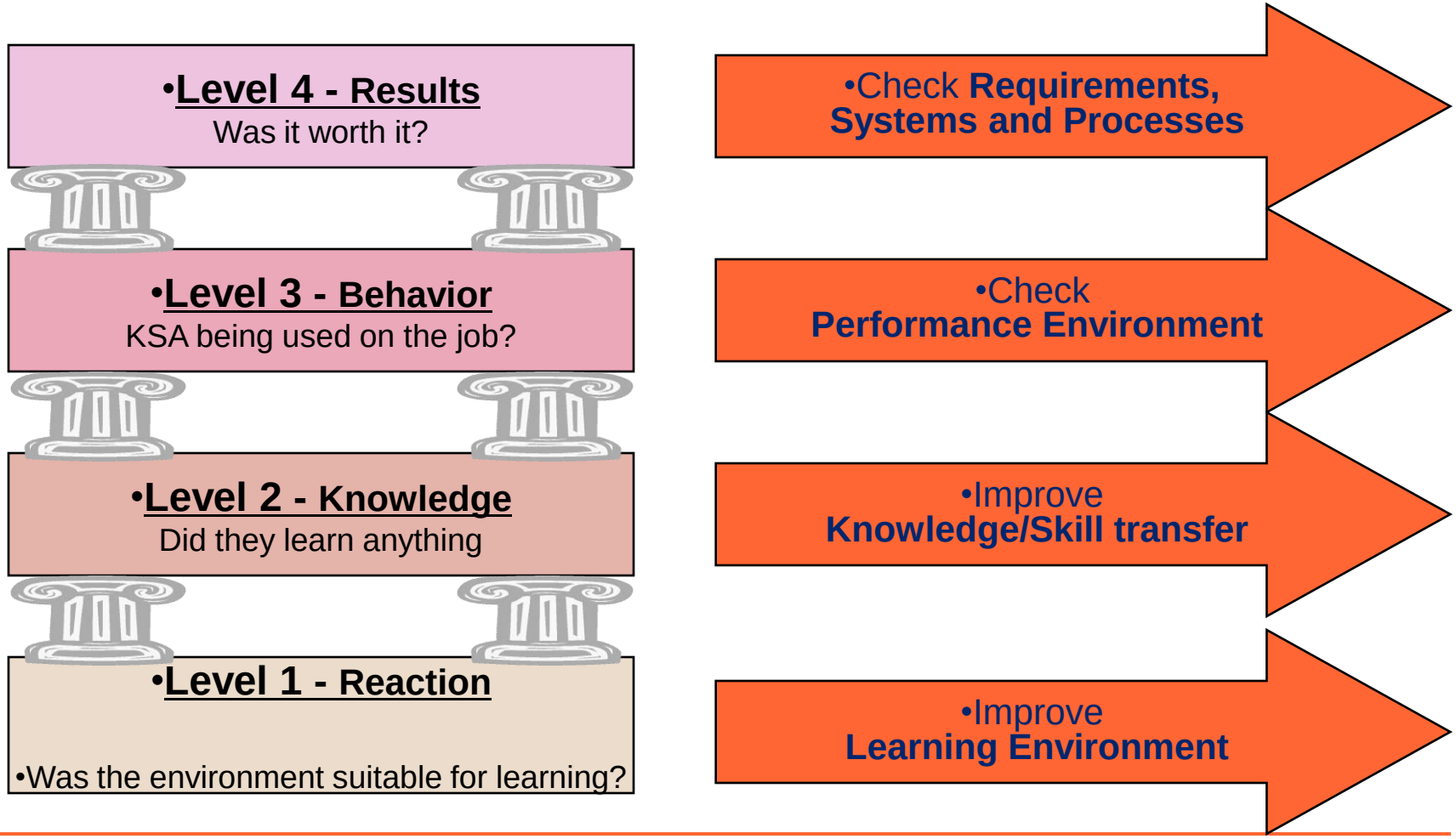
Kirkpatrick's Model

- Level I: Evaluate ***Reaction***
- Level II: Evaluate ***Learning***
- Level III: Evaluate ***Behavior***
- Level IV: Evaluate ***Results***

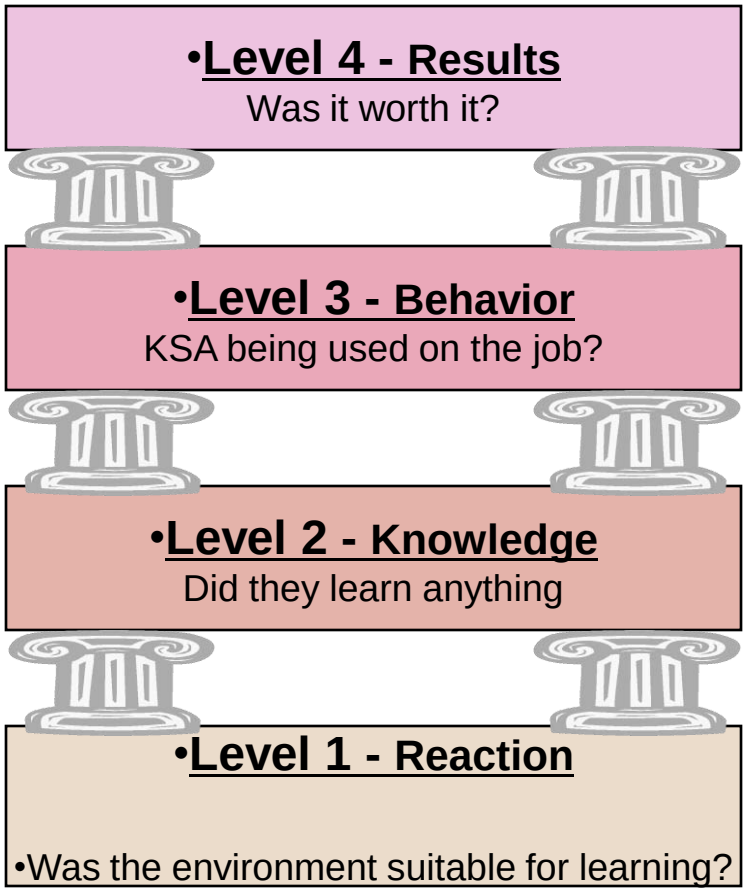
Relationship Between Levels



Only by assessing each level can we yield actionable results

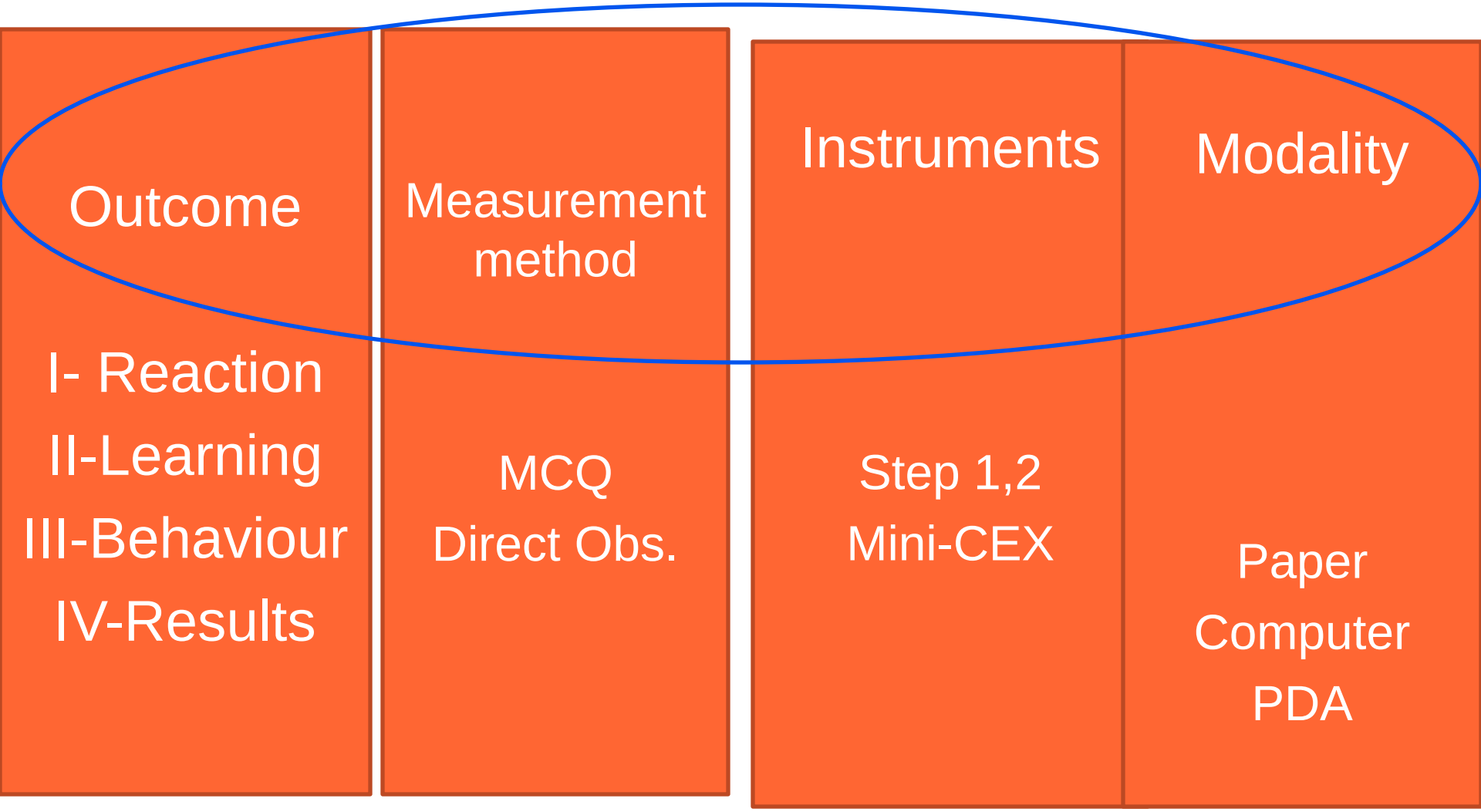


Types of Assessments Used at Each Level

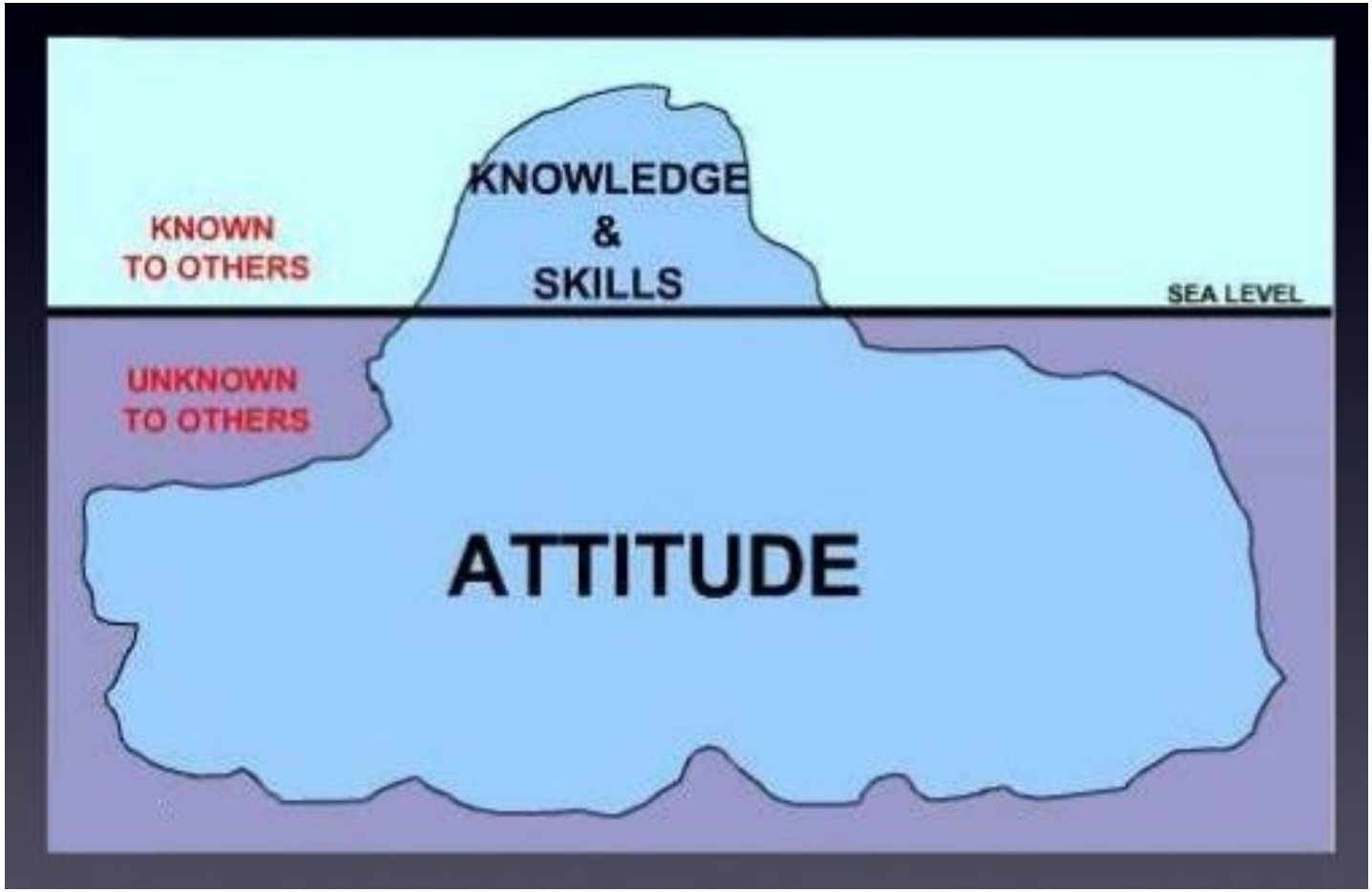


Type	Form
Summative	Correlation of business results with other assessment results
Summative	Observation of Performance 360° Survey
Diagnostic Summative	Self-assessment Test
Reaction Formative	Survey Real-time Polling Quizzing

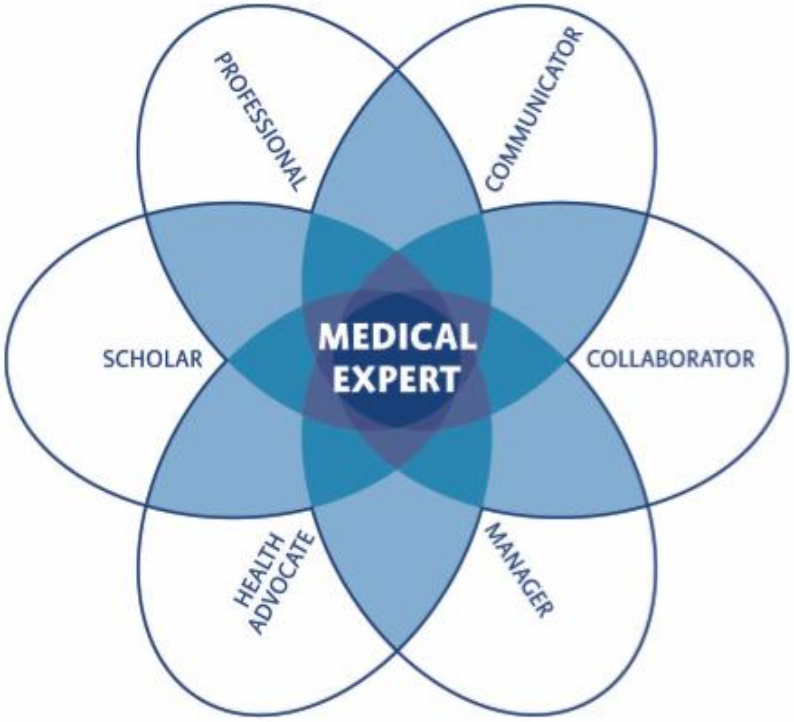
Evaluation approaches



Assessment of	Outcomes Learning Objectives	Tasks	Method to be used	Setting the Paper
Pediatrics (Neonatology)				
Competency (Neonatal Resuscitation	-identify the instruments -list the indications of their use -decide the need and level of resuscitation according to circumstances -perform bag and mask ventilation	Practical Theory (Recall) Practical (Application) Practical (Psychomotor)	Viva MCQ/SAQ OSCE (Application) OSCE (Simulator)	


KNOWLEDGE
&
SKILLS
KNOWN
TO OTHERS
SEA LEVEL
UNKNOWN
TO OTHERS
ATTITUDE

Competencies



THE CANMEDS ROLES FRAMEWORK

ACGME

Accreditation Council for Graduate Medical Education

TABLE: Core Clinical Competencies
Patient care
Medical knowledge
Practice-based learning and improvement
Interpersonal and communication skills
Professionalism
Systems-based practice

MCI Vision 2015

1. Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

2. Leader and member of the health care team and system with capabilities to collect, analyze and synthesize health data.

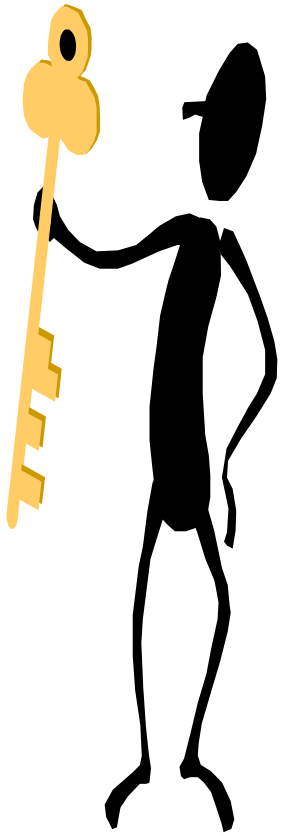
3. Communicator with patients, families, colleagues and community.

4. Lifelong learner committed to continuous improvement of skills and knowledge.

5. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community, and profession.

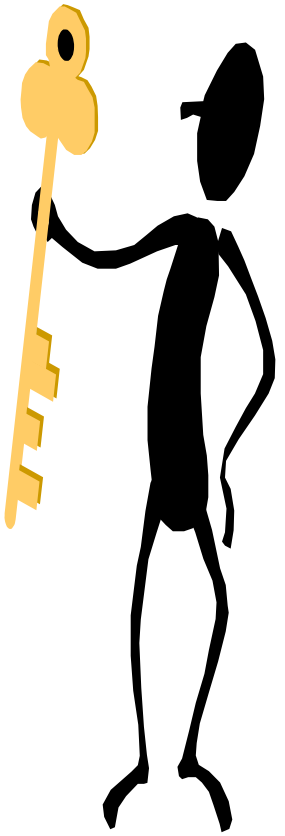
Key Message-1

The assessment should be so organized that all students are examined on identical content by the same examiners using predetermined guidelines



Key Message-2

Examination should be so organized that all competencies are tested by tools that evaluate the process in an objective manner



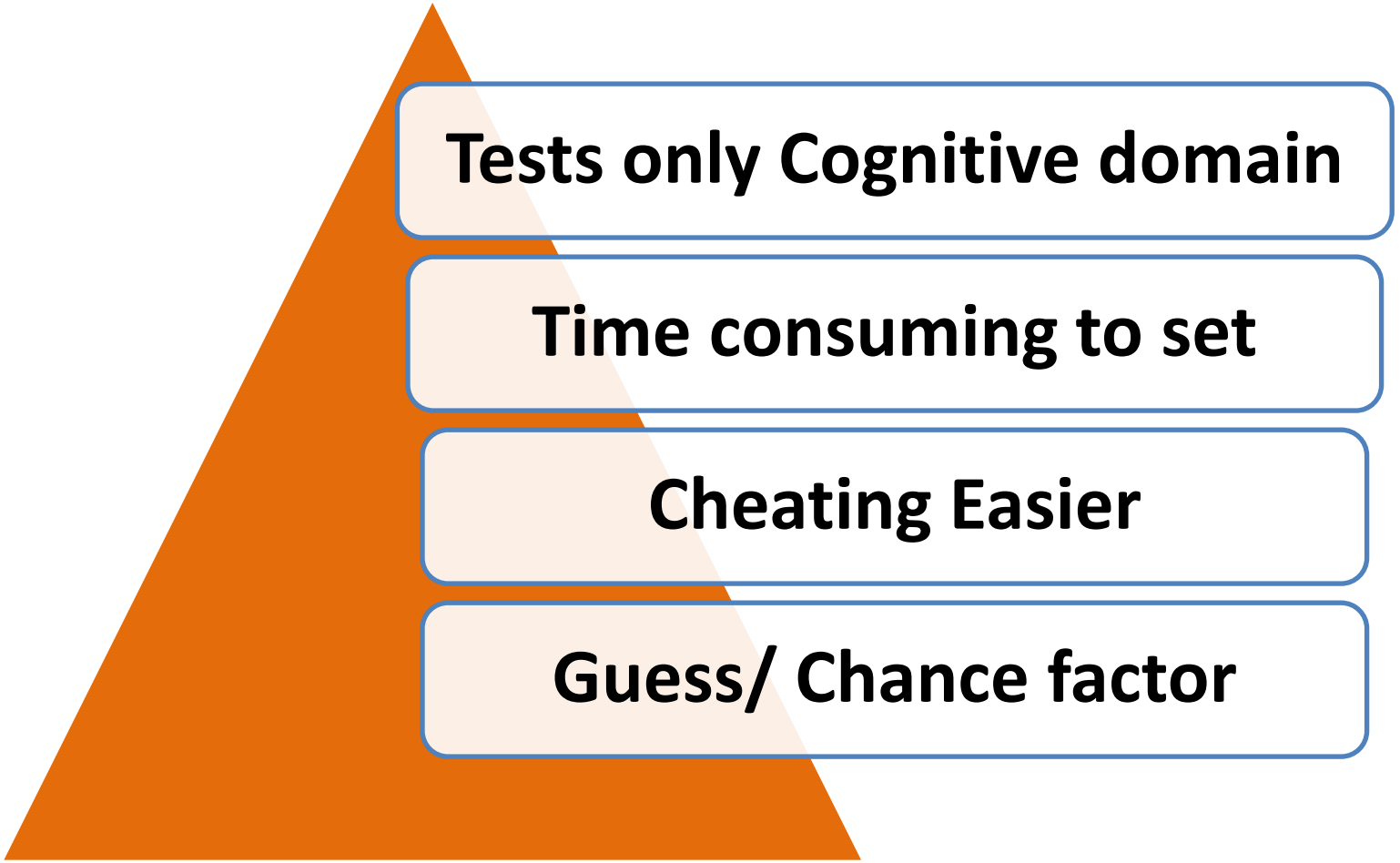
MCQ - As an Evaluation tool

Dr. Mukta Pujani,
Associate Professor,
Dept of Pathology,
HIMSR

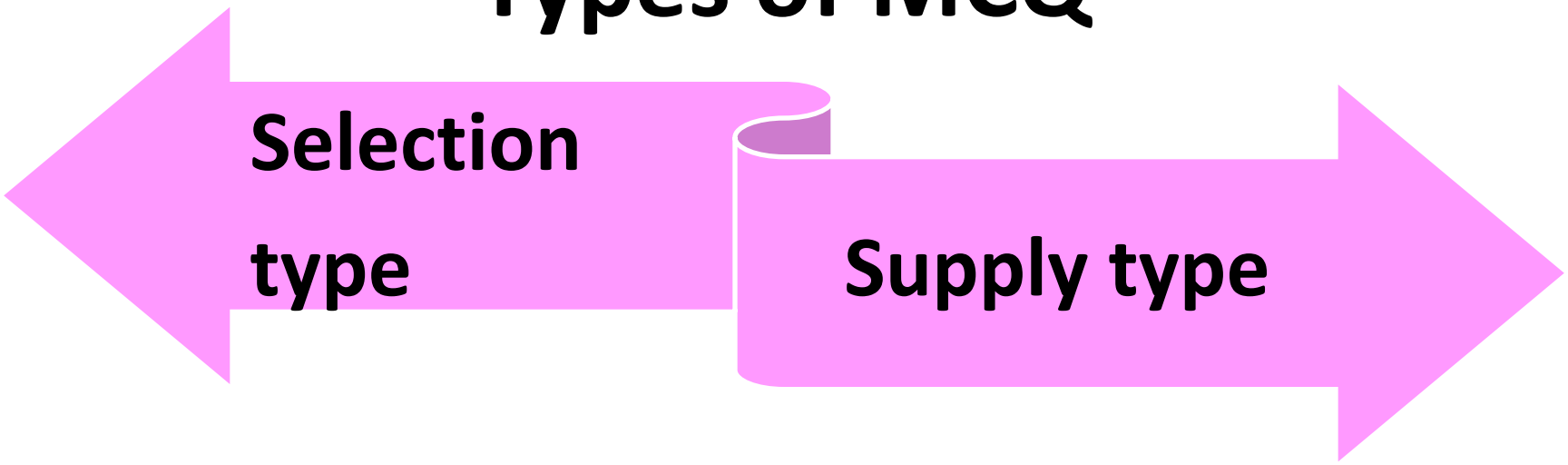
Advantages of MCQs

- Objective, Reliable, Valid
- Wider Subject Coverage
- Easy to Mark- Computerised Checking
- Question bank- for repeat usage
- Feedback easy- amenable to audit
- More scoring

Disadvantages of MCQs



Types of MCQ



Q. Scurvy is caused by the deficiency of which vitamin

a) A
b) B
c) C
d) K

Q. Scurvy is caused by the deficiency of .....

Types of MCQs- Selection type

- Single Best Response
- Multiple Response type
- Matching type
- True / False type
- Problem Based
- Reason Assertion Type

Components of an MCQ

Tick the correct answer ← DIRECTION

Q. The drug of choice for treatment of congestive cardiac failure is: ← STEM

a) Propranolol ← DISTRACTOR

b) Aminophylline ← DISTRACTOR

c) Isoptin ← DISTRACTOR

d) Digitalis ← KEY

Which is Better?

One-Best Answer

- *Acute intermittent porphyria is the result of a defect in the biosynthetic pathway for:*
  - *A. collagen*
  - *B. corticosteroid*
  - *C. fatty acid*
  - *D.<u>heme</u>*

Problem Based MCQ

An otherwise healthy 33 year-old man has mild weakness and occasional episodes of steady, severe abdominal pain with some cramping and no diarrhea. One aunt and a cousin have had similar episodes. During an episode, his abdomen is distended, and bowel sounds are decreased. Neurological examination shows mild weakness in the upper arms. These findings suggest a defect in the biosynthetic pathway for

A. collagen
B. corticosteroid
C. fatty acid
D. <u>heme</u>

Stems

- Use clear, straight forward language
- Aim to write as a complete sentence
- Avoid the use of negatives. If used keep in bold eg. ALL EXCEPT
- Avoid use of unnecessary content
- Avoid giving clues in the question e.g an/a

Flaws : MCQ Stems

Stem is unnecessarily complicated—too long, irrelevant

A 48-year-old woman presents to the physician with lower back pain. She states that she has had the pain for about 2 weeks and that it has become steadily more severe. An x-ray film shows a lytic bone lesion in her lumbar spine. Review of systems reveals the recent onset of mild headaches, nausea, and weakness. Her CBC shows a normocytic anemia, and her erythrocyte sedimentation rate is elevated. Urinalysis shows heavy proteinuria, and a serum protein electrophoresis shows a monoclonal peak of IgG. Which of the following is responsible for this patient's spinal lesioins?

a.Bence-Jones protein
b.lymphoplasmacytoid proliferation
c.osteoblast activating factor
d.osteoclast activating factor
e.primary amyloidosis

Flaws : MCQ Stems

Stem contains abbreviations that are not clearly understood by all examinees.

A 32yo WF in her 1st trimester of pregnancy experiences GERD 3-4x/week and c/o heartburn. She has not responded to MOM. Which medication will be best to treat this patient?

Flaws : MCQ Stems

Stem contains words about quantity that are difficult or impossible to quantify:
probably, usually, infrequently, sometimes, in most cases, in few cases, etc.

In most cases, men who develop prostate cancer usually have limited dietary intake of which of the following food groups?

Key and Distractors

- Key should clearly be Best Choice
- Distractors should be such that only lower ability students are distracted by them
- Distractors- same relative length as key
- In case of numerical values- options should be in order
- Avoid ALL THE ABOVE & NONE OF THE ABOVE

What's wrong with this MCQ?

- The treatment of bronchogenic carcinoma is:

a) Radiotherapy
b) Chemotherapy
c) Surgery
d) Immunotherapy

Key – not clearly the best choice

Different students can give different answers and yet be correct

Which is a Better MCQ ?

- **The average weight of a normal adult spleen in grams is:**

a) 20

b) 150

c) 450

d) 750

- **The average weight of a normal adult spleen in grams is:**

a) 100

b) 150

c) 200

d) 250

Is this MCQ a good one ?

- **The normal value of Hb is:**

a) **10-12**

b) **16-18**

c) **14-16**

d) **12-14**

Problems

- **Age /sex not mentioned**
- **Abbreviation**
- **No unit given**
- **Options not in order**

True/False

Two possible alternatives so fair chance of getting the right answer…

- **Some tips:**
  - use negatives sparingly.
  - Use statements which are unequivocally true or false.

- **More usually used as a basis for more complex Assertion/Reason questions**

Assertion Reason (ARQs)

- **Test application/analysis**

  - Reason should be an independent sentence

  - Avoid using minor reasons. These can result in an ambiguous question.

Example of assertion reason

Assertion

High speed is a factor in car accidents

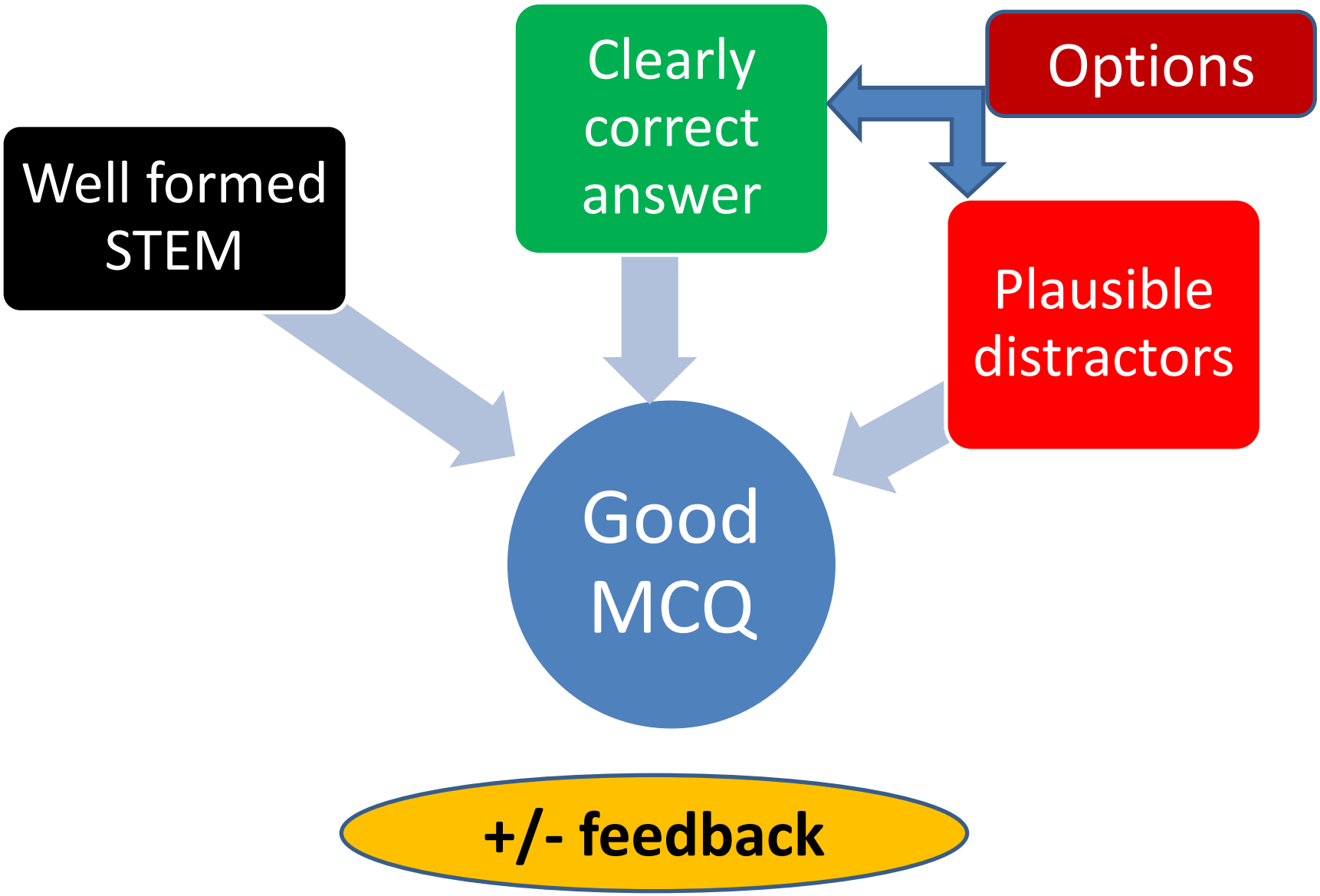
BECAUSE

Reason

Most modern cars can reach speeds in excess of 100mph

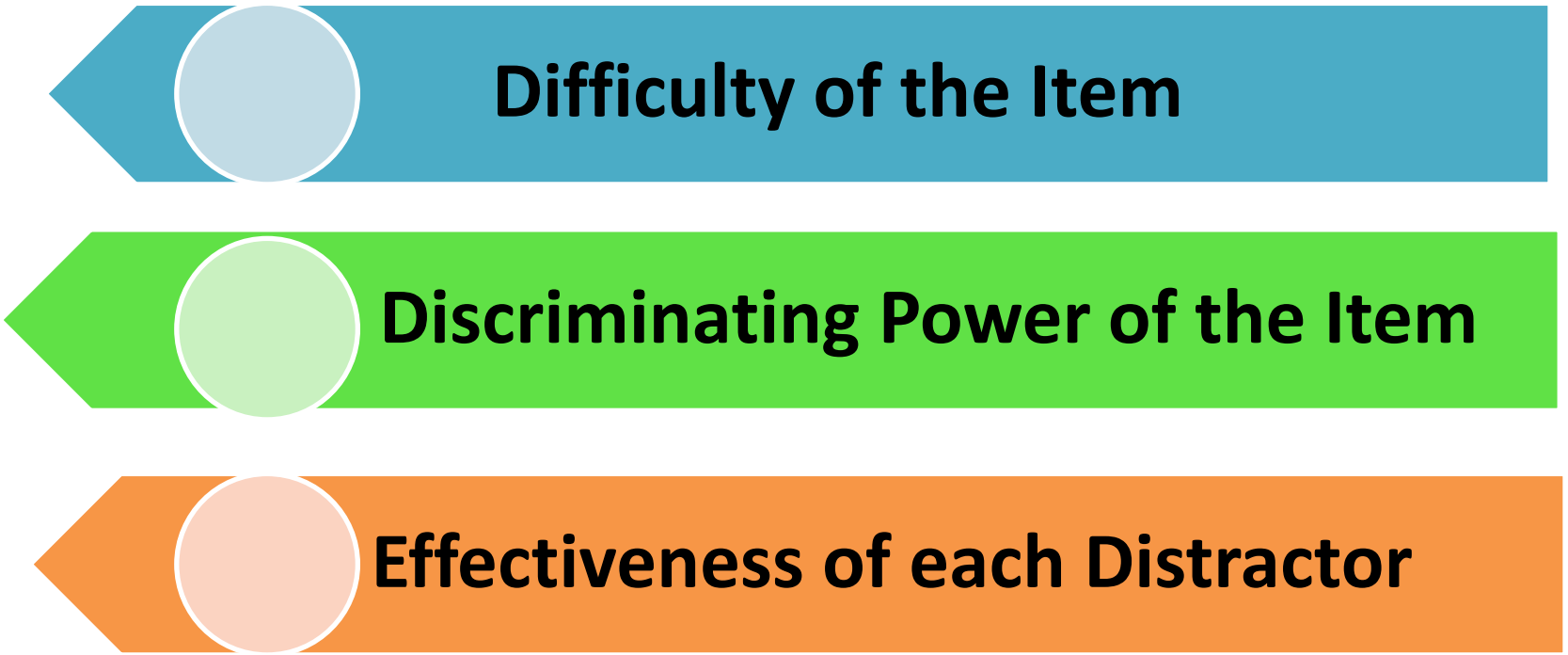
A	True/True *Reason* is correct explanation
B	True/True *Reason* Is NOT a correct explanation
C	True/False
D	False/True
E	False/False

Components of a GOOD MCQ



ITEM ANALYSIS

- Evaluation of Effectiveness of items (MCQ s)
- Done after test has been administered and scored
- Item Analysis involves Judging:



Procedure: Item Analysis

- Eg- 30 students appeared for an MCQ exam
- Arrange the papers in order (highest marks to Lowest marks)
- Select 1/3 with high scores (10 in no)- **Upper gp**
- Select 1/3 with low scores (10 in no)- **Lower gp**
- For each MCQ, prepare a frequency table by counting the no of students in the upper gp who selected each option
- Repeat same for lower gp

For Each MCQ

Alternatives	No. of Responses	
	Upper group	Lower group
A		
B		
C		
D		
No Response		

Total Responses (T)

Encircle the correct answer for each MCQ

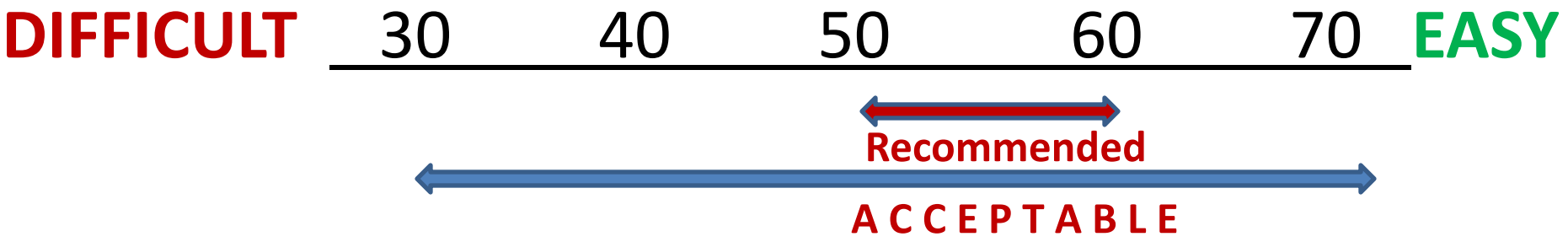
DIFFICULTY INDEX OF MCQ

$$\frac{H + L}{T} \quad X100$$

H= No. of correct responses in upper gp

L= No. of correct responses in Lower gp

T= Total no. of responses in both gps



DISCRIMINATION INDEX of MCQ

$$2 \times \frac{H - L}{T}$$

0	+0.15	+0.25	+0.35
DISCARD	REVISE	GOOD	EXCELLENT

Distractor Effectiveness

- **Calculated for each distractor**

- $\frac{\text{Sum of responses in the two gps}}{T} \times 100$

Distractor of 5% or above- Acceptable

Checklist for constructing a Good MCQ

Select a learning objective to be tested

Write a stem (a question to be solved)

Write Key. Crosscheck its Correctness

Select plausible alternatives keeping in mind the common mistakes made by students

Get MCQs Reviewed by Colleagues


Thank you

OSCE

Dr Amit Sharma
Associate Professor
Forensic Medicine, HIMSR

- **O**bjective
- **S**tructured
- **C**linical
- **E**xamination

OSCE - Objective

- All the candidates are presented with the same test
- Specific skill modalities are tested at each station
  - History taking
  - Explanation
  - Clinical examination
  - Procedures

OSCE - Structured

- The marking scheme for each station is structured
- Structured interaction between examiner and student

OSCE – Clinical Examination

- Test of performance of clinical skills
  - candidates have to demonstrate their skills, not just describe the theory

History of OSCE

OSCE was developed in Dundee , Scotland in the early 1970's by Dr.Harden and colleagues.

- The OSCE is now used in over 50 country world-wide.

OSCE is a kind of exam not a test.

- OSCE
  - Objective Structural Clinical Examination
- OSLER
  - Objective structural Long Examination Record
- OSPE
  - Objective Structural Practical Examination
- TOSCE (GOSCE)
  - Team (group) Objective Structural Clinical Examination

Advantage

- Provides a opportunity to test a student's ability to integrate knowledge, clinical skills, and communication with the patient
- Provides the faculty with an assessment tool that is custom-fit to the goals of a specific education program
- Renders an occasion for individualized instruction and feedback
- Offers an additional parameter by which to evaluate student performance

Disadvantage

- *Development and administration are time consuming and costly.*
- *Offers opportunity for compromised test security*
- *Provides assessment of case-specific skills, knowledge, and/or attitudes*

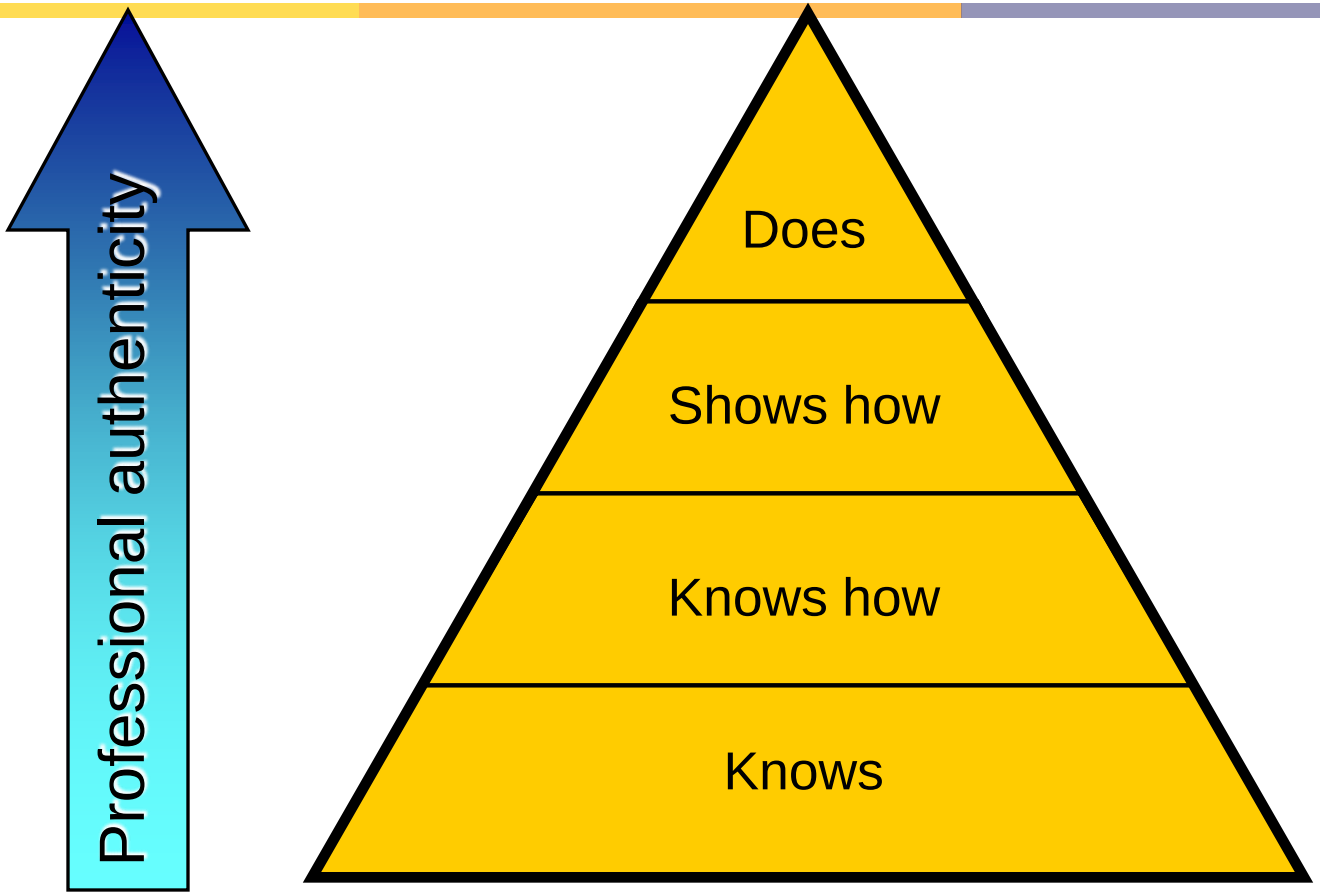
What is the purpose of the OSCE?

- Provide feedback on performance
- Evaluate basic clinical skill
- Measure minimal competency

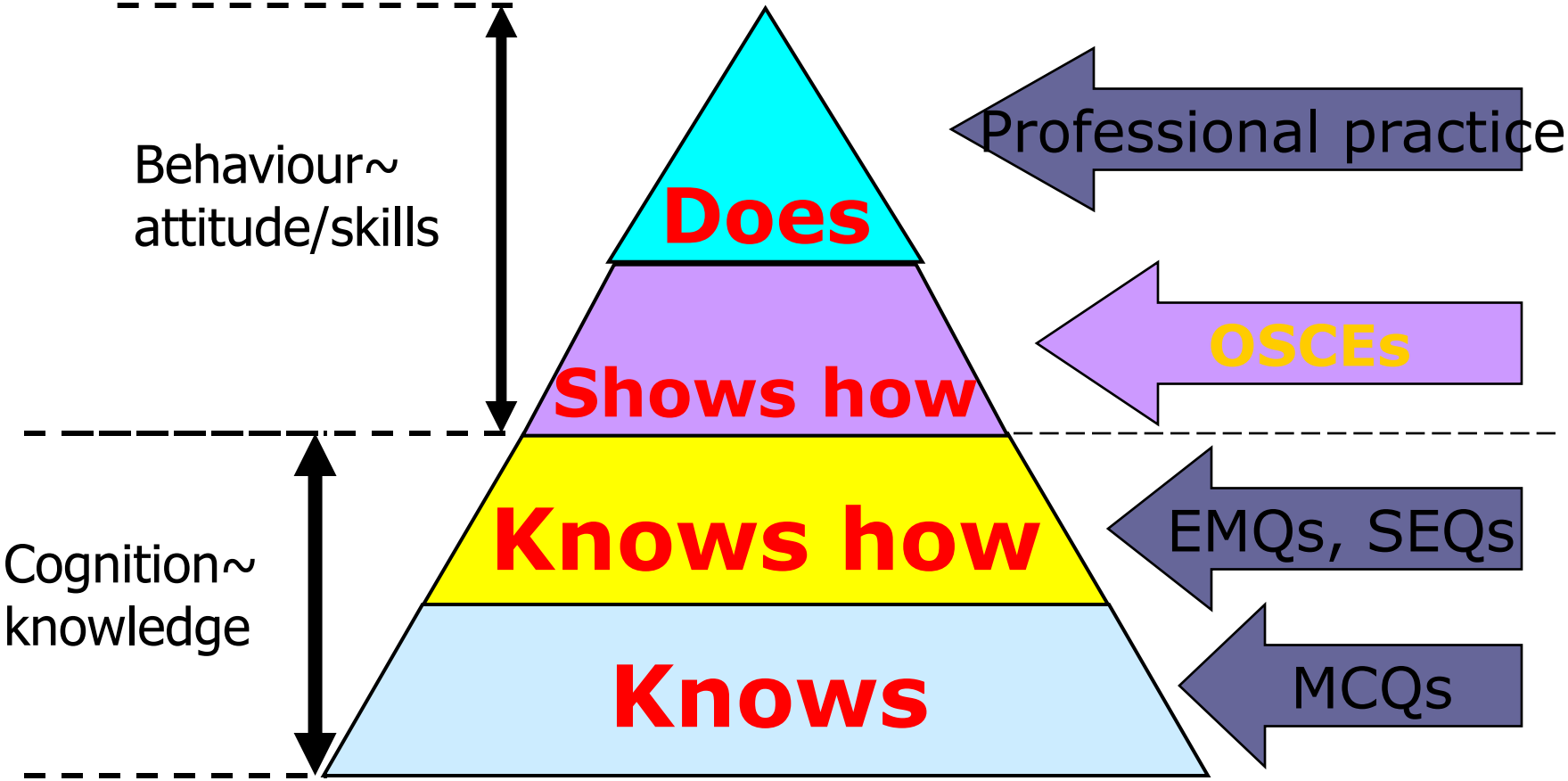
OSCE

- Format
- Purpose
- Advantages
- Writing principles
- Training observers
- Scoring considerations

Simple model of competence



Testing formats



OSCE

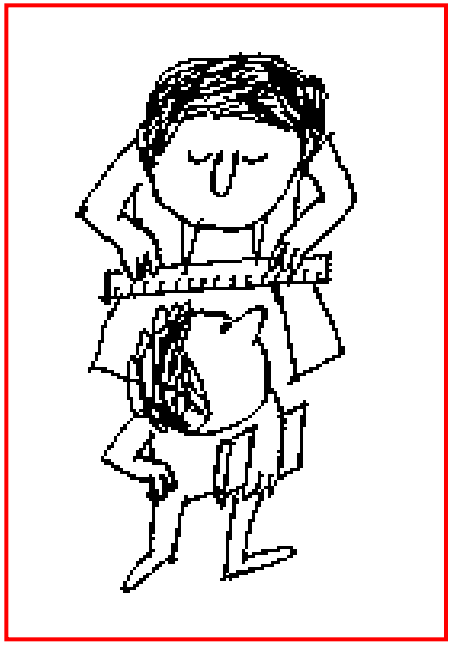
- Format
- **Purpose**
- Advantages
- Writing principles
- Training observers
- Scoring considerations

Characteristics of assessment instruments

- Utility =
  - Reliability
  - Validity
  - Educational impact
  - Acceptability
  - Feasibility

Test characteristics

- Reliability of a test / measure
  - reproducibility of scores across raters, questions, cases, occasions
  - capability to differentiate consistently between good & poor students



Advantages of using OSCEs in clinical assessment

- Careful specification of content = Validity
- Observation of wider sample of activities = Reliability
- Structured interaction between examiner & student
- Structured marking schedule
- Each student has to perform the same tasks = Acceptability

Factor leading to lower reliability

- Too few station or too little testing time
- Checklists or items that don't discriminate (too easy OR too hard)
- Unreliable patient or inconsistent portraits by standard patient
- Examiners who score idiosyncratically
- Administrative problem (disorganized staff OR noisy room)

OSCE

- Format
- Purpose
- Advantages
- **Writing principles**
- Training observers
- Scoring considerations

OSCE Station Writing

How to start

- Decide what tasks you
  - want to
  - can
  - should

  test in an OSCE format

- OSCEs test performance, not knowledge

Constructive alignment

- Need to know the learning objectives of your course / programme
- Map these across :
  - Subject areas
  - Knowledge areas
  - Skill areas

Key features of success in designing OSCEs

- Feasibility
- Congruence

Feasibility

- Is it a reasonable task to expect the candidates to perform?
- Can the task be examined at an OSCE station?
- Can the task be performed in the time allowed?

Congruence

- Is it testing what you want it to test?
- Station construct: describe what station is testing

Congruence

- Ensure that all parts of station coordinate
  - Candidate instructions
  - Marking schedule
  - Examiner instructions
  - Simulated patient instructions
  - Equipment

Station construct

- This station tests the candidates ability to ……

Number of Stations

- The number of stations in an examination refer the time allocated for each station determines the time required to complete the whole examination.
- Twenty stations each of five minutes can be completed in I hour 40 mins
- While 20 stations each of 10 minutes require 3 hrs 20 mins to complete

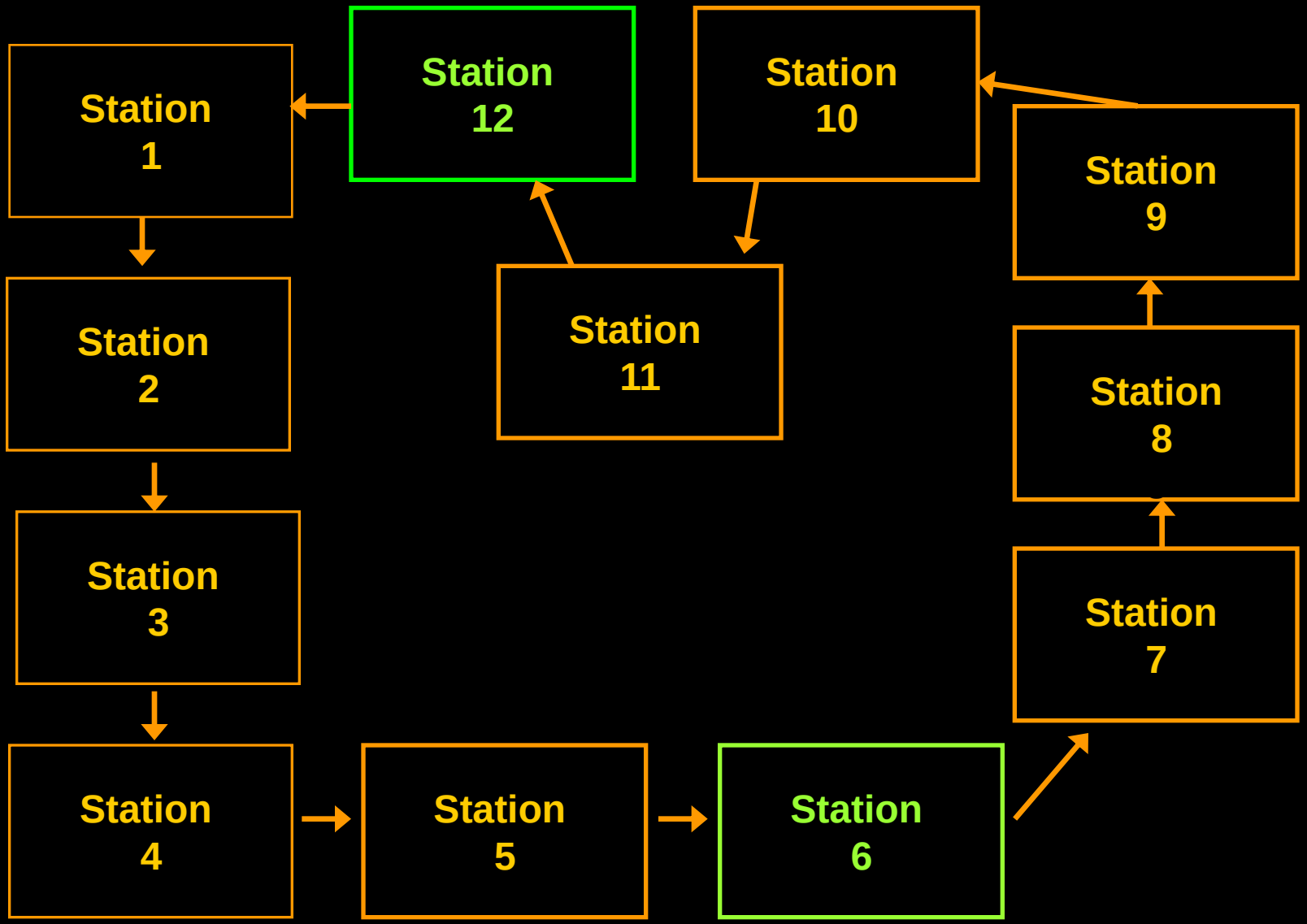
Duration of station

- Times ranging from 4 to 15 minutes have been reported in different examinations and a **five minute** station probably most frequently chosen.
- This times depend to some extent on the **competencies** to be **assessed** in the examination.

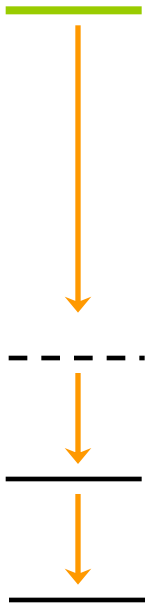
Couplet Station

Some competencies may best be assessed by coupled or linked stations.

- The use of linked stations extends the time available to complete a task.



Example of 10 station OSCE accommodating 12 students



Enter in to station

8 min

End of student interaction with SP

2 min

Exit station

1 min

Enter new examinee

Signaling station change

Candidate instructions

- State circumstances: e.g. outpatient clinic, ward, A & E, etc.
- Specify the task required of the candidate: e.g. take a history, perform a neurological examination of the legs, explain a diagnosis
- Specify tasks NOT required

Examiner instructions

- Copy of candidate instructions
- Specific instructions appropriate to the task:
  - e.g., do not prompt, managing equipment, etc

Simulated patient instructions

- Give as much detail as possible so they can be consistent
  - try to leave as little as possible for them to ad lib!
- Give enough information to enable them to answer questions consistently
- Be specific about affect in each role
- Specify patient demographics
  - i.e., gender, age, ethnicity, social class, etc.

Marking schedule

- Ensure marks are allocated for tasks the candidates are asked to perform
- Decide relative importance of diagnosis vs process (history taking, examination)
- Separate checklist for process skills

Equipment

- Be detailed
- Think of
  - Chairs + table / couch / bench
  - Manikins - specify
  - Medical equipment
    - Stethoscope, ophthalmoscope, sphyg, suturing materials, etc

Designing stations

- Use your blueprint
- Be clear what you are testing: define the construct
- Check for congruence
- Pilot for feasibility

OSCE

- Format
- Purpose
- Advantages
- Writing principles
- **Training observers**
- Scoring considerations

Training observers

- Understand the principles of OSCEs
- Enhance inter-rater consistency

Techniques

- Examiners must train together
  - Videos
  - ‘live’ stations
- Discussion of marking inconsistencies

Training observers

- General training
- Station-specific training

OSCE

- Format
- Purpose
- Advantages
- Writing principles
- Training observers
- **Scoring considerations**

Scoring considerations

- Global vs checklist scoring
- Weighting

Checklist scoring

- **Advantages**
  - Helps examiner know what the station setters are looking for
  - Helps the examiner be objective
  - Facilities the use of non-expert examiners
- **Disadvantages**
  - Can just reward process/thoroughness
  - May not sufficiently reward the excellent candidate
  - Ignores the examiners expertise

Check list for assessment of a physical finding

- Mr.C. presents with a sore swollen ankle for 6 weeks

	Don't	Do
1-introduces self to patient 2-Explain to the patient what will be do 3-Demonstrate concern for patient.i.e.is not excessive rough 4-Inspectin for any of swelling , erythema ,deformity 5-Inspection: Standing From anterior Posterior 6- Inspection pt Gait 7- palpation		

Sample Communication skills checklist (rating scale)

	Poor 1	Fair 2	Good 3	V Good 4	Excellence 5
1- Interpersonal skill: **Listen carefully**					
2-Interviwing skill: **Uses words patient can understand** **Organized**					

Global scoring

- **Advantages**
  - Utilises the expertise of the examiners
  - They are in a position to make a (global) judgement about the performance
- **Disadvantages**
  - Examiners have to be expert examiners **i.e. trained**
  - Examiners must be familiar with expected standards for the level of the test

Weighting

- In a checklist, some items may be weighted more than others
- More complicated scoring system

Some Tips !

- Have spare standardized patients and examiners available for the exam as life is unpredictable.
- Have back-up equipment ,such as view box ,batteries
- Have staff available during the examination to maintain exam security
- Make sure the bells or buzzers can be heard from all location with closed door
- For each examination prepare an extra station which can be setup with minimal effort

OSPE & OSCE Similarities

- Structured
- Multiple station delivery
- Variety of skills and tasks
- Observers used
- All candidates take same test
- Scoring considerations

Advantages over Practical Exam

- Better coverage
- Less duplicated equipment
- Less preparation for each task
- Reduced cost
- Supervision easier

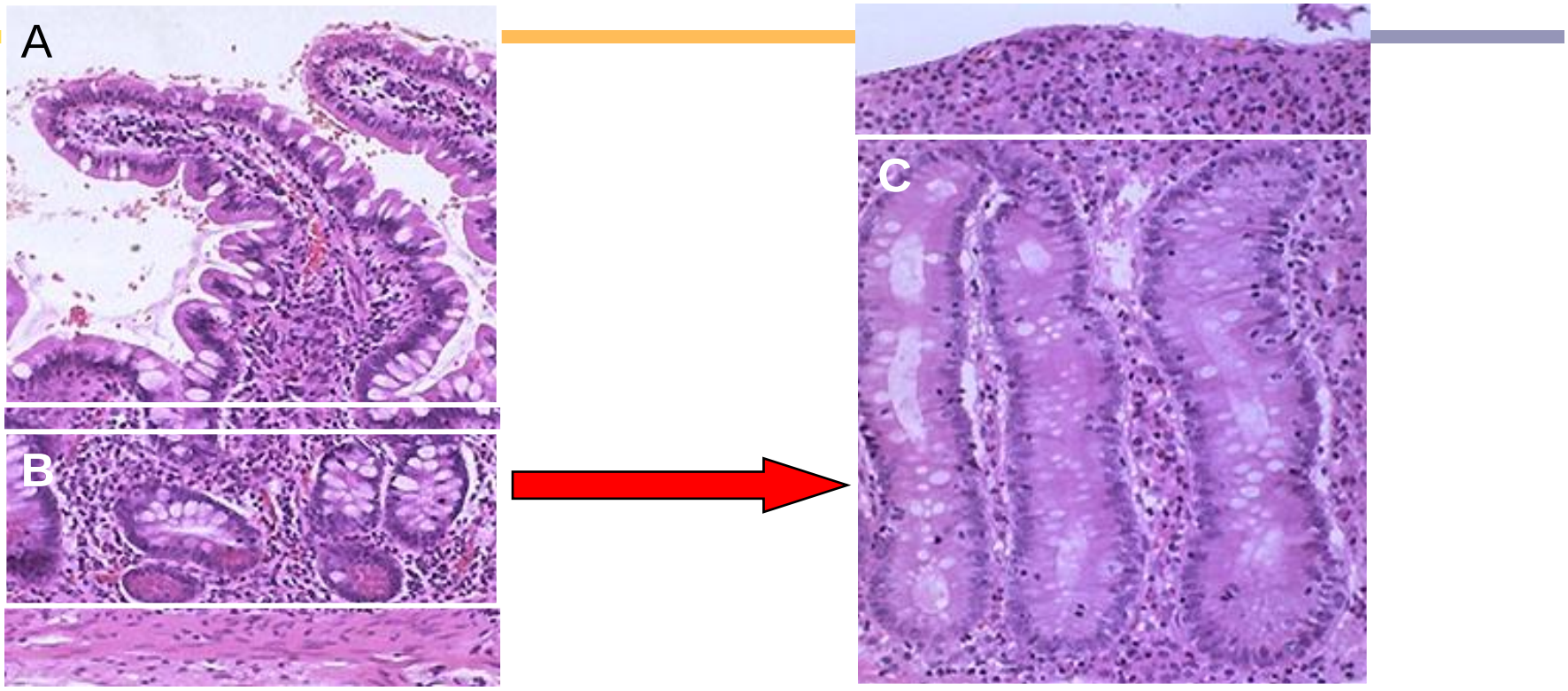
OSPE can Test

- Laboratory based measurement
- Microscopy skills
- Simulated skills
- Applied medical science
- Laboratory procedures
- Special tasks

Station Types in an OSPE

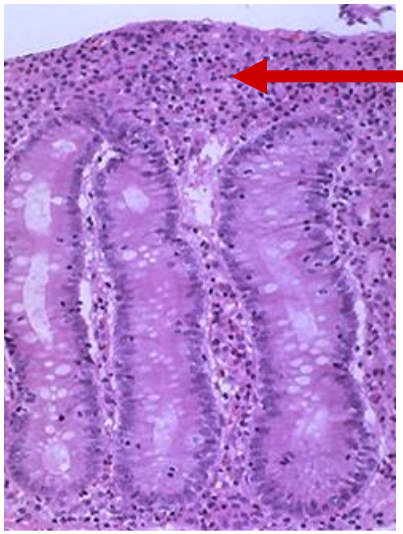
1. Microscope
2. Specimens
3. Computer
4. Laboratory equipment
5. SPs
6. X-ray, laboratory preps & results

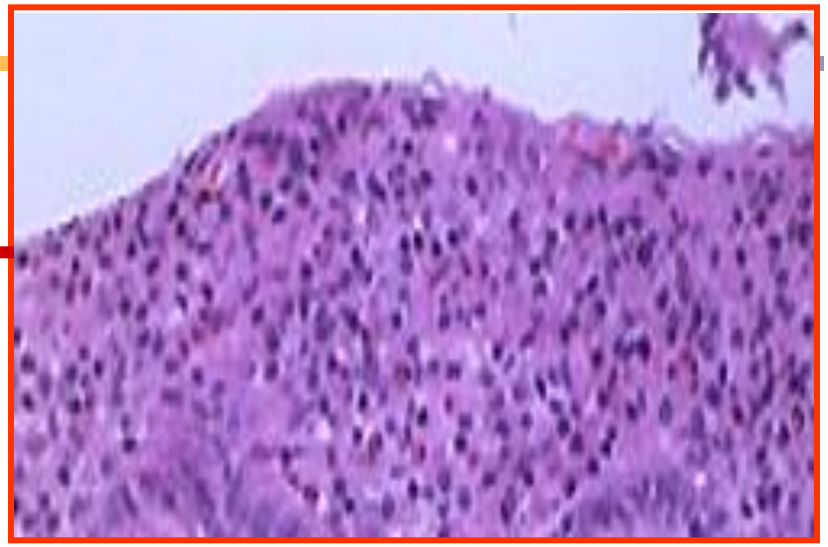
Station Example 1a



Use a sequence of annotated photomicrographs

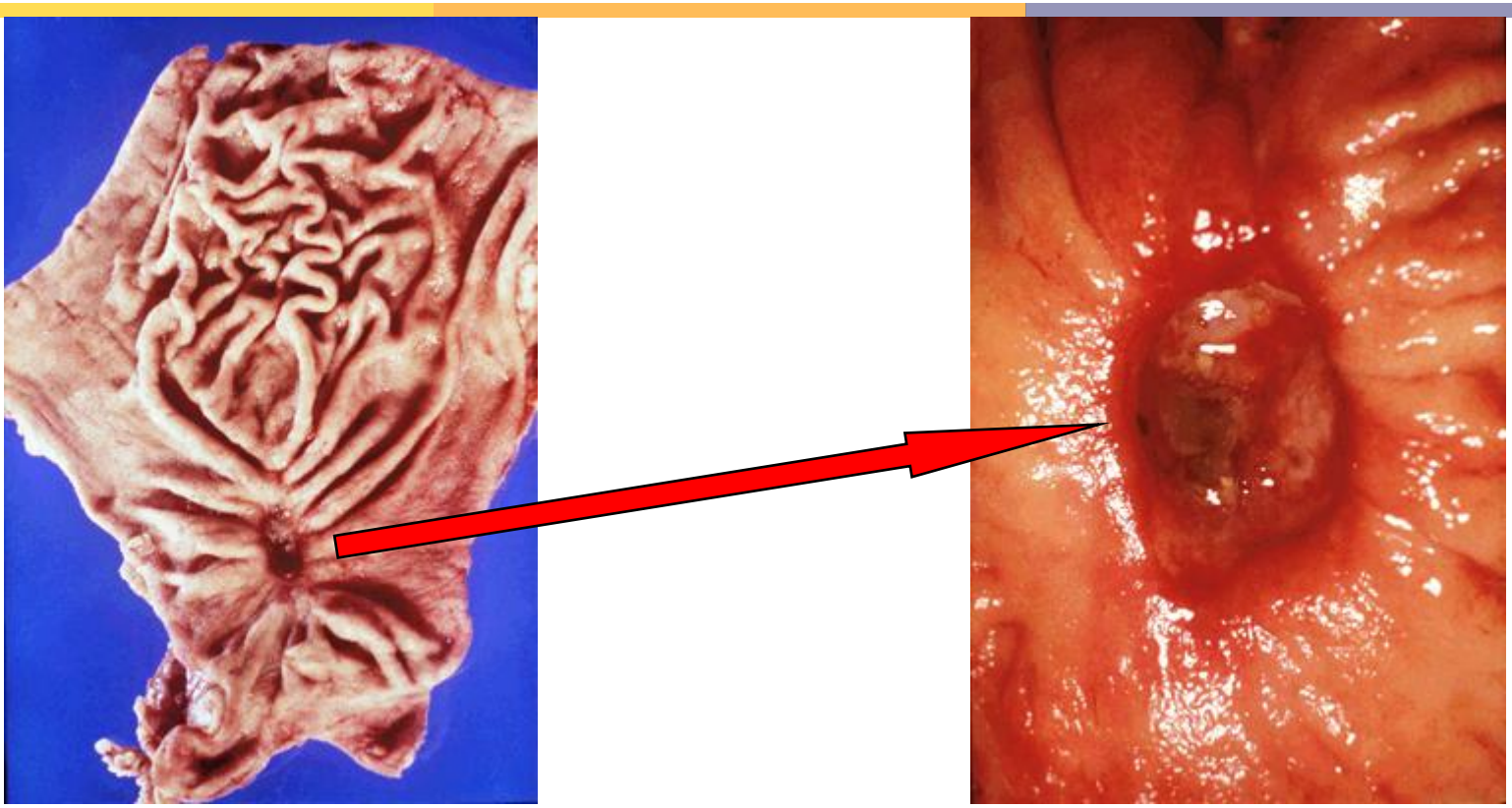
Station Example 1b





Use a sequence of annotated photomicrographs

Station Example 2



Specimens create several problems

Problems with Specimens

- Duplicates are difficult
- Multiples may not be similar
- Duplicates can be costly
- If fresh, handling issues
- If fresh, survival of the tissue!
- Labelling a problem

Station Example 3

+

Click here for normal

Click here for normal

Computers allow a complex array of illustrations

Station Example 3

+

Click here for normal

Computers allow an array of illustrations

Station Example 3

+

Computers allow an array of illustrations

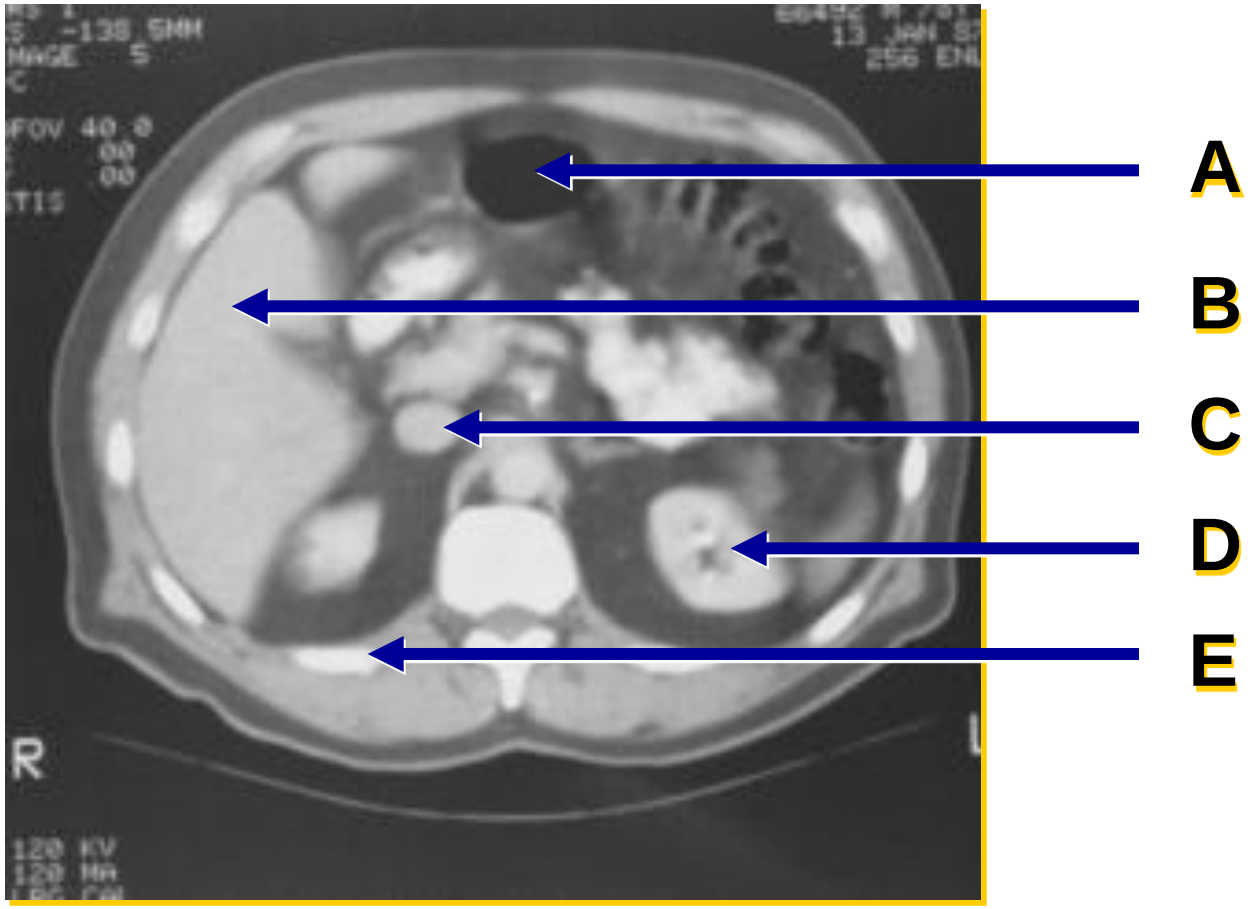
Station Example 4a

Applied Anatomy

- Observer
- SP
- Examining couch
- Curtained area
- Gloves
- Hand washing

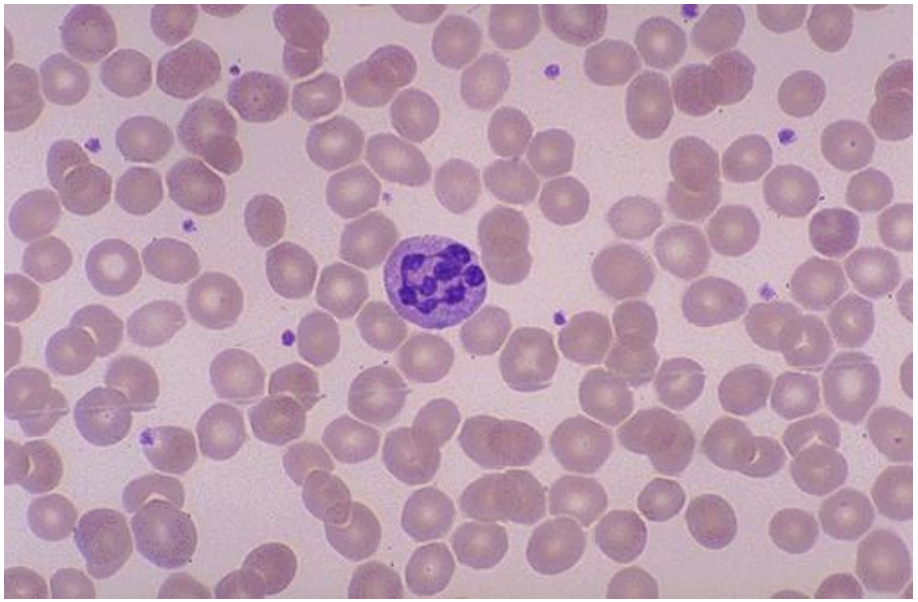
Station Example 4b

Radiological Anatomy



Station Example 5

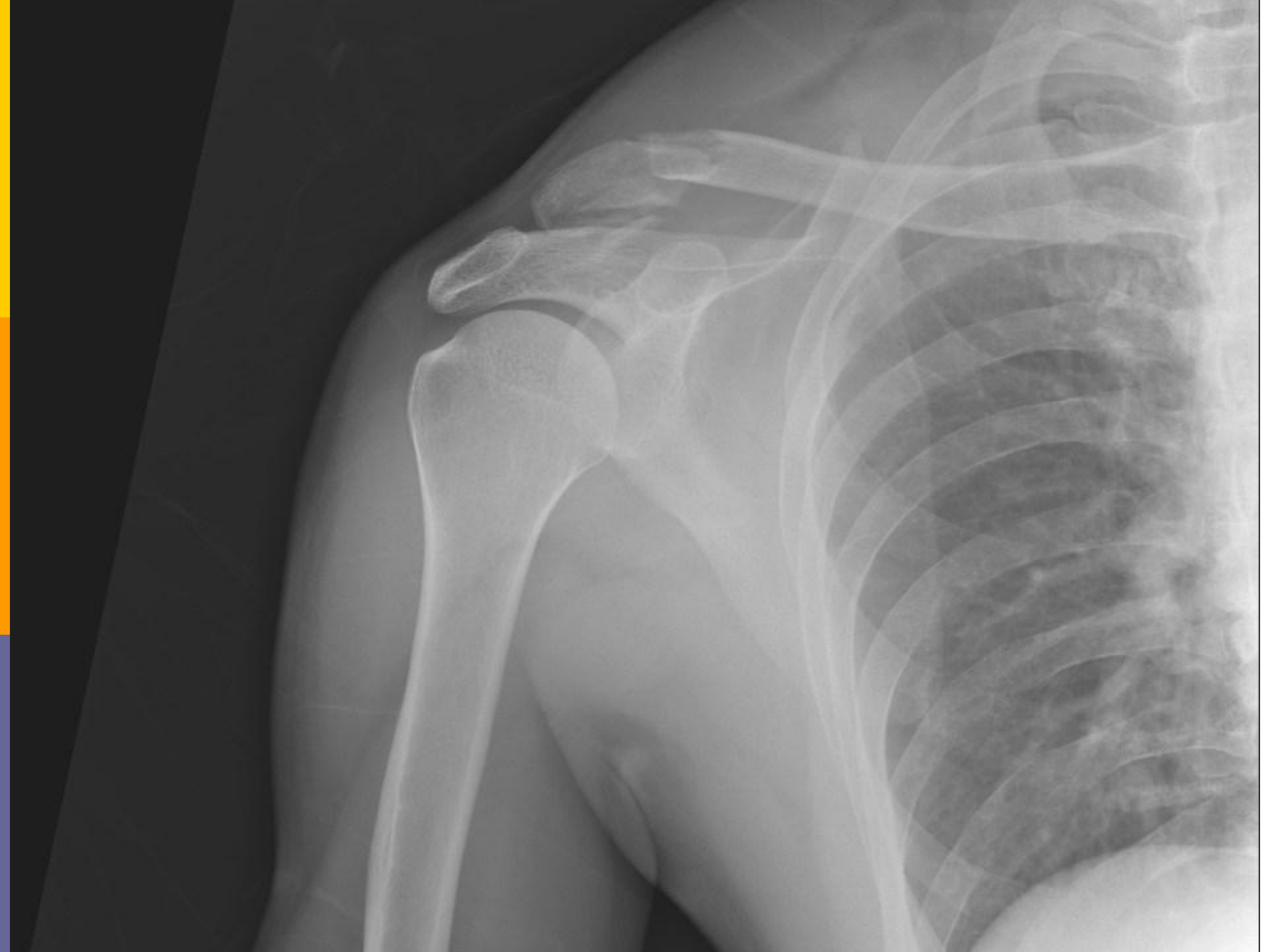
Laboratory Investigations



- Path form
  - Urine
- Blood smear
- Blood indices
- Perform tests
  - Urinalysis
  - Sedimentation rate

Case

- M/38
- Right shoulder contusion after fall
- PE: tenderness and swelling over his right upper chest . No skin impingement and no external wound found. No distal neurological deficit elicited



Questions

- 1) what is the diagnosis?
- 2) what is the classification of the fracture?
- 2) what is the management?

Case

- M/70
- Left shoulder contusion after history of fall
- PE: left shoulder in abducted position
- X rays of left shoulder was taken

Questions

- 1) what is the diagnosis?
- 2) what is the method of reduction?

TEACHER EVALUATION

Dr. Sabina Khan
Member MEU

Something to think about

*In what may be labelled as smug satisfaction, an amazing 94% of teachers rate themselves **above average** and 68% rate themselves in the upper quartile of teaching performers.*

You as a teacher

How well you are teaching?

And

How might you improve?

EVALUATION

A formal process of gathering information over a period of time and the application of reasoned professional judgement by an evaluator in determining whether one or more aspects of the teaching of a teacher exceed, meet or do not meet the teaching standards.

- “Assume all teaching to be ineffective till there is evidence to contrary”(*Mager*)

- “Consumer is always right”

Changing approaches to evaluation of teachers

- Provider of Information
- Demonstrator

- Explainer
- Facilitator
- Supervisor
- Mentor
- Role Model
- Planner
- Assessor

Then

Now

Need for Evaluation?

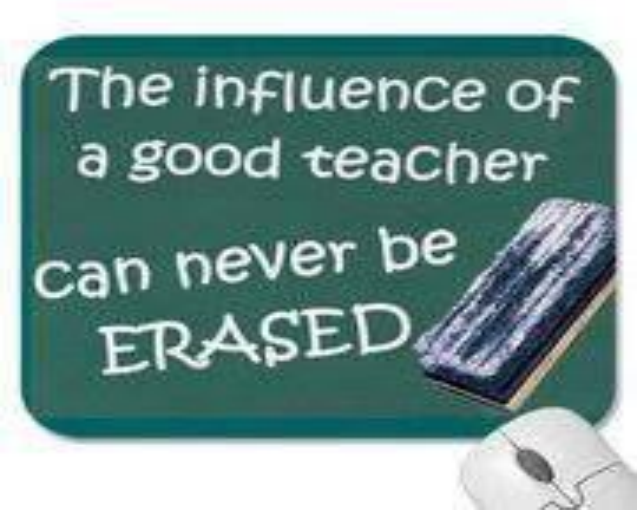
Two broad purposes;

- Evaluation for improvement, i.e. Quality enhancement leading to development and improvement of learning, teaching etc

- Evaluation for accountability i.e Quality assurance regarding performance with respect to promotion, competence, assurance for stakeholders etc

Goal for evaluation

- Quality teaching
- Professional development



Students success should always be the focus of teacher evaluation

What to evaluate

- The core activity of teaching – i.e planning and preparation, the classroom environment and instruction itself.

- Responsibilities of teachers - contribution to the medical school development and professional development activities.

Types of Evaluation

- Formative –for teachers

  To identify areas for teaching improvement

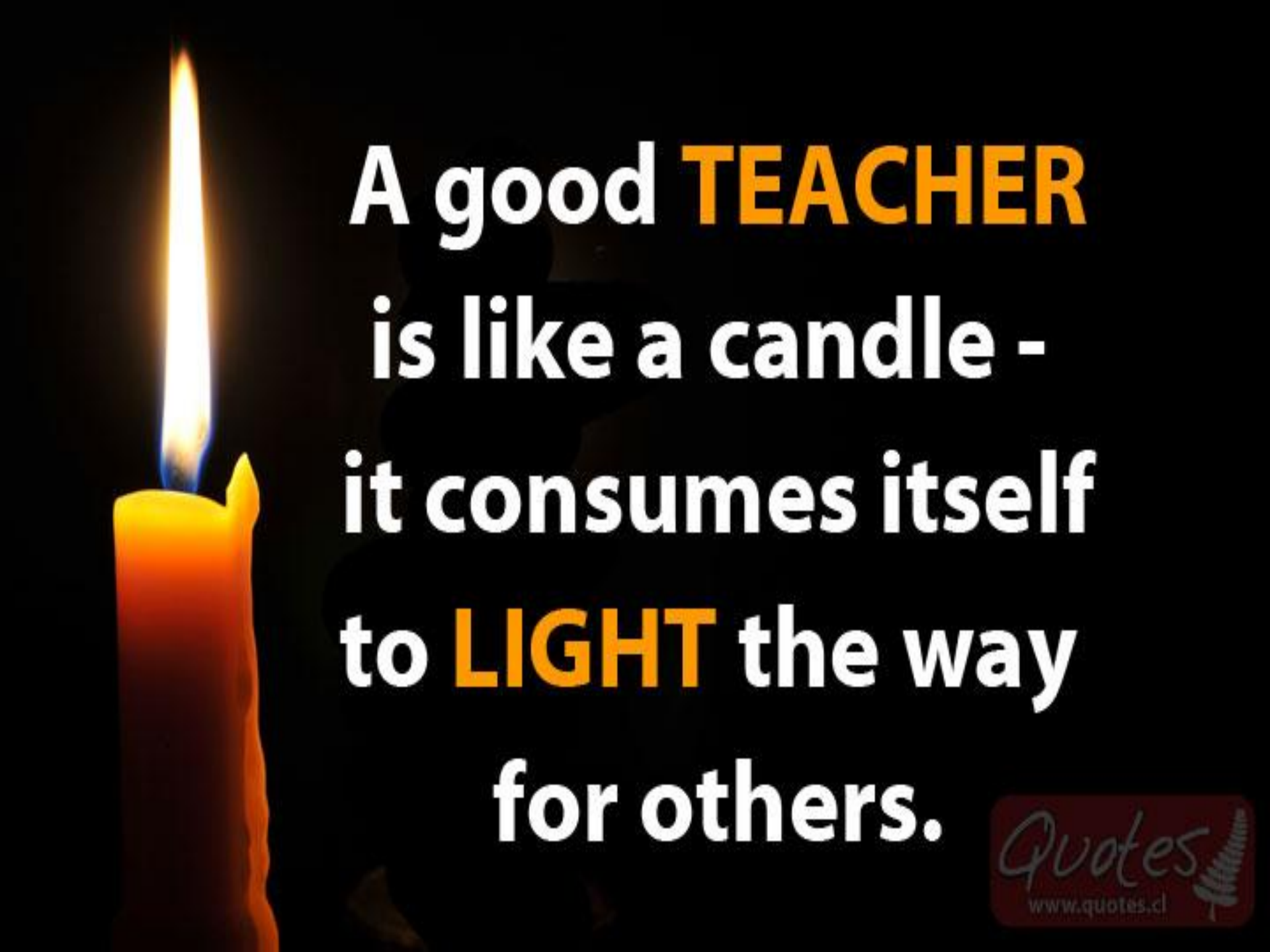
- Summative –for system and teachers

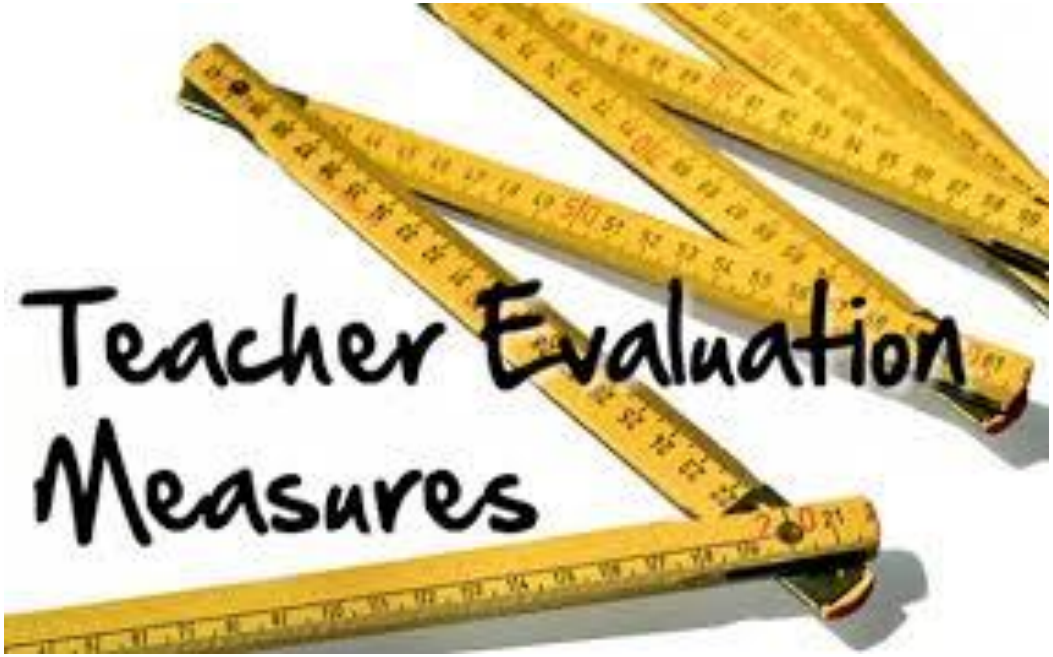
  Judges the effectiveness of teaching

Teacher evaluation requires

- establishment of reference standards
- evaluation criteria to allow proper assessments of performance.

In particular, a definition of what good teaching is needs to be developed.


A good TEACHER
is like a candle -
it consumes itself
to LIGHT the way
for others.
Quotes
www.quotes.cl


Teacher Evaluation
Measures

Evaluation Measures

- Electronic Feedback
- Peer –review
- Self-evaluation
- Students feedback

Electronic feedback

Tape and video recordings

- Viewed by self
- Non threatening
- developed countries

Peer review

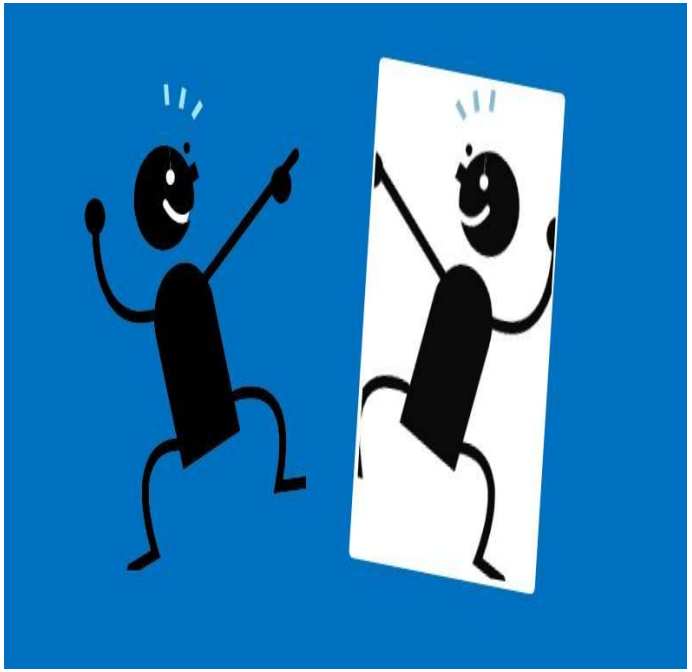
- Somewhat similar to microteaching
- Observed by senior colleague during an actual class

Peer review (contd.)

- It covers those aspects of teaching that students are not in a position to evaluate.
- Student and peer ratings, viewed together, furnish a very comprehensive picture of teaching effectiveness.

Self evaluation

- Prerequisite to professional growth
- There maybe a conflict between what you feel and what students think.
- Self check scales

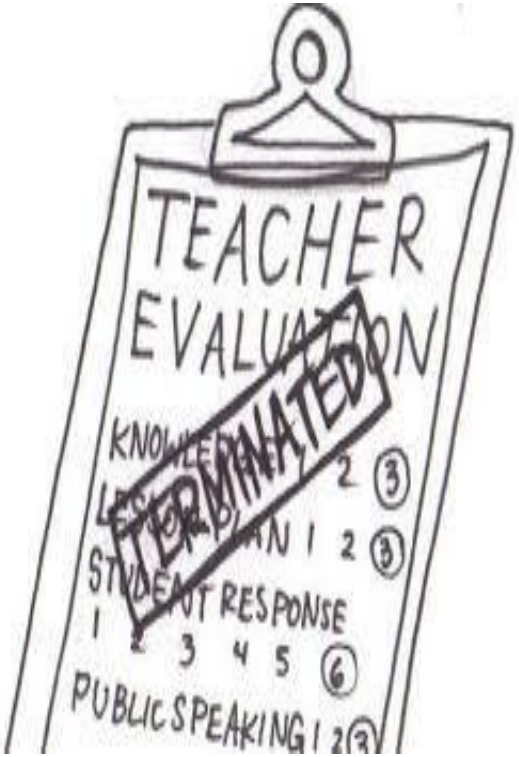


Student Feedback

- Most important source of obtaining feedback.
- Research has shown that students views are consistent with those given by more experienced colleagues.

The proof of the pudding


SO... LIKE... YOUR JOB IS LIKE... DEPENDENT ON ME? WOW.
UHHHH... WHAT ARE YOU READING?
THE CLASSIFIED SECTION.
JOBS
FML


TEACHER
EVALUATION
TERMINATED
PUBLIC SPEAKING 1 2 3

Remember

We can change the focus from

- “what is the quality of your teaching?”

To

- “how can we use evidence gathered from student feedback and other forms of information to improve teaching?”

Good news is....

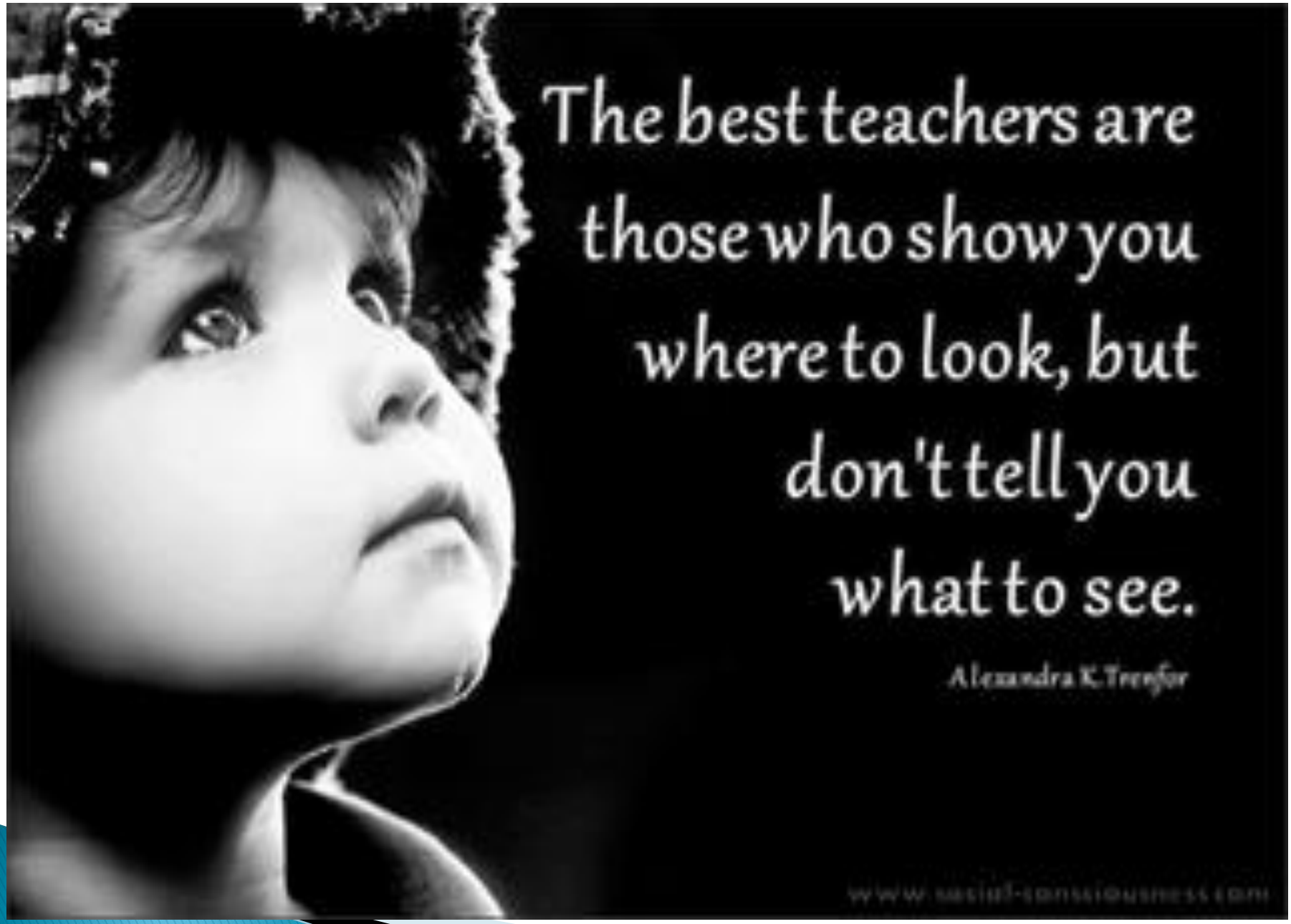
- Most faculty members continue to be enthusiastic about teaching

- Many have taken courses designed to improve their teaching skills

Take home message

- The fundamental purpose of evaluating teachers and teaching should be to improve the quality of medical education

- Teacher evaluation and the resulting feedback will only work if teachers make it work.

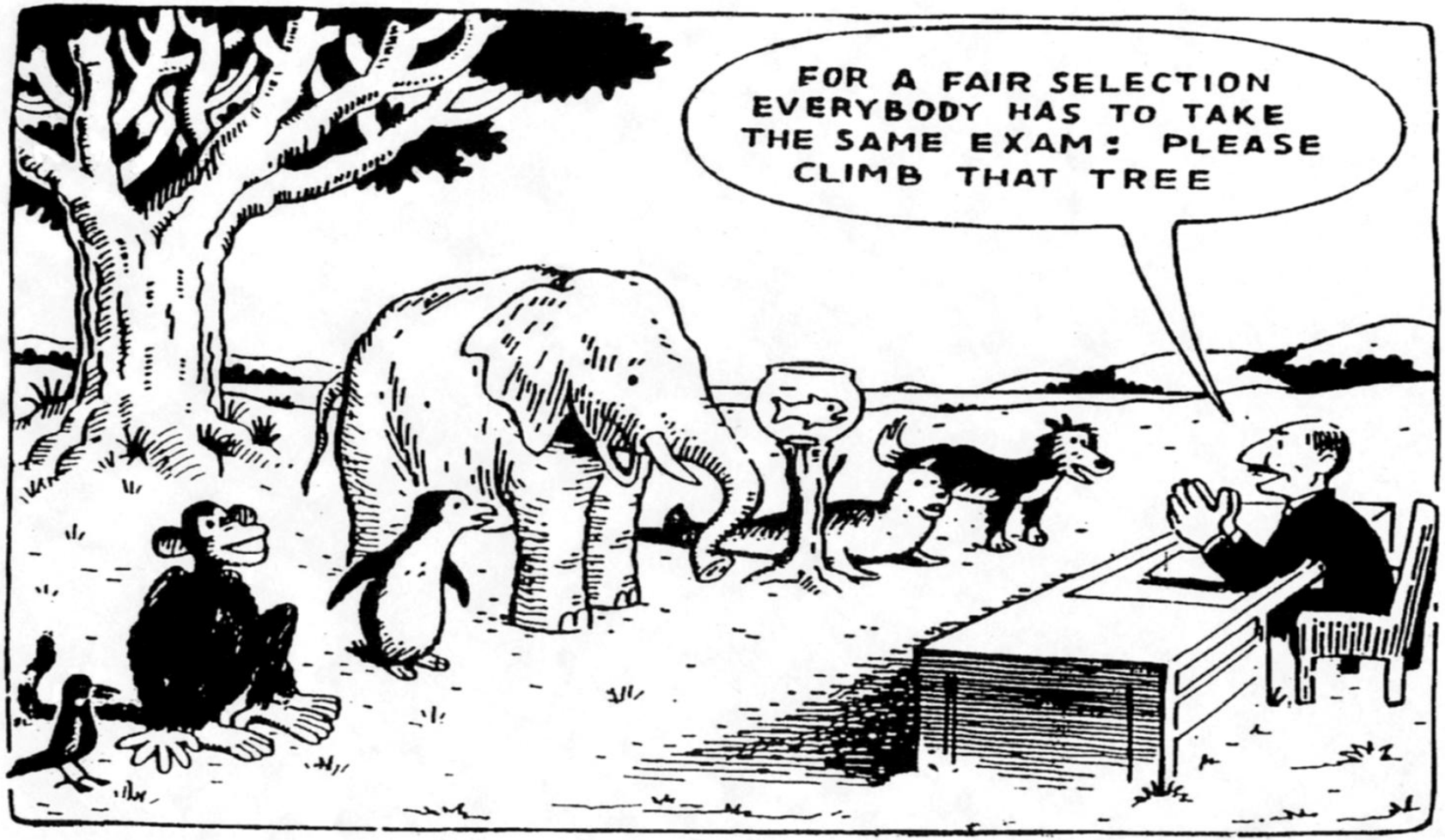

The best teachers are
those who show you
where to look, but
don't tell you
what to see.
Alexandra K. Trenfor


Thank You!

Teacher Evaluation Questionnare

- Create & maintain an atmosphere for learning
- Speak with loud and clear voice
- Explain relevance of the matter taught
- Arose interest/curiosity
- Explain clearly
- Provide examples
- Summarize issues before moving on
- Pose thought provoking questions
- Encourage students to share ideas
- Detect confusion and misconcepts in the class
- Provide relevant notes
- Guide for future learning

Questions?


FOR A FAIR SELECTION EVERYBODY HAS TO TAKE THE SAME EXAM: PLEASE CLIMB THAT TREE