amfem
Asociación Mexicana de Facultades y Escuelas de Medicina, A.C.
1957
65 AÑOS

Evidence and Experience: the perfect match!

The case for academic environments in supporting (master adaptive) lifelong learning

Panel Axis 6: Lifelong learning

Helena Prior Filipe, MD, MMEd, FAMEE, FSACME

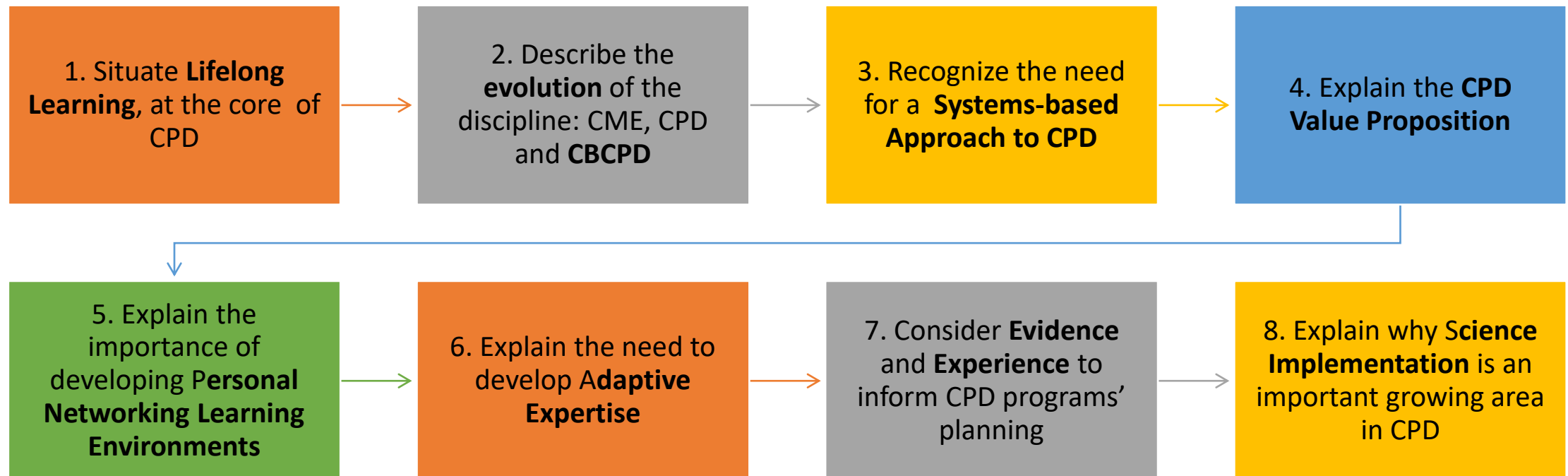West Lisbon Hospitals Center. Hospital Egas Moniz

Center for International Investigation of Egas Moniz

University of Lisbon. Faculty of Medicine, Department of Medical Education

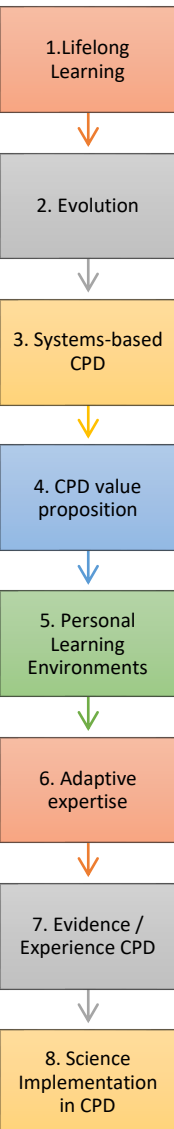*June 14-18, 2022*
Puerto Vallarta, Mexico

Goal and Objectives

Summarize the importance of developing and implementing evidence informed competency-based CPD curricula based on professional experience in practice, when considering a systems-based approach to CPD

1. Situate **Lifelong Learning**, at the core of CPD

2. Describe the **evolution** of the discipline: CME, CPD and **CBCPD**

3. Recognize the need for a **Systems-based Approach to CPD**

4. Explain the **CPD Value Proposition**

5. Explain the importance of developing P**ersonal Networking Learning Environments**

6. Explain the need to develop A**daptive Expertise**

7. Consider **Evidence** and **Experience** to inform CPD programs' planning

8. Explain why S**cience Implementation** is an important growing area in CPD

1. Lifelong Learning, CPD and Professionalism

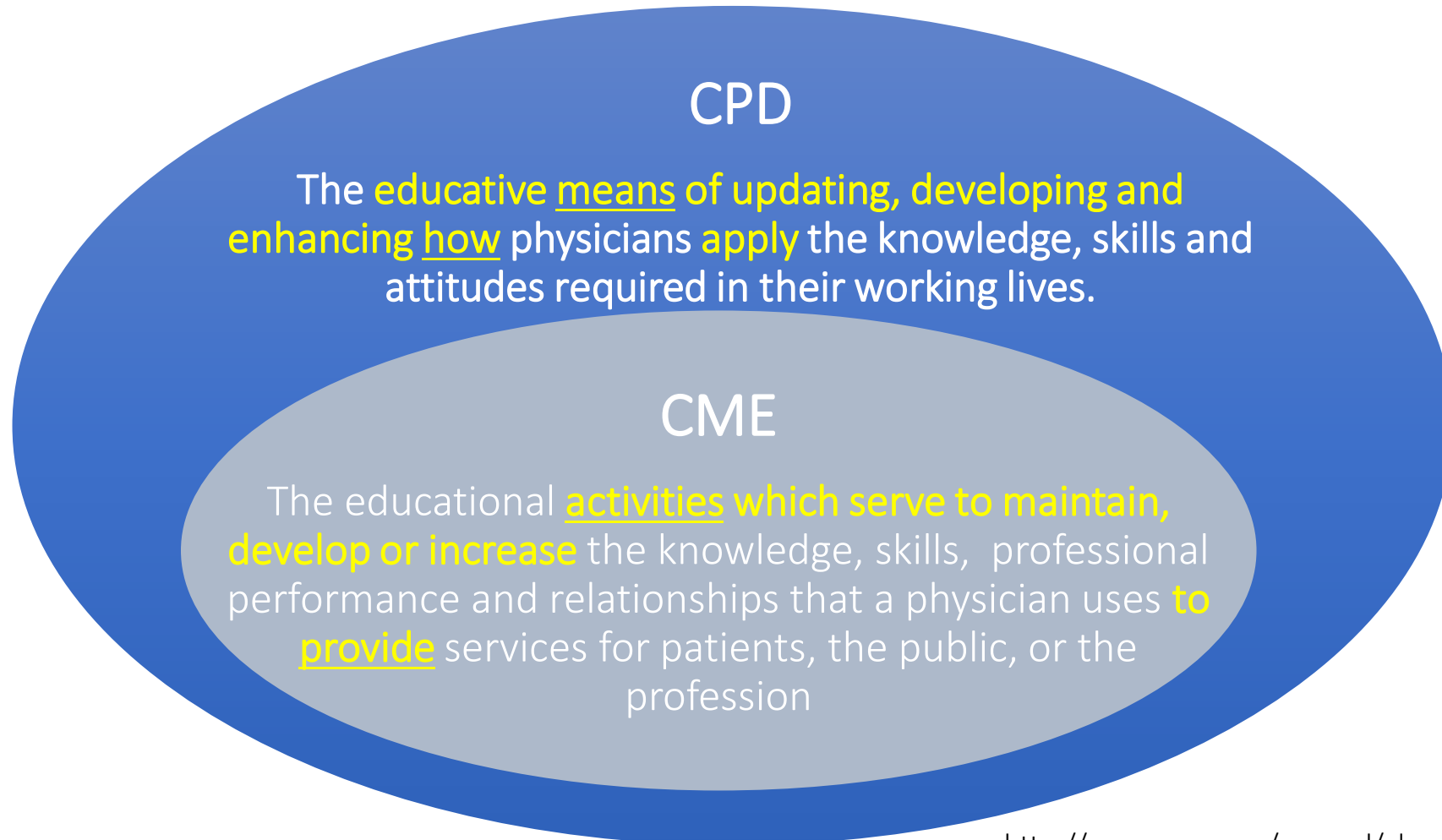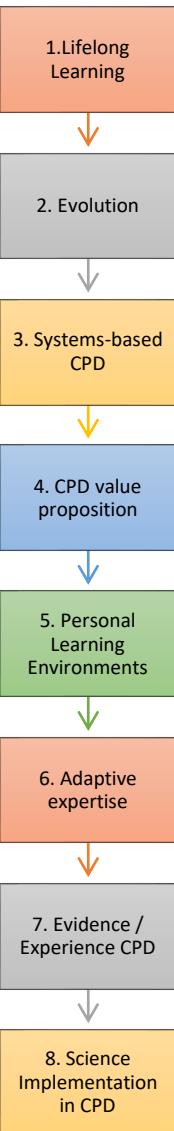| |
|---|
| 1.Lifelong Learning |
| 2. Evolution |
| 3. Systems-based CPD |
| 4. CPD value proposition |
| 5. Personal Learning Environments |
| 6. Adaptive expertise |
| 7. Evidence / Experience CPD |
| 8. Science Implementation in CPD |

Physicians' lifelong learning commitment to provide the best healthcare
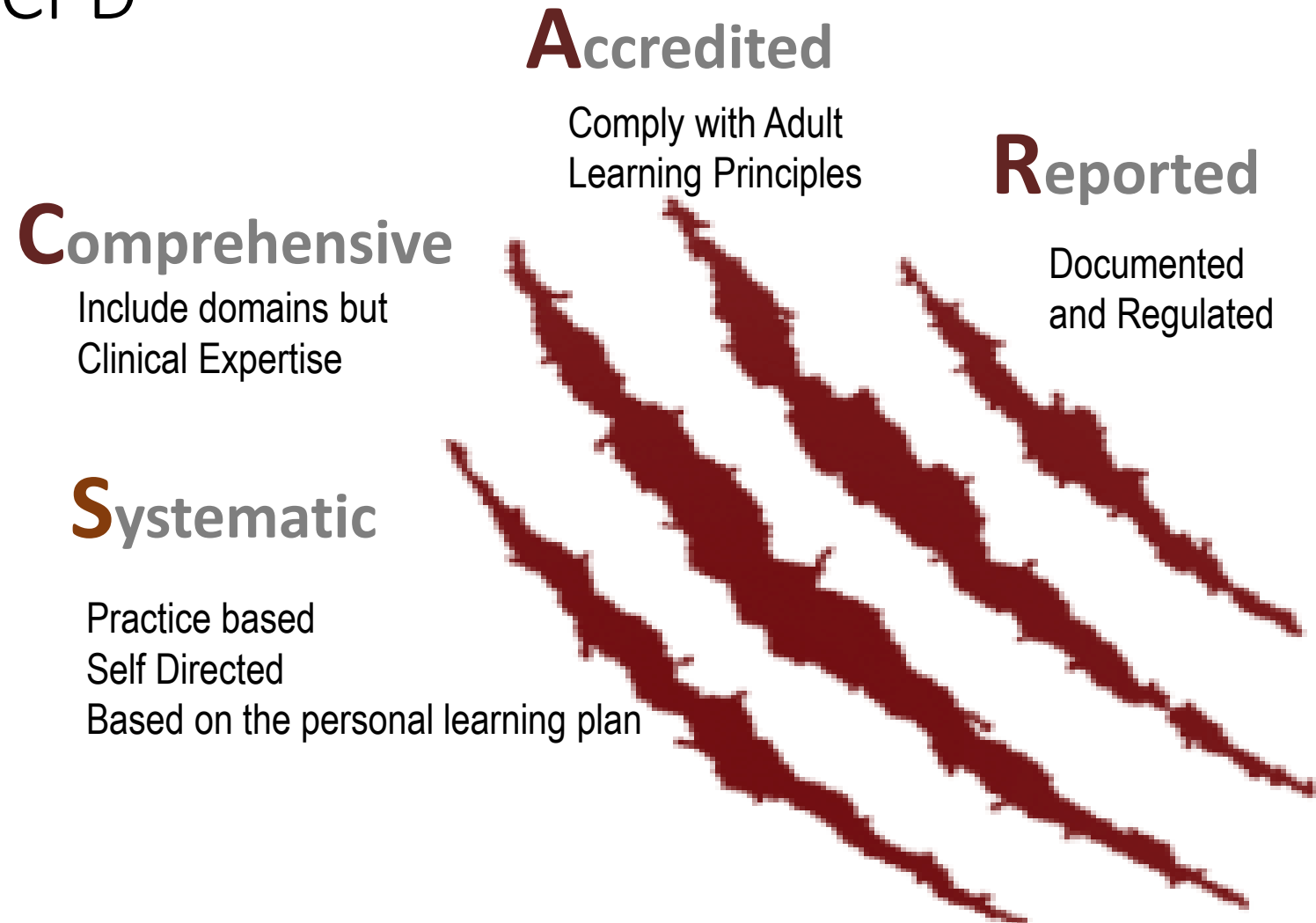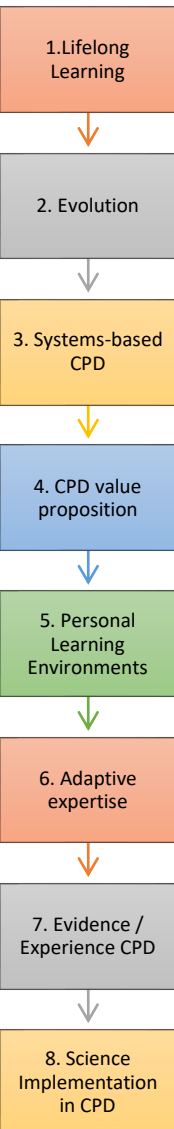
1. Effective Lifelong Learning

1. Should be **relevant to practice**
2. Requires **learners' engagement**
3. Is **enhanced** by working in a **community of practice**
4. Must
   - **Be supported by evidence**
   - **Enable receptivity** to evidence

J Sargeant, V Curran, K Eva, J Parboosing, I Silver, FMEC. , 2019

2. Evolution of the discipline
CME and CPD

CPD

The educative means of updating, developing and enhancing how physicians apply the knowledge, skills and attitudes required in their working lives.

CME

The educational activities which serve to maintain, develop or increase the knowledge, skills, professional performance and relationships that a physician uses to provide services for patients, the public, or the profession

http://www.uems.eu/general/glossary

2. Evolution of the discipline
Principles of CPD

1.Lifelong Learning

2. Evolution

3. Systems-based CPD

4. CPD value proposition

5. Personal Learning Environments

6. Adaptive expertise

7. Evidence / Experience CPD

8. Science Implementation in CPD

Comprehensive
Include domains but
Clinical Expertise

Accredited
Comply with Adult
Learning Principles

Reported
Documented
and Regulated

Systematic
Practice based
Self Directed
Based on the personal learning plan

2. Evolution of the discipline

Factor driving change	Components
Medical knowledge	Rapid growth
	Rapid redundancy
	Evidence-based medicine
Medical practitioners	Need to demonstrate competency to patients
	Medico-legal consequences of changes in medical knowledge
	Increased global mobility
Patients and society	Demographic changes
	Increase in chronic disease
	Increased global mobility
	Increased expectations for doctor accountability
Healthcare systems	Increasingly complex
	Funding constraints
	Inter-professional team work
Regulators	CPD requirement for revalidation
	Patient outcome analysis requirement for revalidation
Political environment	Increased international recognition of professional qualifications (EU directive)

	CME	CPD	CB CPD
Drivers	Teacher	Self-directed	Self-directed; needs of health-care system
Focus	Clinical expertise	All competencies required by medical practitioner	Performance of medical practitioner in clinical practice
Curriculum	No	Yes	Yes
Delivery	Formal lectures in auditoria	Wide-range of learning methods, including on-line and informal, unplanned learning	Wide-range of learning methods, including on-line and informal, unplanned learning. Includes audit of performance in practice
Outcome	Improved patient care	Improved patient outcomes	Improved patient outcomes; meets needs health-care system
Comment	Decontextualized, fragmented	Self-assessment and reflection are assumed	Performance in practice is measured objectively

3. Systems-based CPD

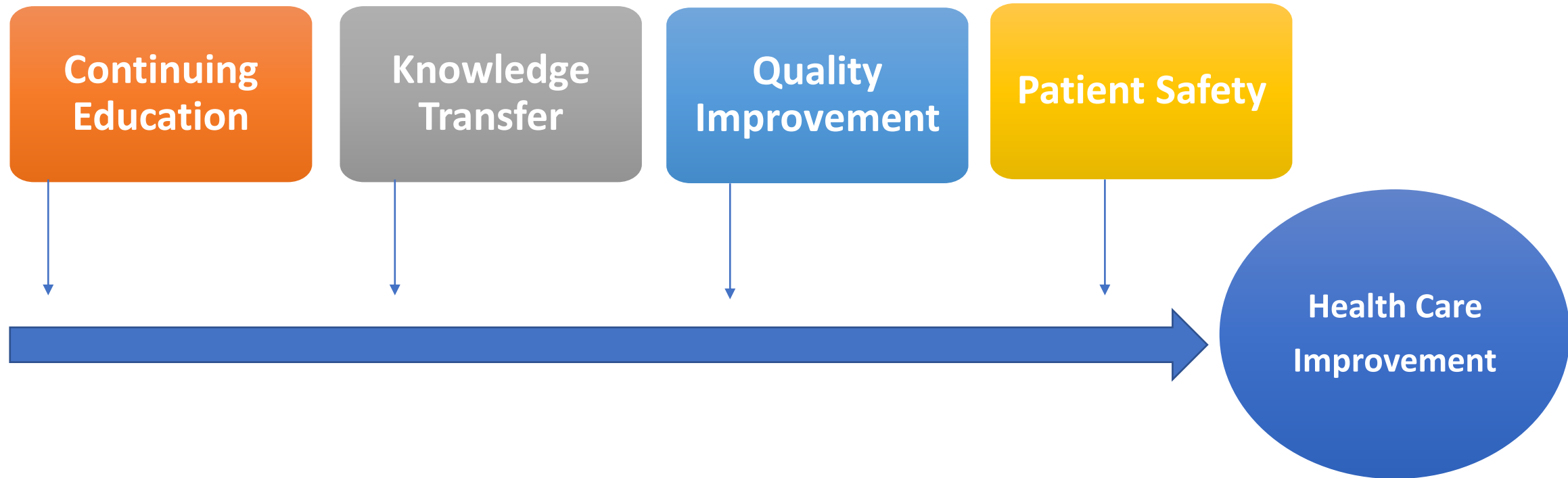| Step |
|------|
| 1. Lifelong Learning |
| 2. Evolution |
| 3. Systems-based CPD |
| 4. CPD value proposition |
| 5. Personal Learning Environments |
| 6. Adaptive expertise |
| 7. Evidence / Experience CPD |
| 8. Science Implementation in CPD |
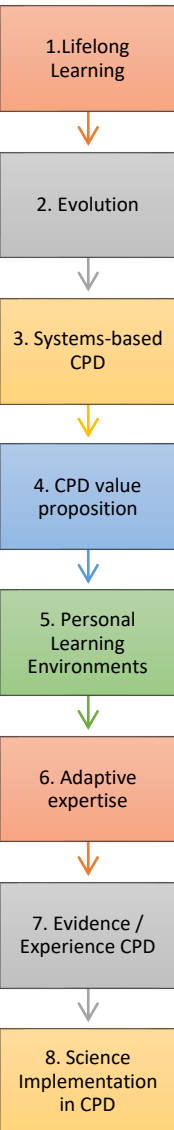
Aim: Respond to the systems /organizations needs

Strategy: Tailor education to local workplace based on relevant data

Assessment: Combine external with learning needs self-assessment

3. Systems-based CPD intersects with

Continuing Education	Knowledge Transfer	Quality Improvement	Patient Safety

Health Care Improvement

Kitto SC et al. J Contin Educ Health Prof 2015

3. Systems-based CPD and Quality Improvement

Focus on **PRACTICE IMPROVEMENT**

Identify CPD **quality GAPS** to inform a **PLP**

Integrate **CPD** into **QI** initiatives

Integrate **QI** into **CPD** initiatives

Supplement CPD with **post-event deliverables**

Co-create a CPD experience with **PATIENTS**

Shojania KG, Silver I, Levinson W. Ann Intern Med 2012;156:305

Kitto SC et al. J Contin Educ Health Prof 2015

3. Systems-based CPD
Quality Improvement
and
Patients as Partners

Co-production
Co-design
} Doing with
in an equal and
reciprocial partnership

Engagement
Consultation
Informing
} Doing for
engaging and
involving people

Educating
Coercion
} Doing to
trying to fix people
who are passive
recipients of service

https://www.thinklocalactpersonal.org.uk/
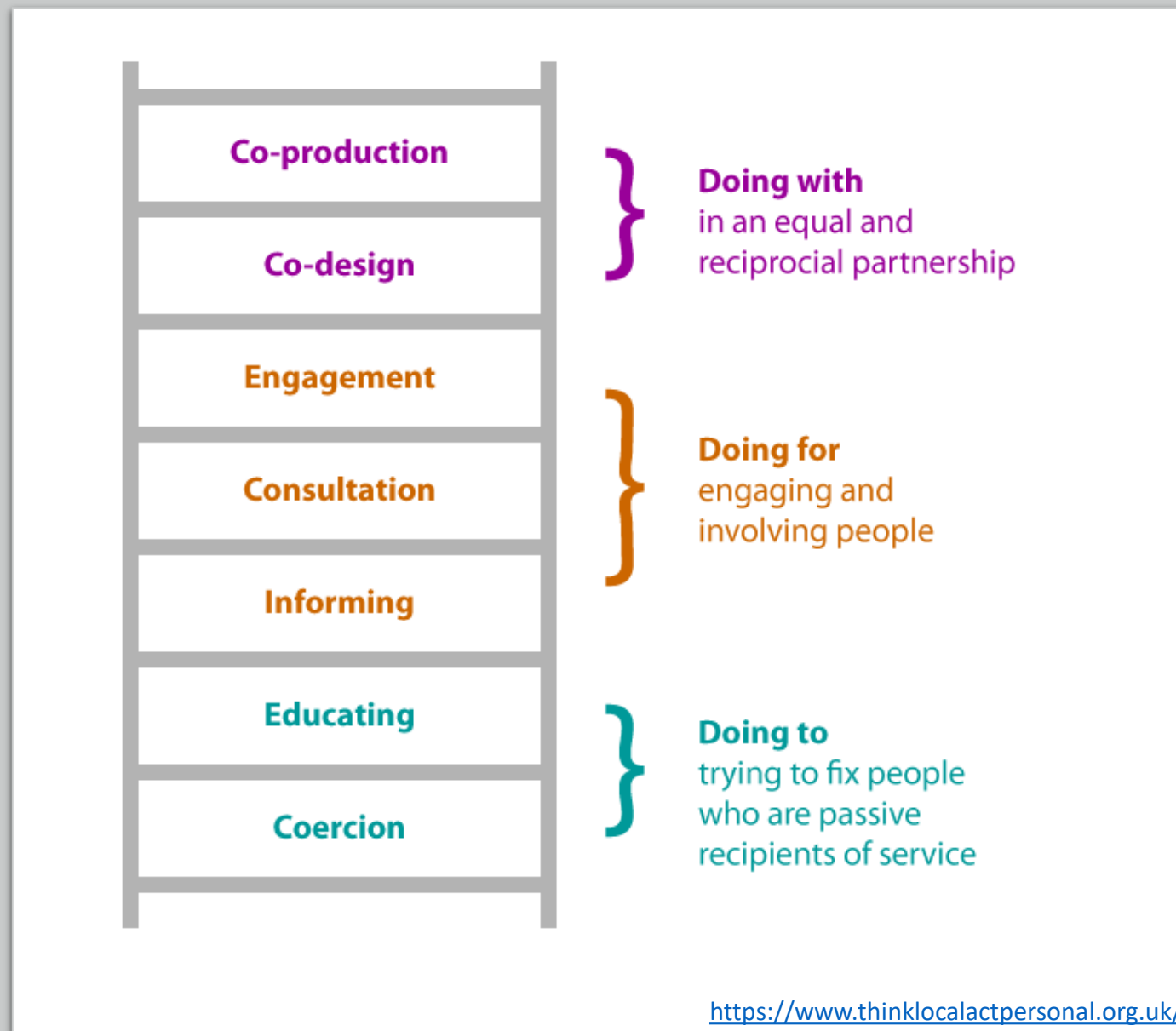
3. Systems-based CPD
CPD educators will need to know about:

| Program administration | Accreditation | Quality improvement | Research methods |

| Organization of medical practice | Professionalism | Situated educational initiatives based on
- adult learning theory
- evidence of effectiveness
- systems and implementation science |

3. Systems-based CPD
Curricula starting by the end!
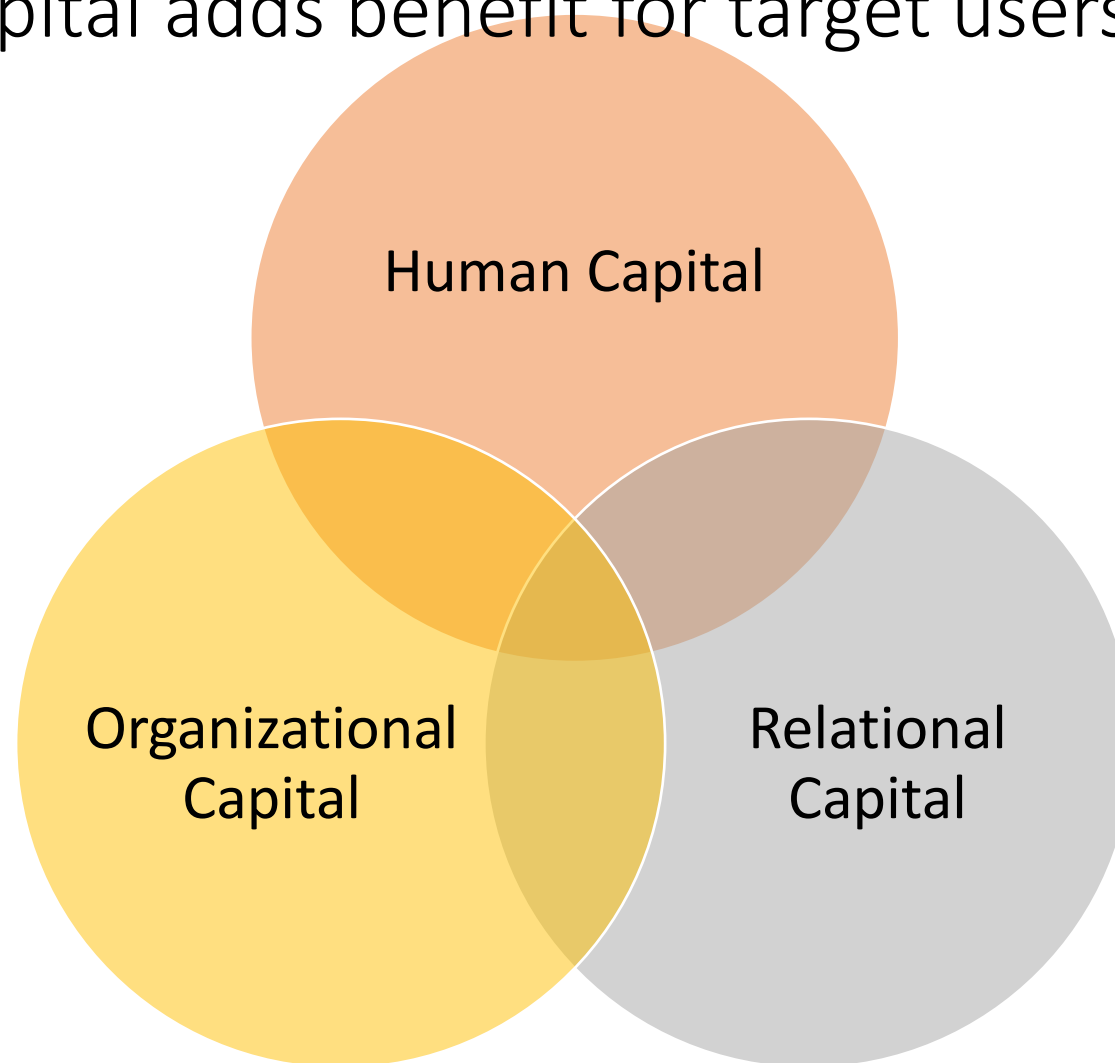
Traditional model

Competency-based education model

Holmboe ES, Foster TC, Ogrinc G. J Contin Educ Health Prof 2016; Frenk J, et al. Lancet. 2010; ; Frank, JR, Snell LS, ten Cate O, et. al. 2010
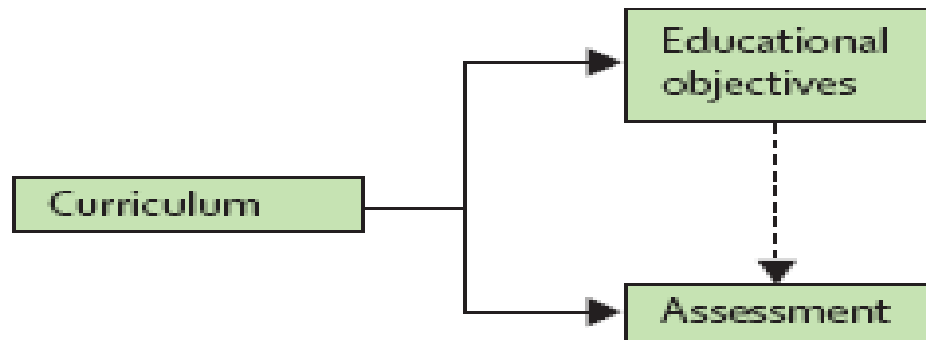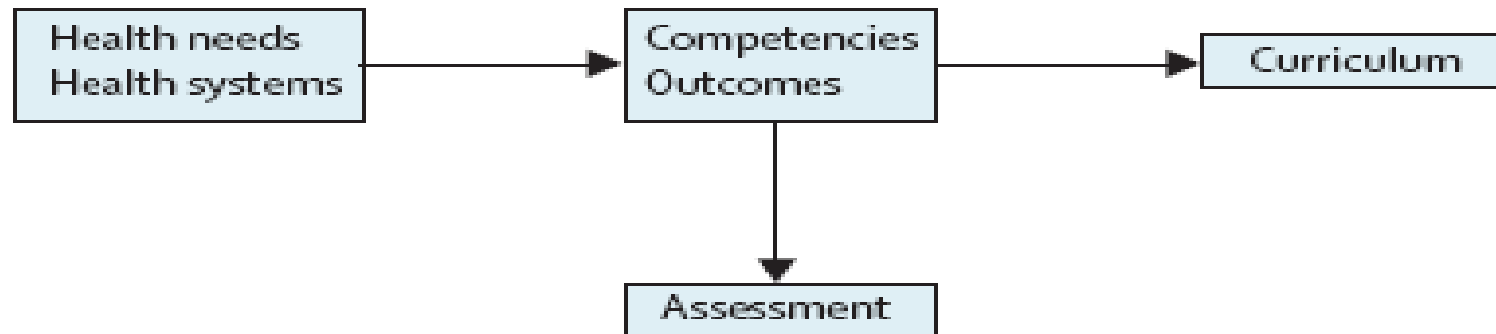
3. Systems-based CPD
Educational and clinical outcomes aligned!
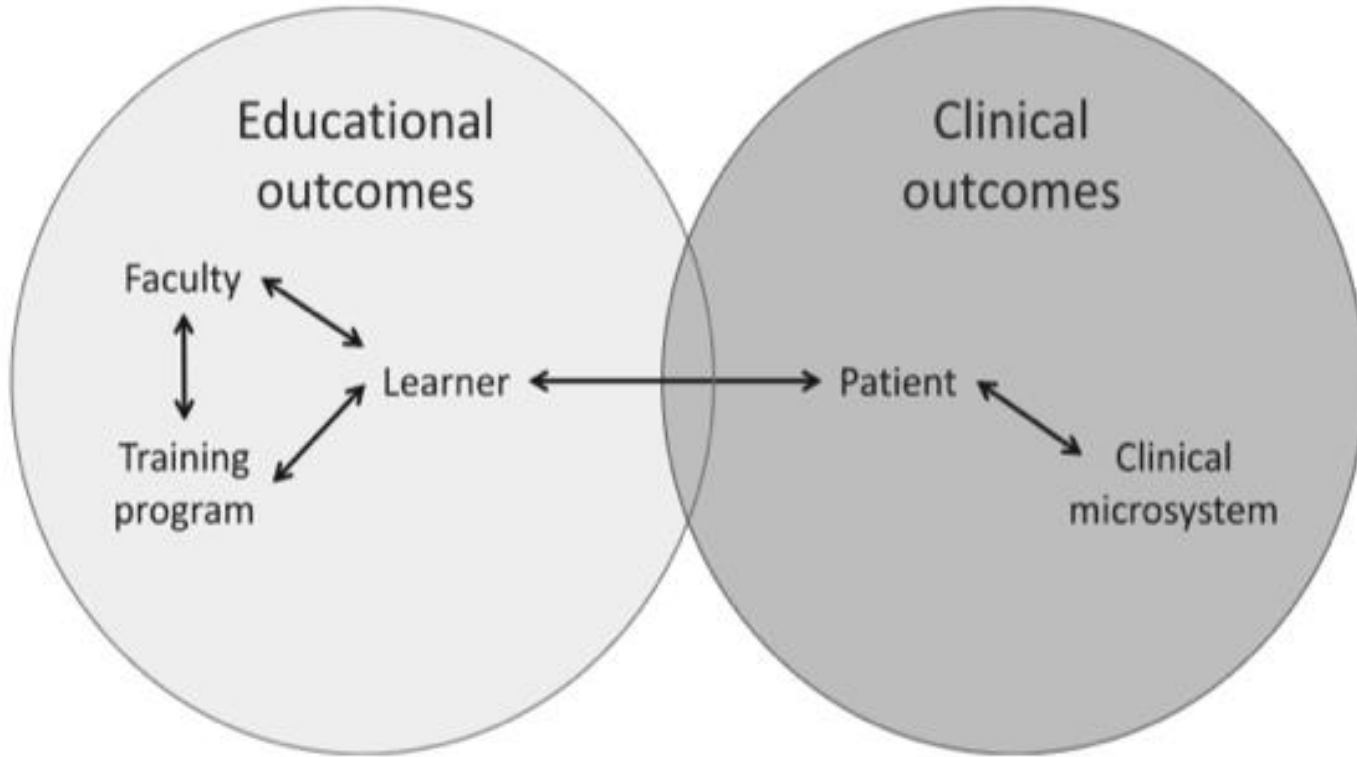
4. CPD value proposition
Intellectual capital adds benefit for target users!

1.Lifelong Learning

2. Evolution

3. Systems-based CPD

4. CPD value proposition

5. Personal Learning Environments

6. Adaptive expertise

7. Evidence / Experience CPD

8. Science Implementation in CPD

Human Capital

Organizational Capital

Relational Capital

Suzanne Harrison and Pat Sullivan. Einstein in the boardroom. 2006
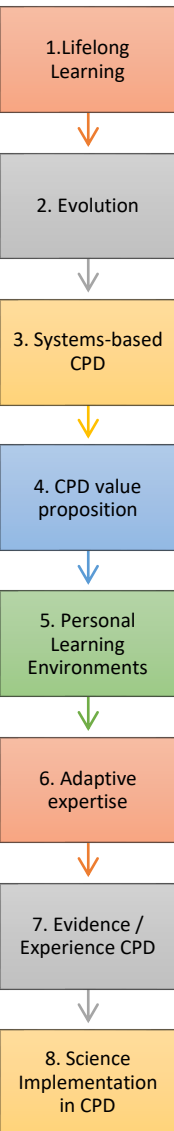
4. CPD value proposition
Healthcare Organizations

"Institutions of Reflective Practice" should enable medical profession work to be

- valued intrinsically for the public good
- central to practitioners' self-identity
- responsive to social values and medical professionalism principles

4. CPD value proposition

by

Maintaining close linkage with communities

Using education to attend clinician well being

Making collegial, experiential, reflective, lifelong learning a part of education and practice

Merging education and practice

David M. Frankford, Melina A. Patterson, and Thomas R. Konrad. Academic Medicine 2000

McMahon, G. T. Academic Medicine,2017

4. CPD value proposition
Learning Practice Point of care

Self-directed learning activities to

convert knowledge into practice and improve performance

1. Needs assessment

Assess practice needs and knowledge gaps.

2. Problem-based learning

Formulate a question

Search for evidence

Appraise evidence to apply in practice

3. Reflection

Reflect on outcomes

Moja L, Kwag KH. Postgrad Med J 2015;91:83–91.

4. CPD value proposition
Shared practice = a social learning space

Creating Generative Conversations

Welcoming Emergent Learning

SHARED PRACTICE → **Practice improvement**

Developing skilled Facilitation

Networking and Building trustful relationships

Parbosingh J , et. al. J Contin Educ Health Prof. 2011
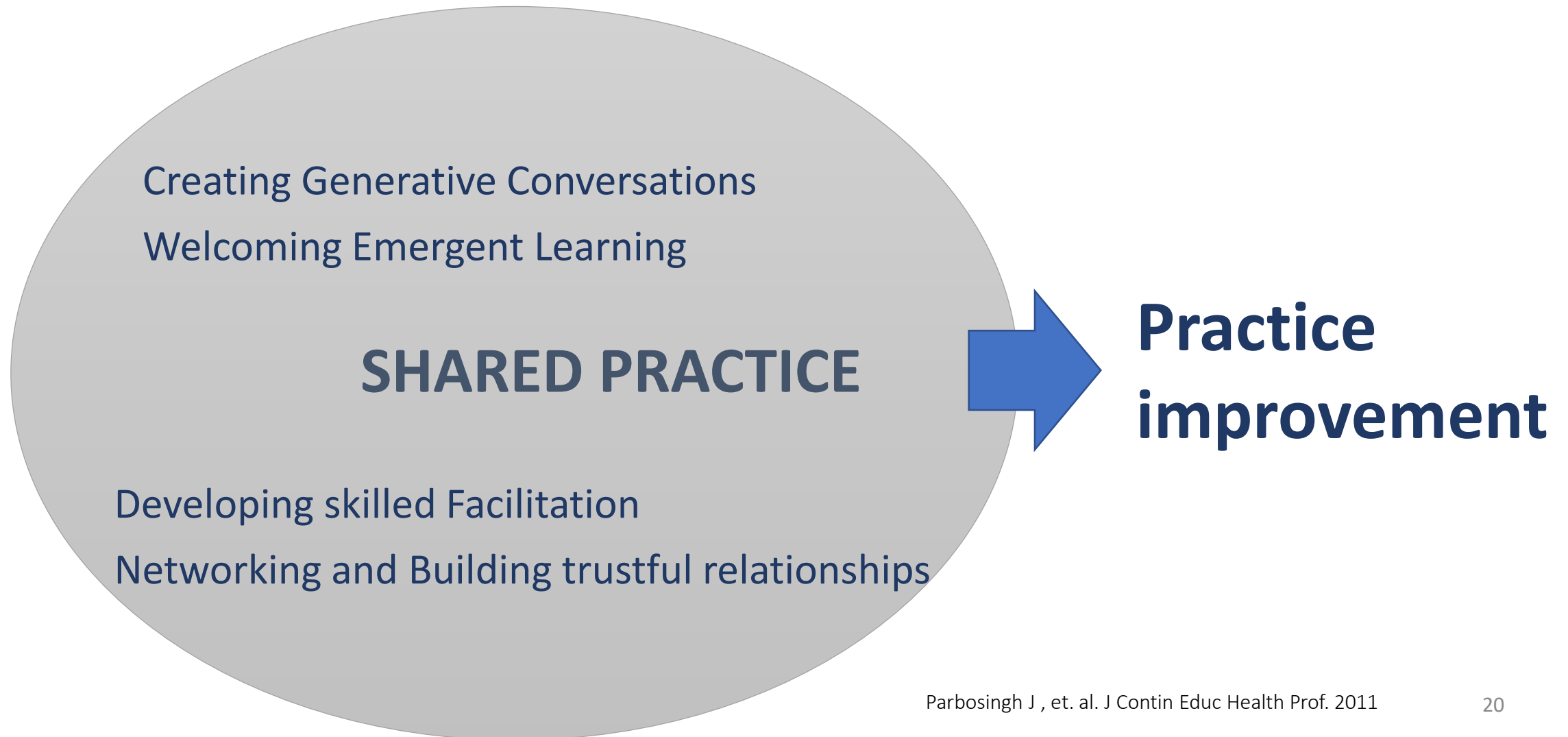
4. The CPD value proposition

- "**To raise quality**, health care managers will **reposition CPD** from a **developmental tool for individuals** to a **strategic tool for the care delivery unit**".

Ronald M. Cervero .International Journal of Lifelong Education, 2017

4. CPD value proposition Team competence

- **Distributed knowledge**

Collaborative work as 'joint cognitive accomplishment not attributable to any individual'
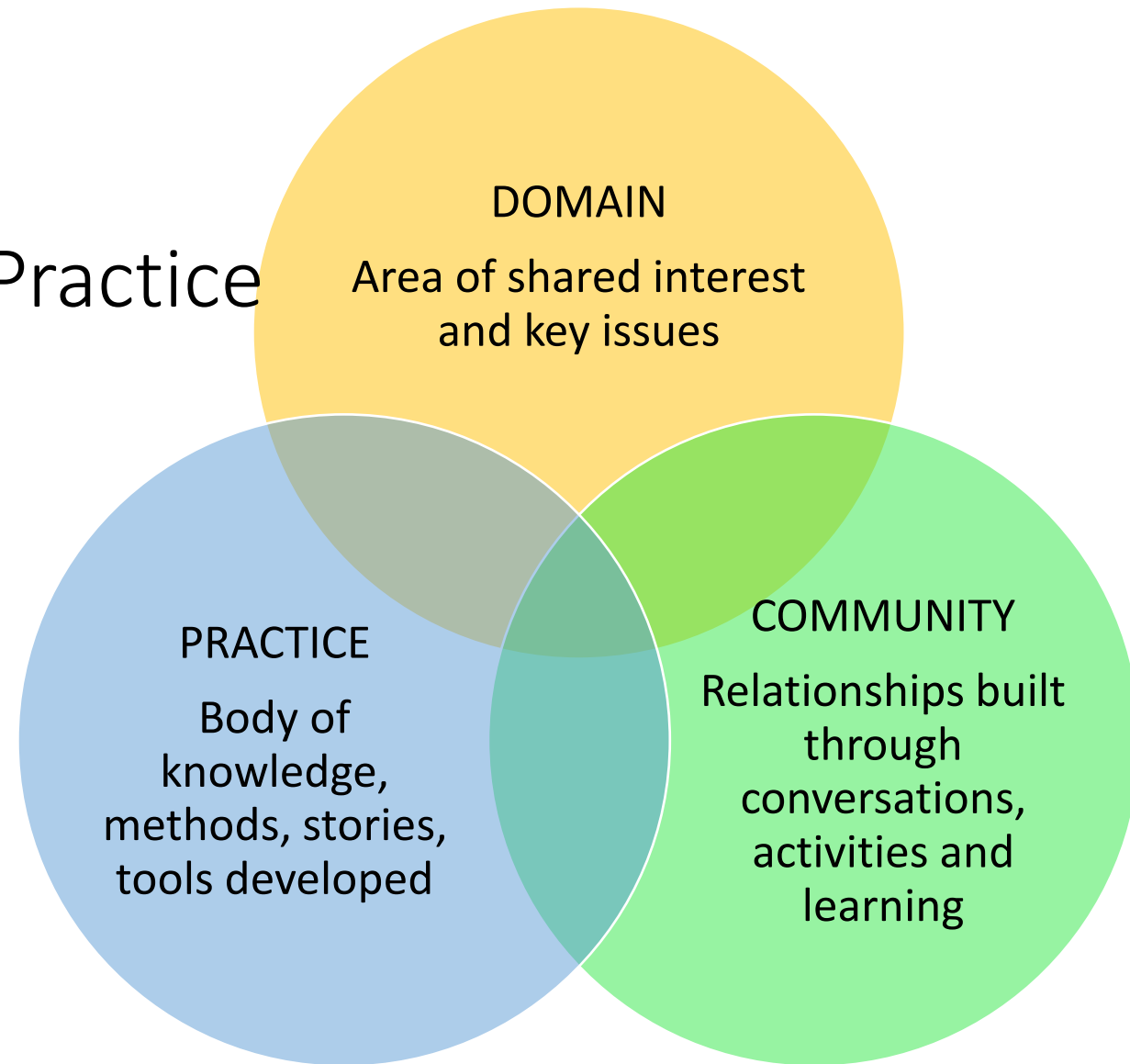
Hutchins, Perspectives on Socially Shared Cognition 1991

- **Individual knowledge**

"medical education as a process that moves novices from a state of incompetence, to one of competence"

Hodges, Medical Teacher 2006
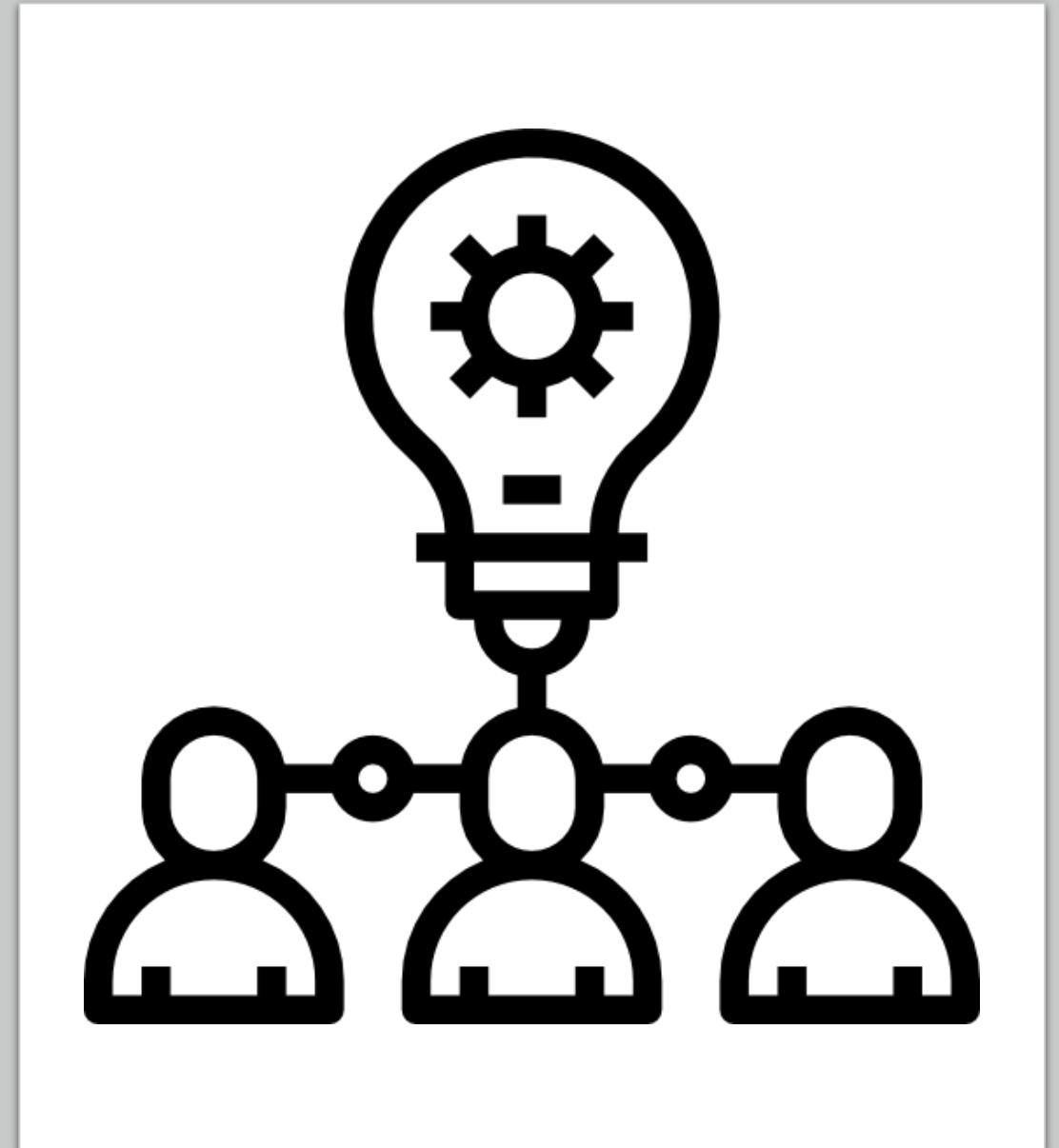
4. CPD value proposition
Medicine as a Community of Practice

DOMAIN
Area of shared interest and key issues

COMMUNITY
Relationships built through conversations, activities and learning

PRACTICE
Body of knowledge, methods, stories, tools developed

Lave J and Wenger, E   Cambridge publications. 1991;
Cruess RL, Cruess SR, Steinert Y,. Acad Med. 2018

4. CPD value proposition

Workplace Learning through collaboration

Professionals can learn and facilitate others' learning.

Making this more explicit can improve the WPL.

Managers should ensure protected learning time, enhance communication and casual encounters.

Healthcare educators should be aware that discussions, asking questions and feedback during work provides affordances for learning.

Curricula should emphasize the importance of this kind of learning

Researchers should further investigation on teams and organizational learning

Fien Mertens, Esther de Groot et al. BEME Guide No. 46, Medical Teacher, 2017

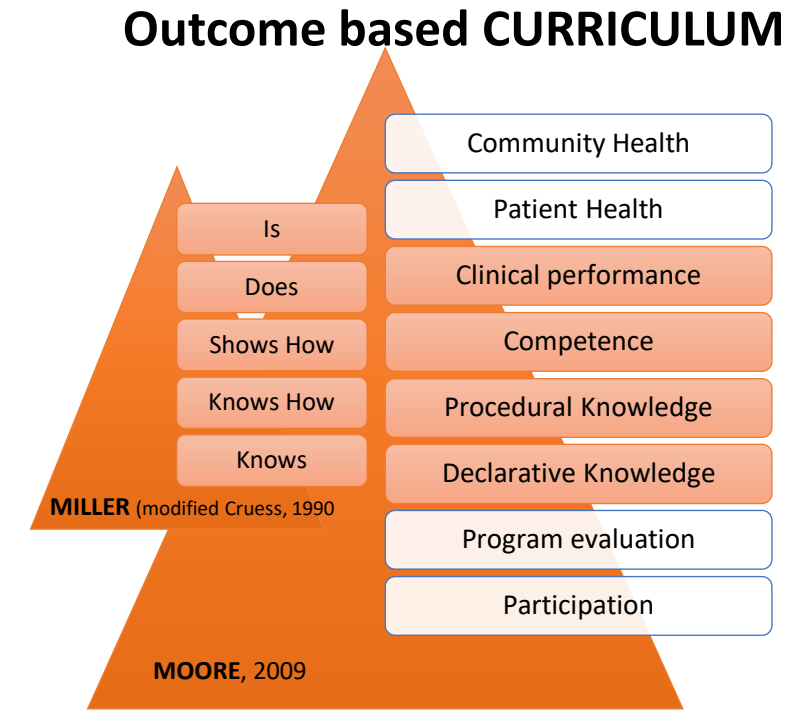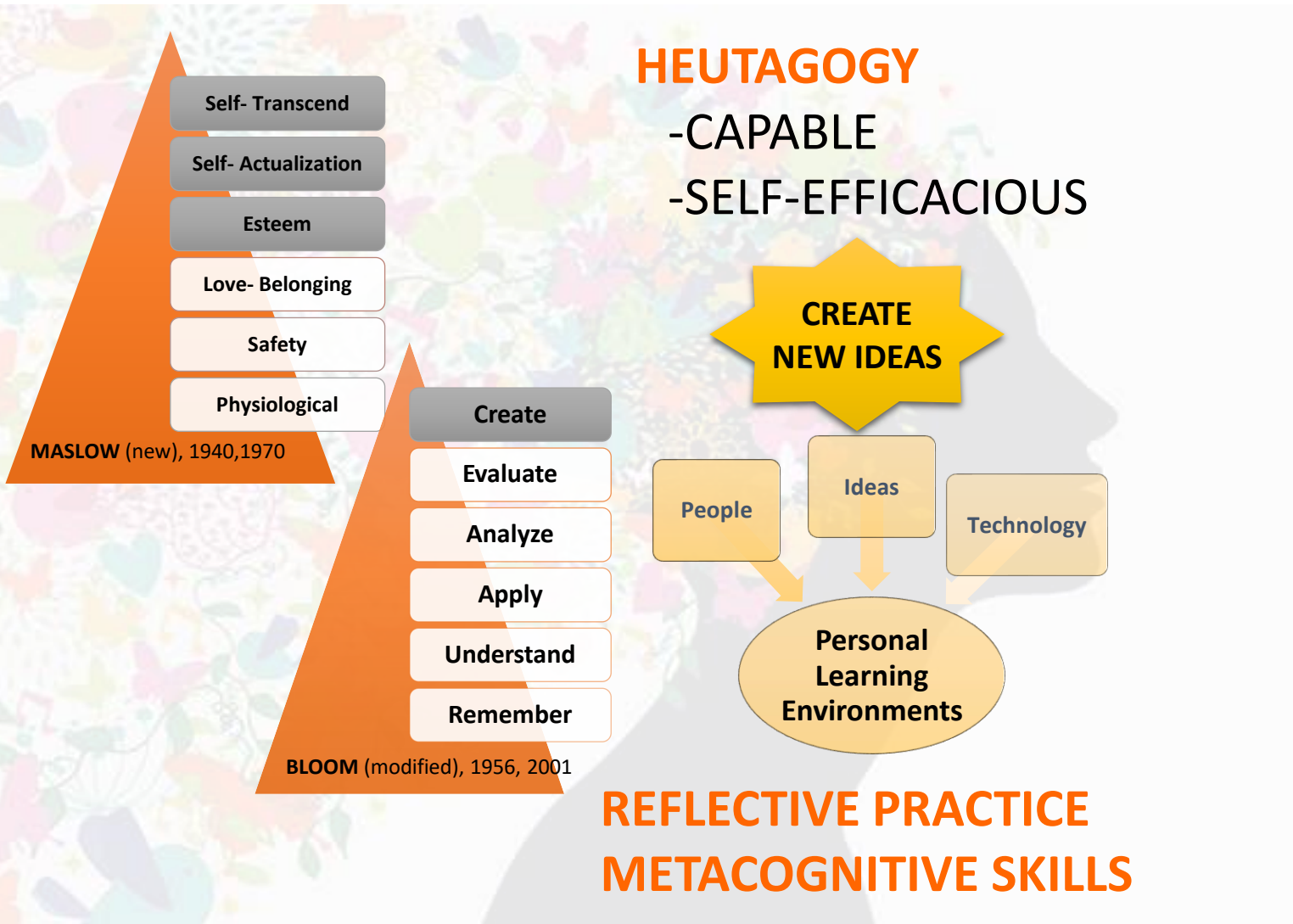# 5. Personal Learning Environments
Self –Determined Learner

Step
1.Lifelong Learning
2. Evolution
3. Systems based CPD
4. CPD value creation
5. Personal Learning Environments (PLE)
6. Adaptive expertise
7. Evidence / Experience CPD
8. Science implementation in CPD

Outcome based CURRICULUM

MILLER (amended), 1990

| Is |
| Does |
| Shows How |
| Knows How |
| Knows |

| Community Health |
| Patient Health |
| Clinical performance |
| Competence |
| Procedural Knowledge |
| Declarative Knowledge |
| Program evaluation |
| Participation |

MOORE, 2009

5. Personal Learning Environments

Self –Determined Learner

Outcome based CURRICULUM

HEUTAGOGY
-CAPABLE
-SELF-EFFICACIOUS

Self- Transcend

Self- Actualization

Esteem

Love- Belonging

Safety

Physiological

MASLOW (new), 1940,1970

CREATE NEW IDEAS

Create

Evaluate

Analyze

Apply

Understand

Remember

BLOOM (modified), 1956, 2001

People

Ideas

Technology

Personal Learning Environments

REFLECTIVE PRACTICE
METACOGNITIVE SKILLS

| Community Health |
| Patient Health |
| Clinical performance |
| Competence |
| Procedural Knowledge |
| Declarative Knowledge |
| Program evaluation |
| Participation |

Is

Does

Shows How

Knows How

Knows

MILLER (modified Cruess, 1990

MOORE, 2009

26

5. Personal Learning Environments

Self –Determined Learner

Outcome based CURRICULUM

HEUTAGOGY
- CAPABLE
- SELF-EFFICACIOUS

MASLOW (new), 1940,1970
- Self- Transcend
- Self- Actualization
- Esteem
- Love- Belonging
- Safety
- Physiological

BLOOM (modified), 1956, 2001
- Create
- Evaluate
- Analyze
- Apply
- Understand
- Remember

CREATE NEW IDEAS

People

Ideas

Technology

Personal Learning Environments

External assessment

Self assessment

VALUE CREATION in CPD ACCOUNTABILITY

MILLER (modified Cruess, 1990)
- Is
- Does
- Shows How
- Knows How
- Knows

- Community Health
- Patient Health
- Clinical performance
- Competence
- Procedural Knowledge
- Declarative Knowledge

MOORE, 2009
- Program evaluation
- Participation

REFLECTIVE PRACTICE
METACOGNITIVE SKILLS

27

Connectivism

Learning is about **building relationships**

Networking and co-creation is part of **professional practice**

Knowledge is distributed across a **network**.

Zygomatic learning, critical thinking and innovation are nurtured

Parbosingh J. , et. al. J Contin Educ Health Prof. 2011
Siemens G and S Downes S. Knowledge, Learning, Community , 2021

6. Developing Adaptive Expertise
Practice data as a source to guide lifelong learning

1. Lifelong Learning

2. Evolution

3. Systems-based CPD

4. CPD value proposition

5. Personal Learning Environments

6. Adaptive expertise

7. Evidence / Experience CPD

8. Science Implementation in CPD

Planning (Goal + Data)

Learning (LLL)

Adjusting (Practice Change)

Assessment (Data)

Cutrer WB et al. Acad Med 2016;
Cutrer WB et al. Med Teach 2018
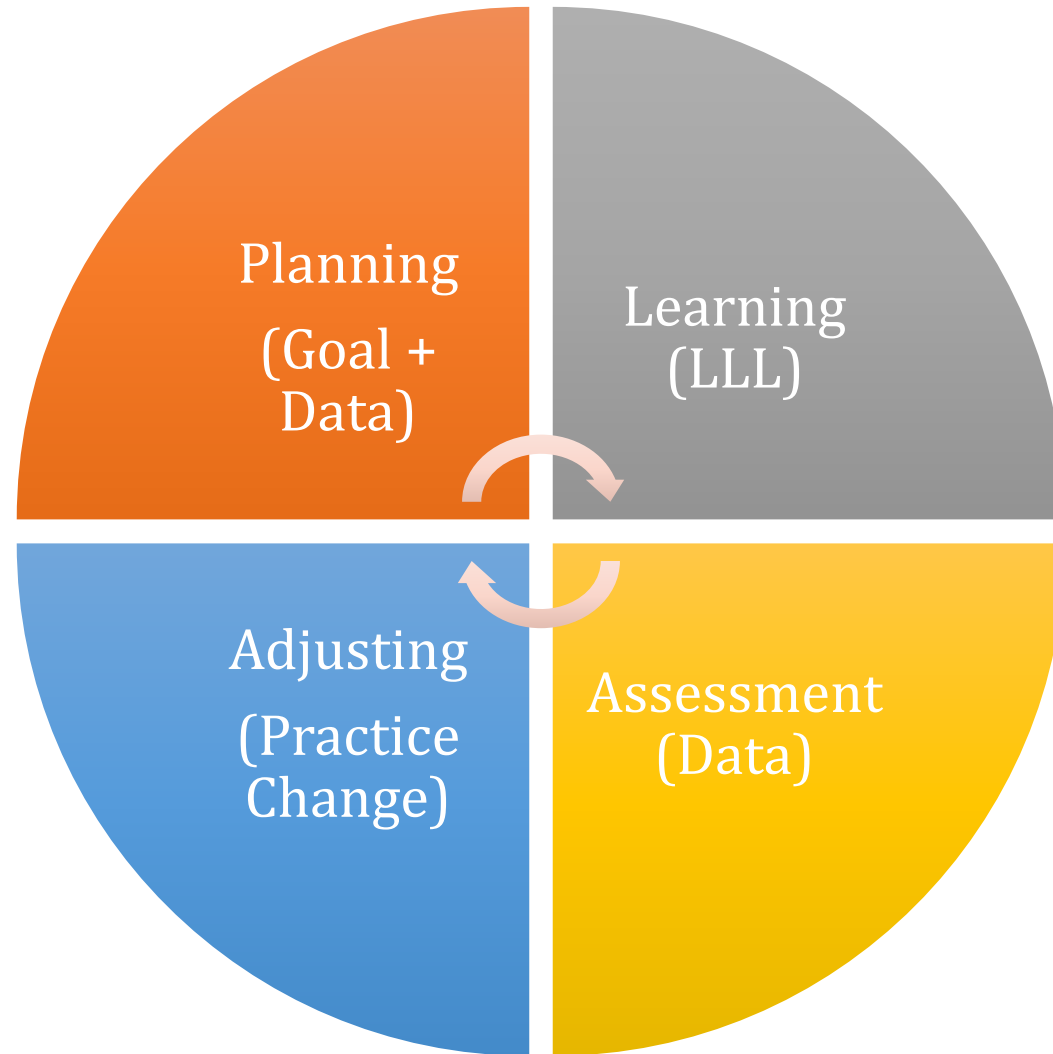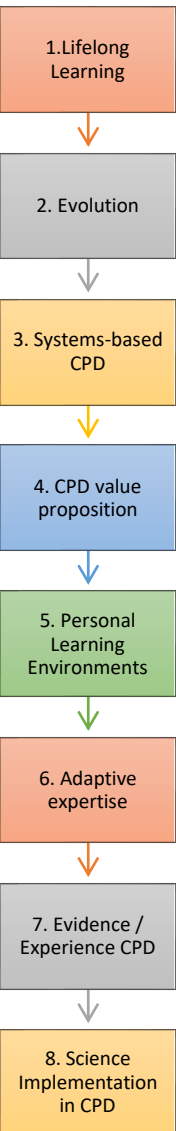
6. Developing Adaptive Expertise
Inside of a mind of an adaptive learner

Cutrer, W. B., Miller, B., Pusic, M. V., Mejicano, G., Mangrulkar, R. S., Gruppen, L. D., … Moore, D. E. (2017). Academic Medicine
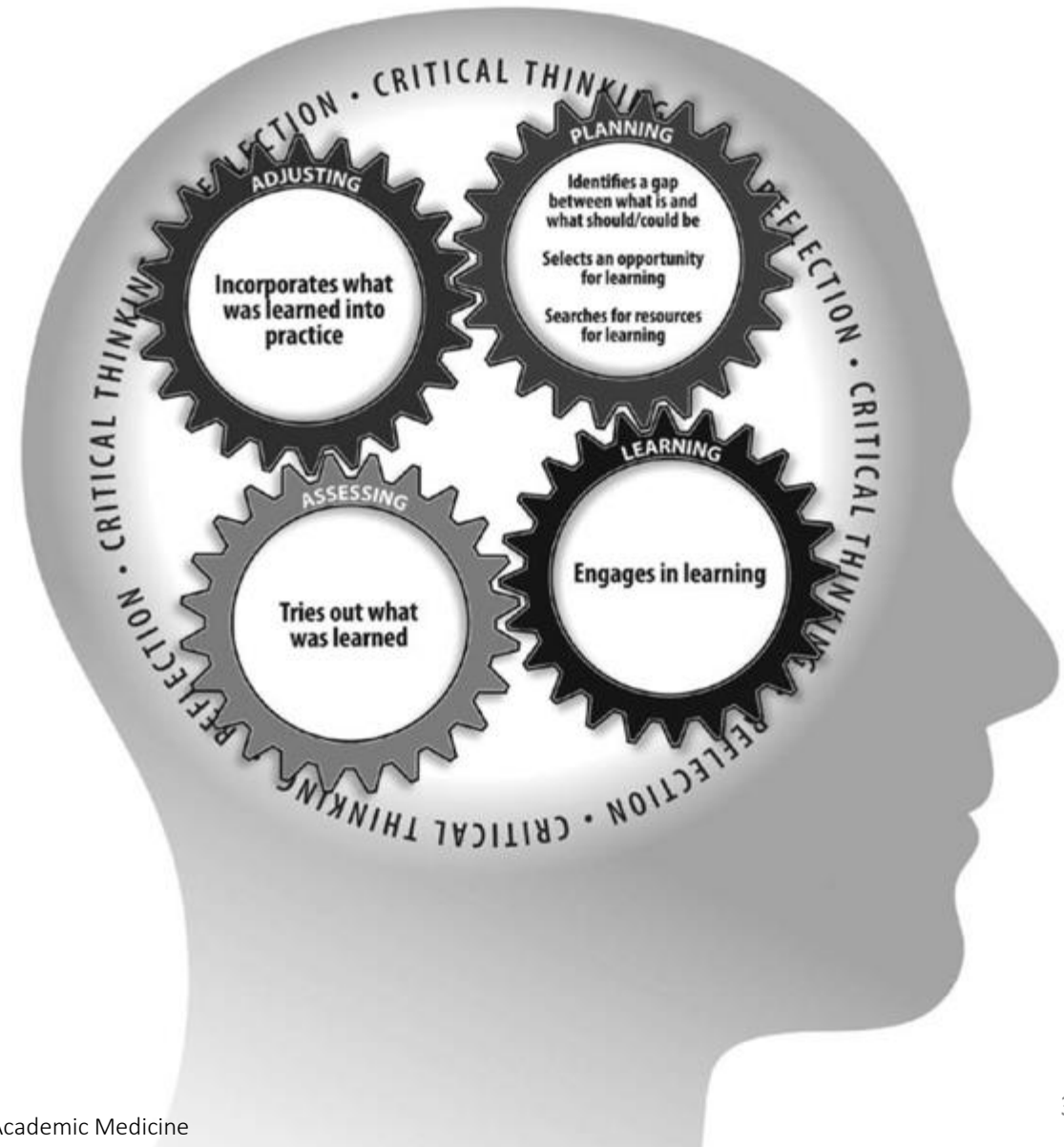
6. Developing Adaptive Expertise for Lifelong Learning

- The capacity to
  - learn new information
  - use resources effectively and innovatively
  - invent new strategies for learning and problem solving in practice
  - seeing "old" in the "new" and reconceptualizing
  - learning as an experience

- Favored learning strategies
  - **Active learning**
  - **Guided discovery**
  - **Debriefing and reflection**

Mylopoulos M, et al, Medical education. 2016

7. Evidence Based CPD curricula
CPD learning experiences should:

1.Lifelong Learning	
2. Evolution	
3. Systems-based CPD	
4. CPD value proposition	
5. Personal Learning Environments	
6. Adaptive expertise	
7. Evidence / Experience CPD	
8. Science Implementation in CPD	

Be based on Needs assessment

Include Active, Integrated and Case-based learning

Include Multiple Exposures

Address barriers to change

Invite to establish commitments to change

Be multimodal

Consider Simulation Based Training

Davis D, *JAMA*. 1999
Grimshaw et al. Quality and Safety in Health Care 2003
Marinopoulos SS, al. *Evid Rep Technol Assess (Full Rep)*. 2007
Raza A, Coomarasamy A, Khan KS *Arch Gynecol Obstet*. 2009,
Forsetlund L, et al. *Cochrane Database Syst Rev*. 2009
Cervero and Gaines. JHCEP. 2015
Dave Davis DA, McMahon GT. *Med Teach*. 2018

7. Evidence Based CPD curricula

CPD learning experiences should:

Combine formal with informal learning

Incorporate eLearning

Address learning cost considerations
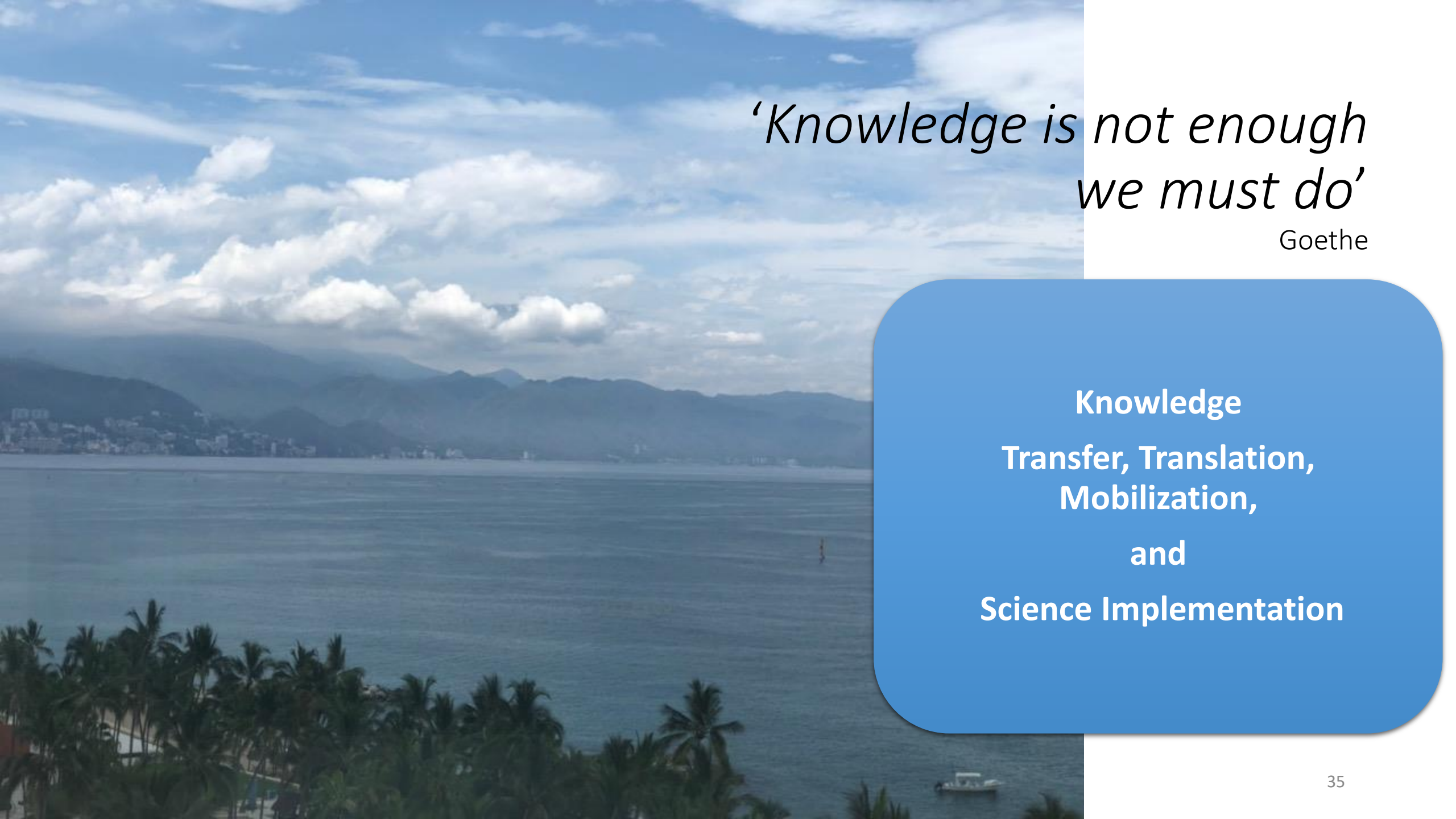
Consider CPD from a wider perspective and offer creative approaches to advance lifelong learning

7. Evidence Based CPD curricula

Embed CPD and lifelong learning activities in Practice

- Prioritize **social learning activities**

- Implement **strategies for developing lifelong learning**

- Develop data **sources to tailor** to **individual learning needs**

- **Enable reflective lifelong learning** and **quality improvement**

'Knowledge is not enough we must do'

Goethe

Knowledge

Transfer, Translation, Mobilization,

and

Science Implementation

Bridging research into practice

Exploring the research-practice interface in health professions education

Knowledge Transfer

SHARING tangible intellectual property and expertise between academia and the non-academic community
Tacit knowledge becomes explicit

Knowledge Translation

A dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound APPLICATION of knowledge to improve health care and strengthen the health care system.

Ng SL, Baker LR, Leslie K.. *Perspect Med Educ*. 2017
Curtis K, et al. *J Clin Nurs*.
Ian D. Graham et al . JCHPE 2006

Bridging research into practice
Exploring the research-practice interface in health professions education

Knowledge Mobilization

Faculty Development

    Creates

        Relational spaces for educators

        Knowledge

            mobilization

            mobilizers

    Requires acceptance of multiple sources of knowledge

        Practice-based

        Professional socialization

        Interactional, non-hierarchical relationship with research knowledge

Ng SL, Baker LR, Leslie K.. *Perspect Med Educ*. 2017

8. Science Implementation

- 1. Lifelong Learning
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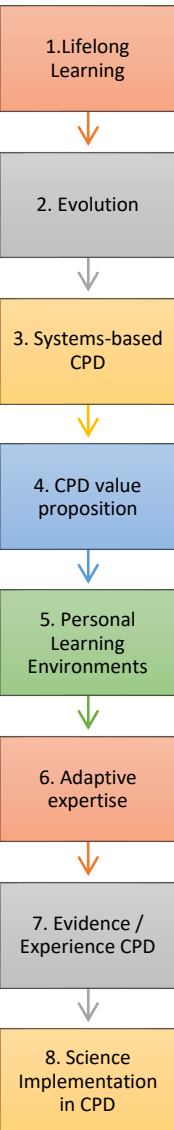
Should be **weaved into curricula** to improve competence, performance, and patient outcomes

Helps meet **accreditation, credentialing** and **research funding** requirements

Involve **changes in organizational culture**
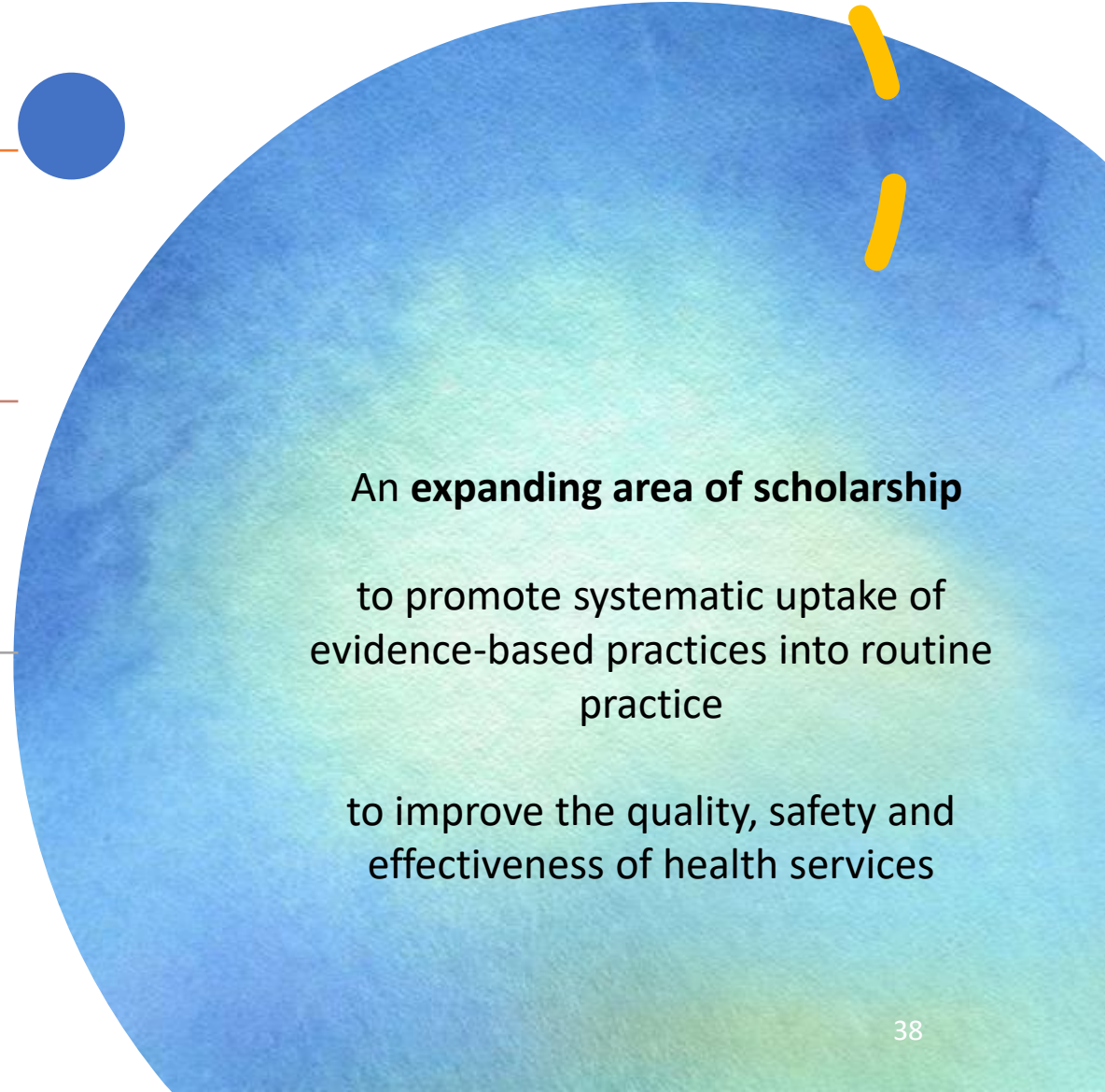
An **expanding area of scholarship**

to promote systematic uptake of evidence-based practices into routine practice

to improve the quality, safety and effectiveness of health services

David W. Price, et al. What are the implications Medical Education Online, 2015

8. Science Implementation
Quality Improvement tools

INDIVIDUAL LEARNER

Theories of Change
PRECEED /PROCEED

Green LW, Kreuter MW. Health program planning: an educational and ecological approach. 4th ed. New York: McGraw- Hill Higher Education; 2005
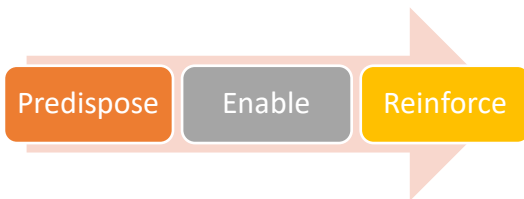
TEAMS

Competencies
- Collaboration
- Shared workload
- Mutual performance accountability
- Shared leadership

Interprofessional Education Collaborative Expert Panel. Core competencies for interprofessional collaborative practice: report of an expert panel. 2011. Available from: https://www.aamc.org/download/186750/data/core_competencies.pdf [cited 9 October 2014]

ORGANIZATIONS

Model
Plan-Do- Study-Adjust

Berwick DM. Developing and testing changes in delivery of care. Ann Intern Med 1998; 128: 6516.

David W. Price et al. Medical Education Online, 2015

8. Science Implementation CPD Systems-based

Workplace learning (WL)

From unconscious, unstructured WL

to DELIBERATE STRUCTURED, COLLABORATIVE WL

Collective Competence

From the individual

to TEAM COMPETENCE

Complexity & Systems Theory

From informal and opportunistic learning interaction of individuals, contexts

to MORE EXPLICIT LEARNING OPPORTUNITIES

Science Implementation

Translating new knowledge

into COMPLEXITY OF PRACTICE

Sargeant et al. Med Educ. 2018

Wrapping up!

Challenges, Research, and Innovation areas

Challenges

- A widely accepted **definition of lifelong learning**
- **CPD tools** to demonstrate outcomes and accountability
- Best **CPD practices:** EBM, Big Data, EHR
- **Faculty Development** in CPD contributing disciplines
- CPD **cost-effectiveness**
- **CPD -workplace – community health** alignment

J Sargeant, V Curran, K Eva, J Parboosing, I Silver. Future of Medical Education in Canada (FMEC)2019;

Filipe HP, Mack HG, Golnik KC.. Ann Eye Sci 2017

Research
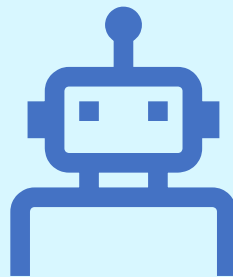
- Adopting a common framework **theory informed CPD**

- Assessing **outcomes seamlessly** to produce **evidence-based CPD** and improve effectiveness

- Enhancing **CPD as a profession** by developing **CPD educators skilled** in:
  - Learning theories, practice implementation and evaluation
  - Other contributing disciplines and fields
  - Preparing lifelong learners to develop adaptive expertise and how to
    - Inform instruction design
    - Identify measures of behaviors
    - Address sociocultural barriers

Mylopoulos M, et al,, THE CLINICAL TEACHER 2015; 12: 1–6

Filipe HP, Mack HG, Golnik KC.. Ann Eye Sci 2017

Innovations

Study the impact of **virtual learning**

Develop **new roles and ways of thinking** in complex adaptive systems

Learn from **other disciplines** beyond medicine

Form a **global perspective** (online learning, climate change)

Implement **wellness initiatives** for health professionals

In
Summary

Lifelong Learning, CPD, and Professionalism

Systems based- CPD

Evidence Based CPD

CE KT PS QI

Patient involvement

CPD Educators

Curricula Design

Workplace learning Team Competence

Self-determined Learning

Adaptive expertise

Systems Complexity

Outcome based CPD

Evolution CME to CPD to CBCPD

CPD Value Creation and Organizations

Science Implementation in CPD

Faculty Development Knowledge Transfer, Translation, Mobilization

Challenges

Research

Innovation

Thank You!

hpriorfilipe@gmail.com

Sargeant, V Curran, K Eva, J Parboosing, I Silver. Future of Medical Education in Canada (FMEC). CPD and the lifelong learning continuum for physicians. Theme 5. 2019

https://www.cpdcoalition.ca/wp-content/uploads/2020/04/FMEC-CPD_Theme_5_EN.pd

Helena P. Filipe, Karl C. Golnik & Heather G. Mack (2018): CPD? What happened to CME? CME and beyond, Medical Teacher, DOI: 10.1080/0142159X.2018.1471200

Filipe HP, Mack HG, Golnik KC. Continuing professional development: progress beyond continuing medical education. Ann Eye Sci 2017;2:46. http://aes.amegroups.com/article/view/3762/html

David W. Price, David A. Davis, and Gary L. Filerman "Systems-Integrated CME": The Implementation and Outcomes Imperative for Continuing Medical Education in the Learning Health Care Enterprise. October 4, 2021 | Discussion Paper

Kitto S, Goldman J, Etchells E, et al. Quality improvement, patient safety, and continuing education: a qualitative study of the current boundaries and opportunities for collaboration between these domains. *Acad Med*. 2015;90(2):240-245. doi:10.1097/ACM.000000000000059

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Objectives

By the end of the program participants will be better able to:

I know
- Describe how to **conduct a needs assessment** based on a gap analysis
- Describe how to **write goals** and **objectives**
- Select the most appropriate **educational strategies** (methods&tools)
- Describe the concept and the principles of **assessment and evaluation**

I do
- Apply the **adult learning principles** to teach effectively
- **Draft** an efficient simulation **session/program**

I feel
- Appraise the **role of reflection in simulation-based learning**

51

https://learn.cybersight.org/#/catalog
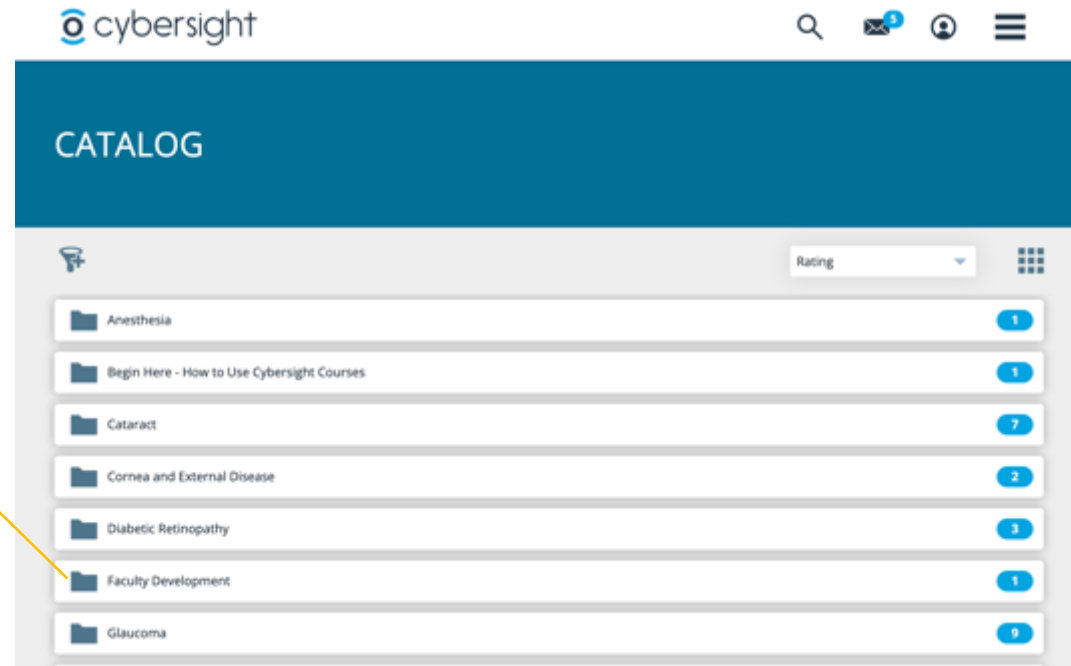
...FacDev on Curriculum Design

Congolese Society of Ophthalmology

Mozambican College of Ophthalmology

- Dyadic mentoring

- Group Mentoring

  o Group facilitation

  o Peer mentoring

CSO

| Pretest 78% | Posttest 85% |

Survey results (counts of "Agree" in gray and "Strongly agree" in yellow):

- The module was orgnized to allow learners to participate — 3 | 11
- The module's workload was appropriate — 1 | 13
- The module was organized and well planned — 3 | 11
- The module's learning goal and objectives were clear — 2 | 12
- Facilitators were available and useful — 4 | 10
- Facilitators effectively used time duringthe webinar — 2 | 12
- Facilitators stimulated learners' engagegment — 3 | 11
- Presentations were clear and organized — 2 | 12
- Facilitators were effective lecturers — 7 | 7

Legend: Strongly Disagree | Disagree | Agree | Strongly agree

54

Pretest	Posttest
67%	87%

Pretest	Posttest
58%	72%

P<0.01

Two pilot mentor-assisted programs
One Self-paced mode

- Well received by the ophthalmologists' educators

- Competence improvement in curriculum design applied to SBE

- Formation of a virtual community of ophthalmologists' educators

- Technology can support CoPs and assist faculty development in under-resourced settings.

- Group-mentoring can play a key part in the learning process including the establishment of longitudinal educational project

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In Summary
Better clinical outcomes may be achieved through CPD by:

- **Involving patients in the design and delivery of learning activities**
- **Applying principles of adaptive expertise to the design of lifelong learning**
- Assessing beyond knowledge to support learners
- **Integrating QI and CBME into CPD**
- **Building scholarship and leadership capacity through effective CPD**
- **Measuring outcomes at the individual, organization, community and systems level**
- Be a documented process
- **Integrate point-of-care services into web-based CME programs to better meet the information needs of clinicians during practice**
- **Be self-directed and competency-based by recognising and incentivising the usage point of care services as CME activities**
- **Focus on learning from experience, reflective learning and review**
- **Help allow the formulation of development goals and objectives**
- **Include both formal and informal learning**

Acknowledging the worldwide **variety of CPD/CME systems** and

General agreement on CPD/CME best practices

ICO created an **online manual** encompassing the **various stakeholders' perspectives** and

addressing the **foundational concepts, principles and guidelines**

ICO Guide to Effective CPD/CME

Edited by:
Helena P. Filipe, Heather G. Mack, Eduardo A. Mayorga, and Karl C. Golnik

Access at: www.icoph.org/ICO-CPD-CME.html

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