



**VETERINARY CAPACITY BUILDING  
in the context of the «One Health»**

Con il contributo della  **Regione Emilia-Romagna**



CUP n. E17D20000040003

## **PART 2**

# **Capacity Development For a Sustainable Future**

## **SESSION 1**

**Applying the Instructional Systems Approach  
To Training and Education**

**Integrating Ecocentric Values and Principles Across Curricula  
Learning Outcomes that Matter**

**From early childhood to advanced education !**

learning for sustainability

learning for a better world

sustainable development education

global citizenship

# Re-thinking sustainability

## Shifting from:

1. human-centrism **to** eco-centrism
2. subject fragmentation **to** disciplinary integration
3. knowledge transfer **to** knowledge discovery
4. intervention **to** prevention and a future consciousness
5. individualism **to** 'learning from and with others'
6. those **who 'have' to** those who 'have not'
7. thinking globally **to** acting locally
8. profit margins **to** self-fulfilment and '*doing something good*'
9. self-interests, ambition, power **to** understanding, compassion and truth"

Please select  
your top priority  
transformation  
(number) and  
place in chat box.

# **Integrating Ecocentric Values and Principles Across Curricula**





**International**  
**One Health for One Planet Education Initiative**  
**(IHOPE\*)**

**2021-2023**

**Consortia Planning Teams**  
**Africa, Asia, Americas, Europe, Middle East,**  
**Oceania**



**SDGs**



**Regional Universities & Affiliations**

**MAIN AIM**

**MOBILISE SOCIETY TO ADOPT THE ONE HEALTH & WELLBEING CONCEPT (OHW) & THE UN-2030 SUSTAINABLE DEVELOPMENT GOALS**

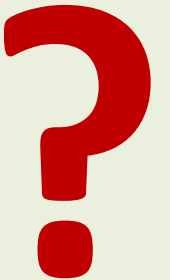
**VALUES and PRINCIPLES**

- “interdependency of all life in a shared environment” ([ONE HEALTH & WELLBEING CONCEPT](#))
- “compassion for the sanctity of all life” ([EARTH CHARTER](#))
- “a more just, sustainable and peaceful world” ([UN-2030 SDGs](#))
- “multiple sectors, disciplines and communities at varying levels of society” ([ONE HEALTH HIGH LEVEL EXPERT PANEL](#))

*Further Information: George Lueddeke PhD, Global Lead*  
[glueddeke@aol.com](mailto:glueddeke@aol.com)

**“Cultivating an active care for the world and with those with whom we share it.”**  
**UNESCO**

**TO WHAT EXTENT DOES  
THE PROGRAMME, COURSE, MODULE  
INTEGRATE ASPECTS RELATING TO**



# 1. One Health (and Wellbeing)

in the 21<sup>st</sup> Century

INTERDEPENDENCE OF HUMANS, ANIMALS,  
PLANTS IN A SHARED ENVIRONMENT

NEW SOCIETAL NARRATIVE

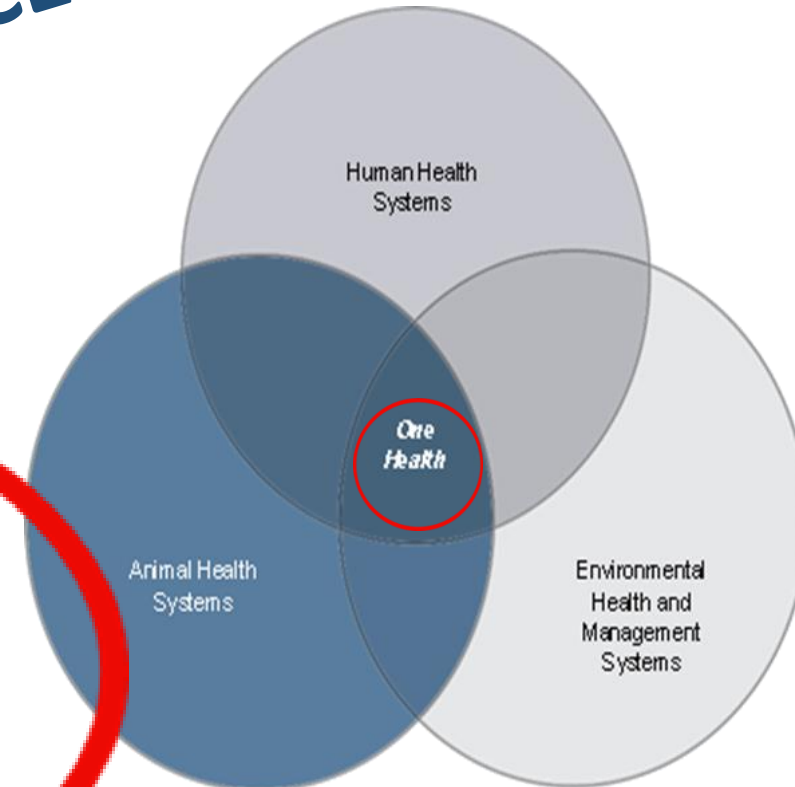
Socio-Economic, Political, Environmental

## Approach

**All SECTORS & DISCIPLINES**

Collaboration  
Root Causes  
Prevention  
Capacity-building

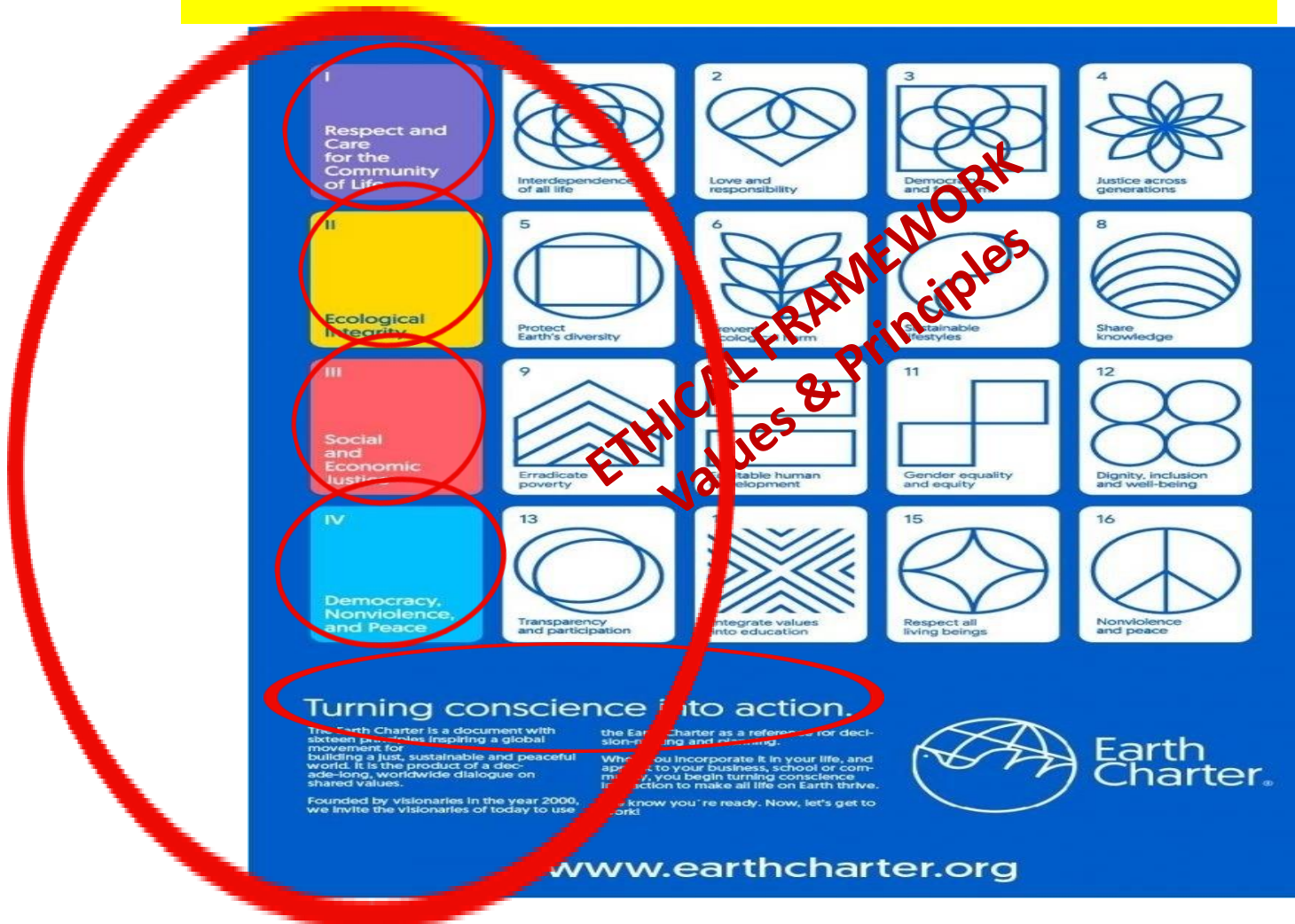
WORLD BANK ONE HEALTH  
OPERATIONAL FRAMEWORK



G7 and G20 summits.....

FOUR INTERCONNECTED CONCEPTS TO CONSIDER

## 2. The Earth Charter....launched 2000



### 3. UN-2030 Sustainable Development Goals



**AIMS**  
END POVERTY, PROTECT  
THE PLANET, PEACE  
AND PROSPERITY  
BY 2030.

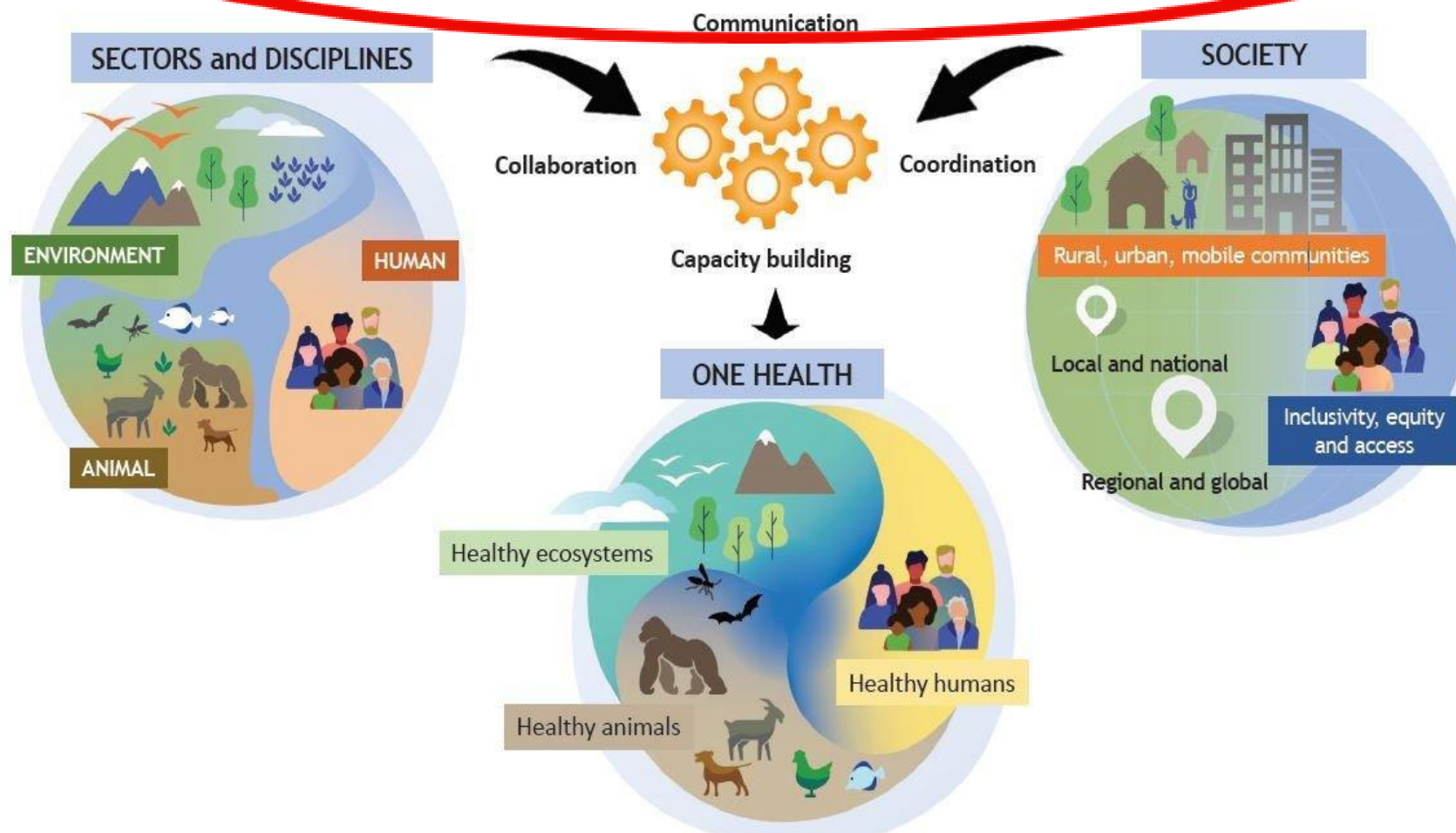
- adopted by 193 UN Member States on 25 September 2015
- 17 SDGs, 169 targets, 225 indicators
- **Slow uptake-**  
**major reversing –**  
**Covid-19!**
- **Ecocentrism?**



4.

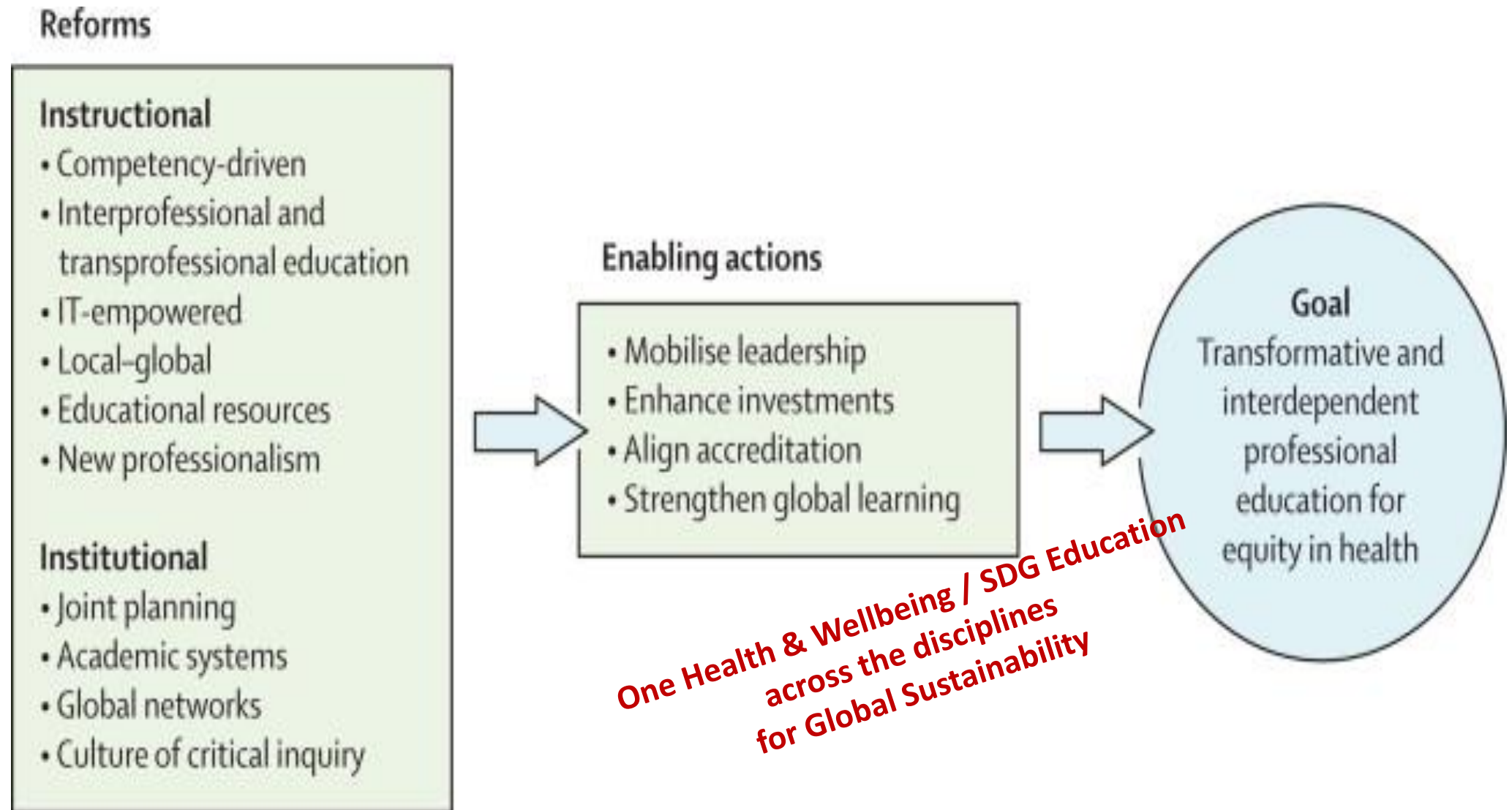
One Health High Level Expert Panel (OHHLEP- OIE, FAO, WHO, UNEP)

**“One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people , animals, and ecosystems.”**

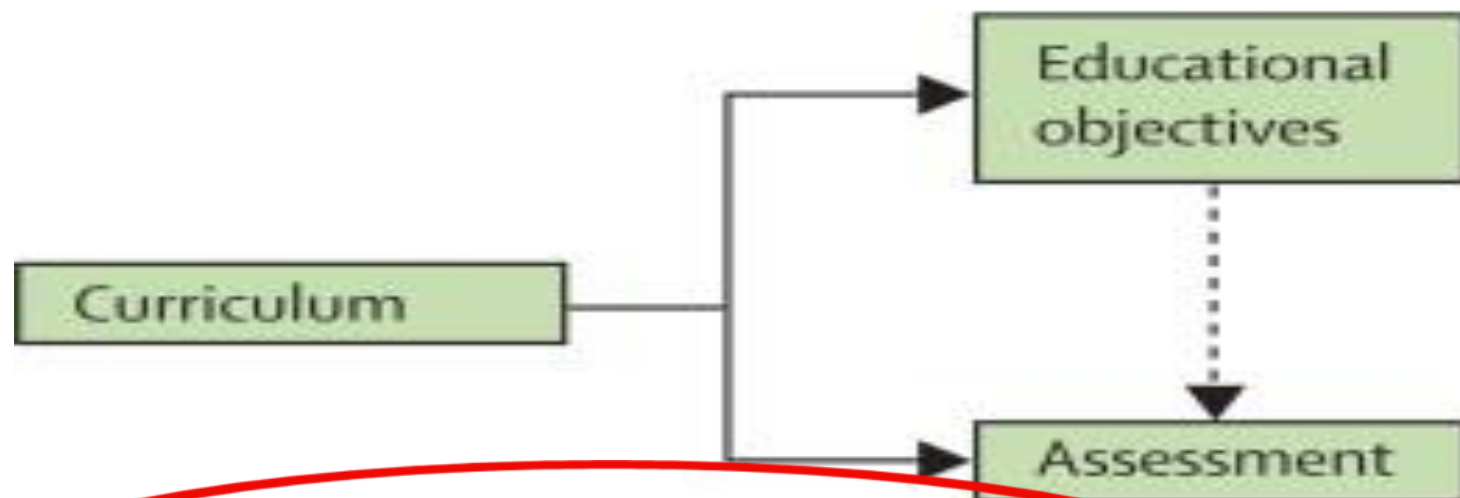


# SYSTEM REFORM

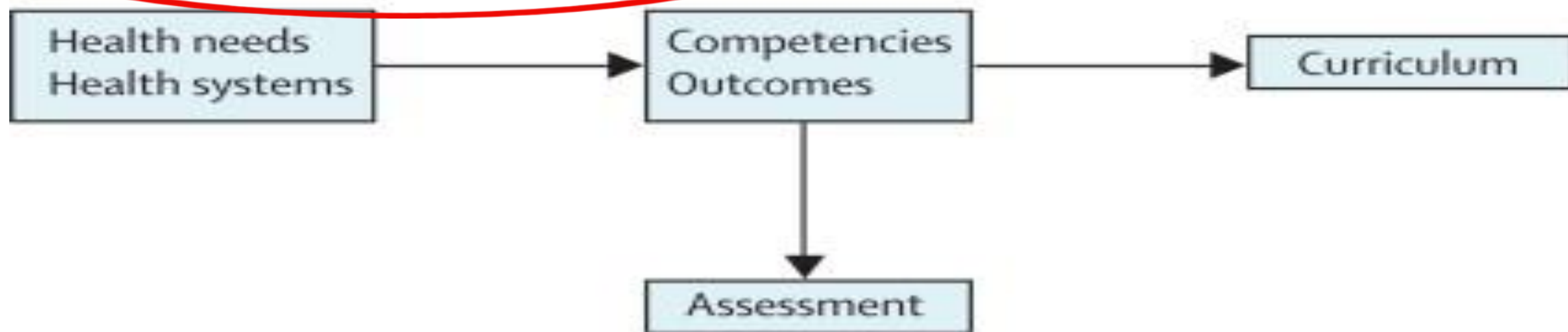




## Traditional model



## Competency-based education model





*Need to start at the top!*

Example: higher education/university mission statement for the 21st century ?

### Mission/ Vision Statements

#### From Human-Centrism

##### Mission, Vision and Values

Our mission is to improve people's health and wellbeing through outstanding education, research and knowledge exchange.

##### Our Vision

Our vision is to be global leaders in education and research. We are at the forefront of biomedical, clinical and applied research that shapes the future of healthcare. We nurture talent, ambition, and curiosity in an inclusive culture that embraces multi-professionalism and team science.

##### Our Values

These values will serve as the basis for the School of Medicine to fulfil its mission and achieve its vision for the future in education and research:

### Mission/ Vision Statements

#### To ECOCENTRISM

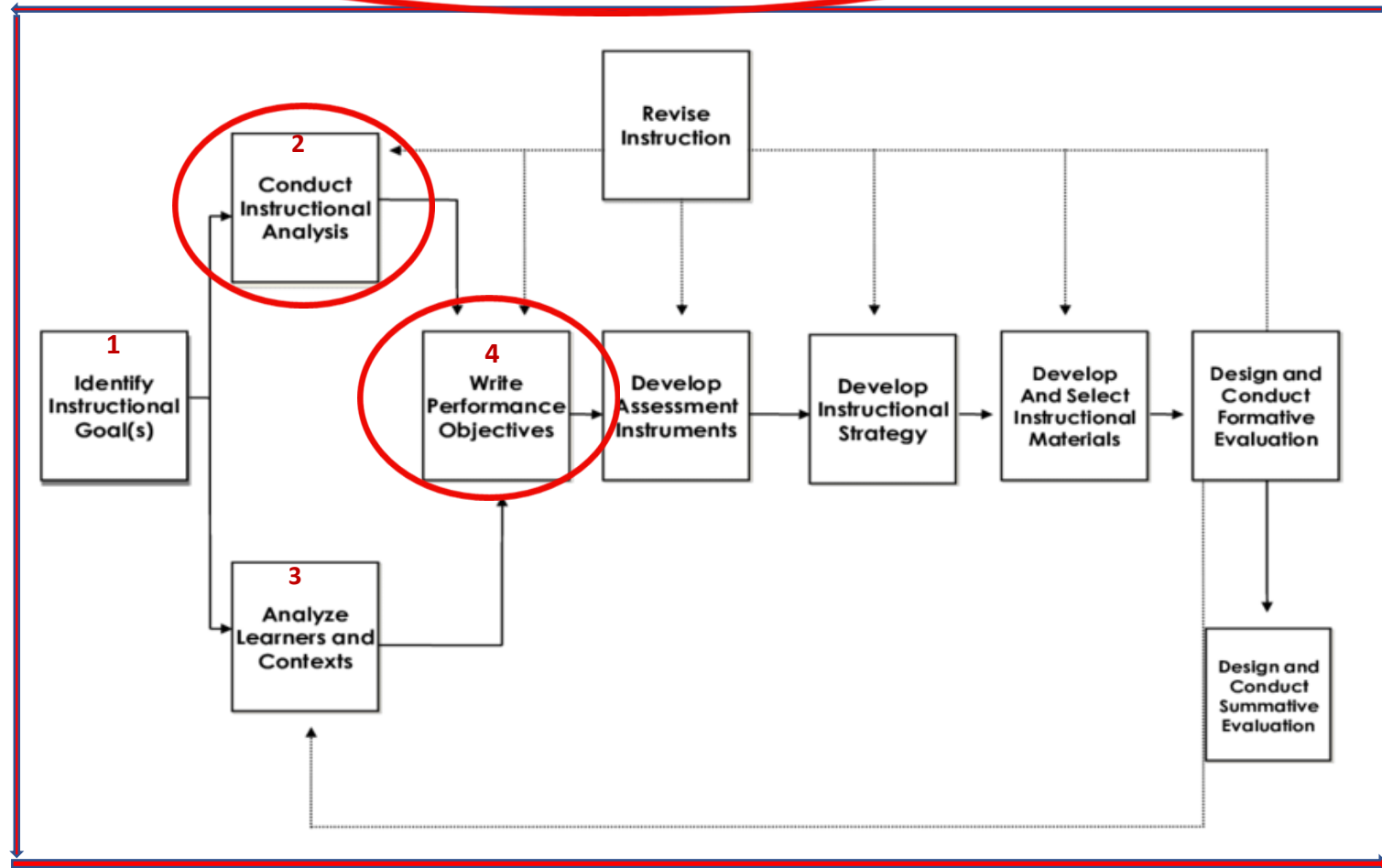
- The mission of XXX is to promote and support national, regional and global sustainability through education, research and outreach engagement that respects the life of all species and the environment.
- This mission is realized within a vision of *One Health and Wellbeing* that recognises the interdependence of all life: humans, non-human animals, plants in a shared environment underpinning the UN *Transformative Vision and Sustainable Development Goals* (SDGs) to create a more just, sustainable and peaceful world" (UN Global Goals).
- These aspirations are achieved through the implementation of "cutting edge" approaches to collaborative, learner-centred problem/values-based education and inter/ transdisciplinary research alongside values and principles that demonstrate an active care for the world and with whom we share it.

# **THE INSTRUCTIONAL SYSTEMS APPROACH TO TRAINING AND EDUCATION**



## Applying the Instructional Systems Approach To Training and Education

**2**  
What do learners  
do I when they  
have this competency?  
(Basic/Novice/Expert)





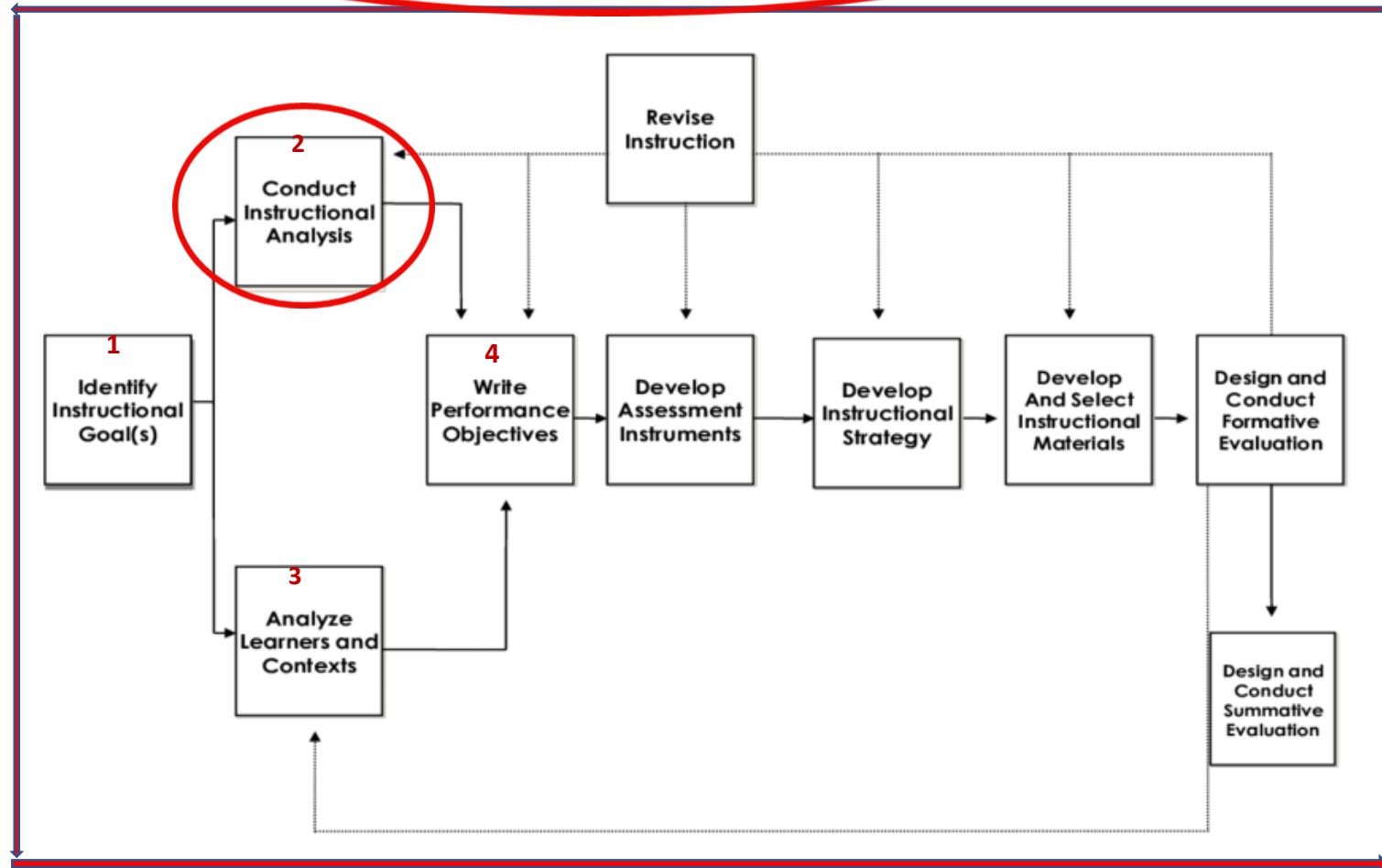
**LEARNING OUTCOMES THAT MATTER**





## Applying the Instructional Systems Approach To Training and Education

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Dick, Walter, Lou Carey, and James O. Carey (2005) [1978]. [The Systematic Design of Instruction](#) (6th ed.). Allyn & Bacon. pp. 1–12. [ISBN 0-205-41274-2](#).

^ Ed Forest. ["Dick and Carey Instructional Model"](#). Archived from the original on 2015-11-24.

# Designing A Curriculum (DACUM APPROACH)

**OCCUPATIONAL PROFILE**  
for the  
Materials Testing Technician Program

**CURRICULUM PLANNING TOOL**

**MACs → IACs → Modules**

- Learning Outcomes
- Methods
- Resources
- Complexity/Difficulty (1-5)
- Frequency (1-5)
- Time Emphasis (L, M, H)
- Trainee Progress Document (self and trainer)

**Accreditation**

**Employment Application**

**Major Areas of Competency (MACs)**

**IACs**

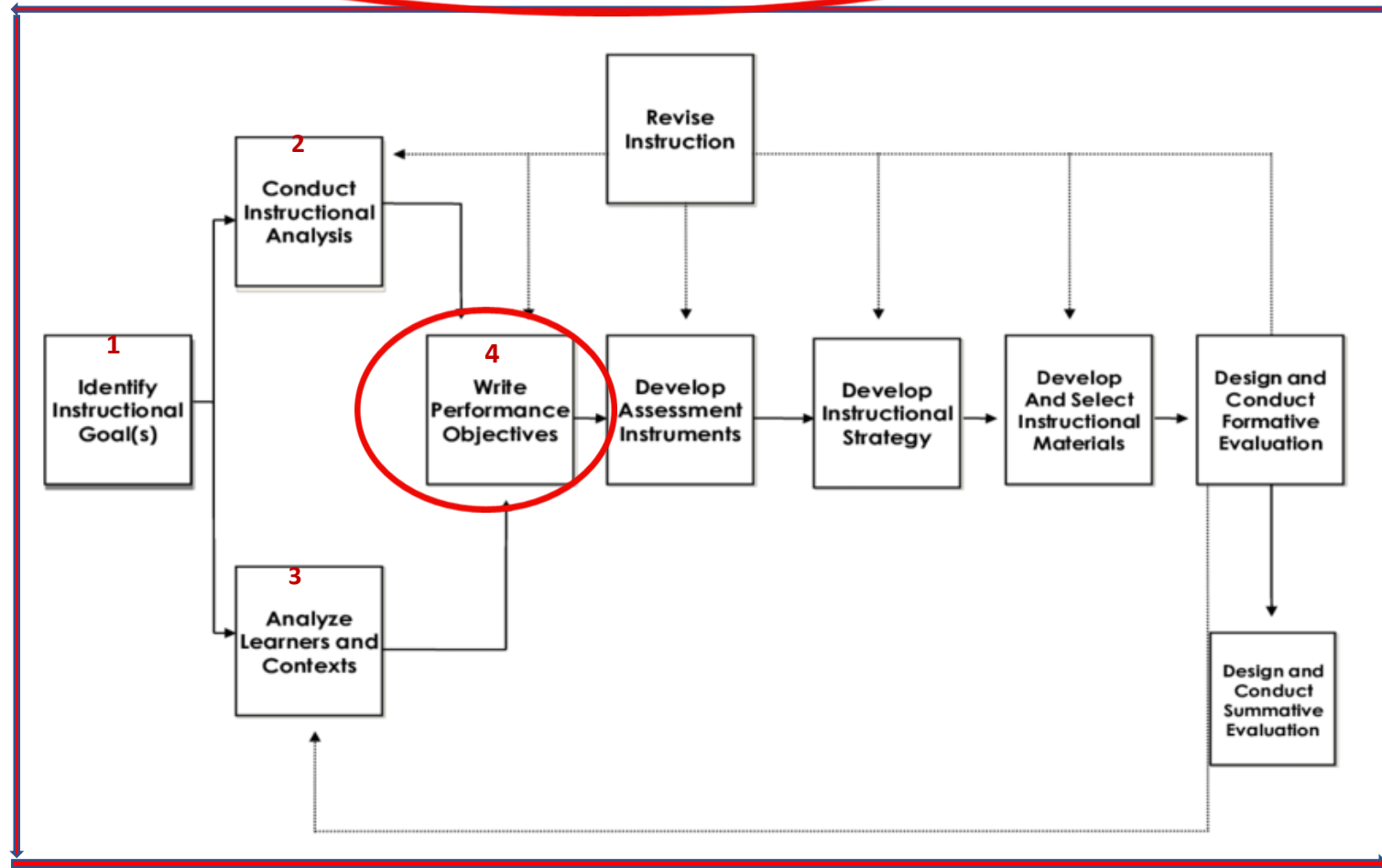
**Performance Standards**

Average rating:  
Theory: 2  
Practical: 3  
Behavioural: RC

APPLY CONCEPTS OF MATERIALS ENGINEERING	4.00	IDENTIFY FUNCTIONS OF COMPUTERS	5.01	OPERATE EQUIPMENT AND PERFORM ULTRA SOUND TESTING	6.02
UTILIZE COMPUTERS	5.00	OPERATE EQUIPMENT AND PERFORM VIBRATION ANALYSIS	6.01A	PERFORM SPECTRAL ANALYSIS	6.02A
OPERATE EQUIPMENT AND PERFORM TESTS	6.00	OPERATE INFRARED EQUIPMENT	6.01B	OPERATE VISUAL INSPECTION EQUIPMENT	6.02B
		OPERATE LIQUID PENETRANT INSPECTION	6.01C	OPERATE TENSILE TESTING EQUIPMENT	6.02C
		OPERATE MEASURING INSTRUMENTS	6.01D	READ AND INTERPRET BLUEPRINTS AND MAKE TECHNICAL SKETCHES	7.02
PERFORM MATERIALS TESTING	7.00	IDENTIFY MATERIAL AND COMPONENT TYPE	7.01	ANALYZE PROBLEM	8.02
SOLVE PROBLEMS SYSTEMATICALLY	8.00	IDENTIFY PROBLEM	8.01	AVOID POTENTIAL EXPLOSIVE HAZARDS	9.02
PRACTICE SAFETY AND PROPER WORK HABITS	9.00	READ, INTERPRET AND COMPLY WITH STATUTORY SAFETY REGULATIONS	9.01	DEMONSTRATE PATIENCE	10.02
WORK EFFECTIVELY WITH FELLOW EMPLOYEES	10.00	RESPECT OTHERS' POINTS OF VIEW	10.01	JOIN TECHNICAL SOCIETY	11.02
MAINTAIN PROFESSIONAL COMPETENCE	11.00	LOCATE TECHNICAL JOURNALS	11.01		

## Applying the Instructional Systems Approach To Training and Education

**2**  
What do learners  
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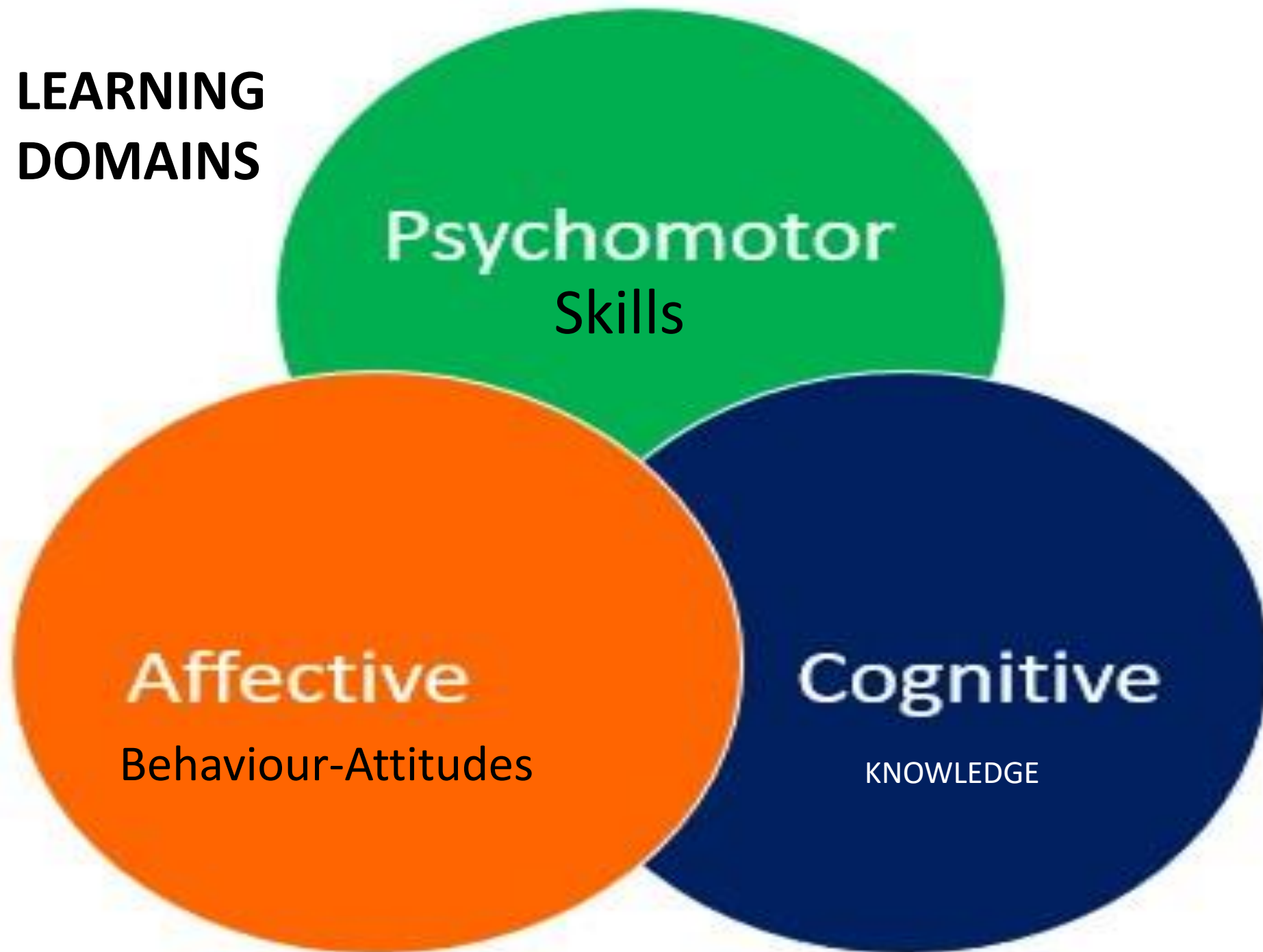
Learning outcomes are measurable achievements that the learner will be able to understand after the learning is complete.

The most useful learning outcomes include a **verb** that describes an observable action, a **description of what the learner will be able to do** and under which **conditions** they will be able to do it, and the **performance level** they should be able to reach.

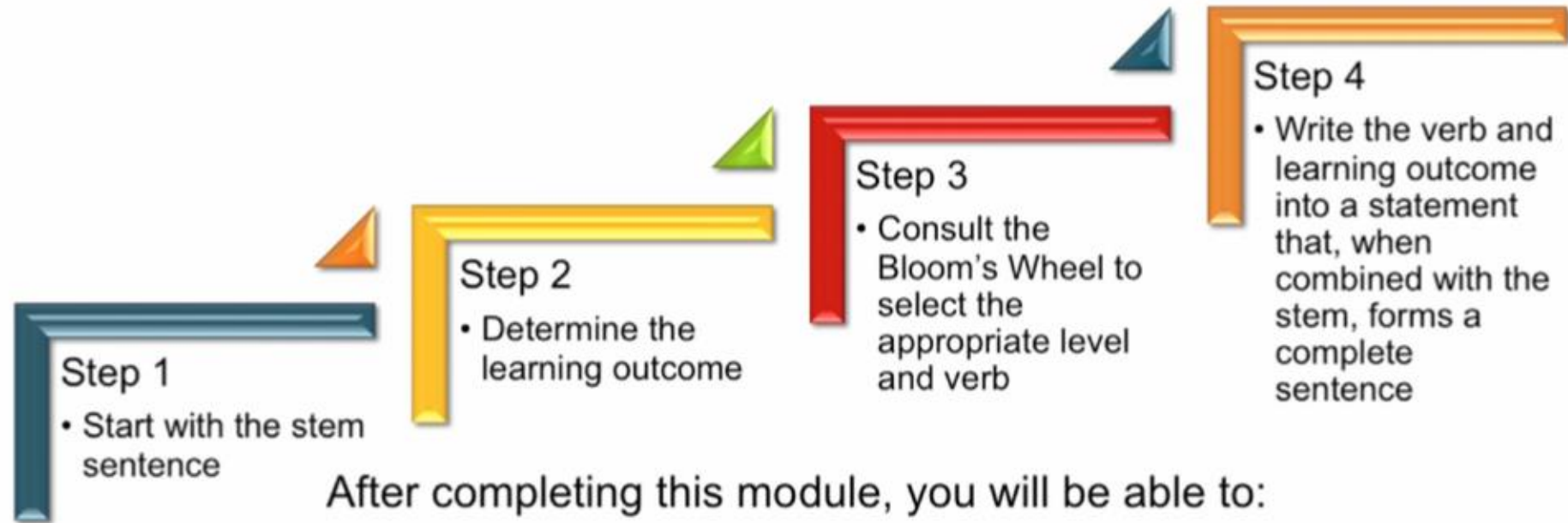
<https://www.valamis.com/hub/learning-outcomes>



# LEARNING DOMAINS



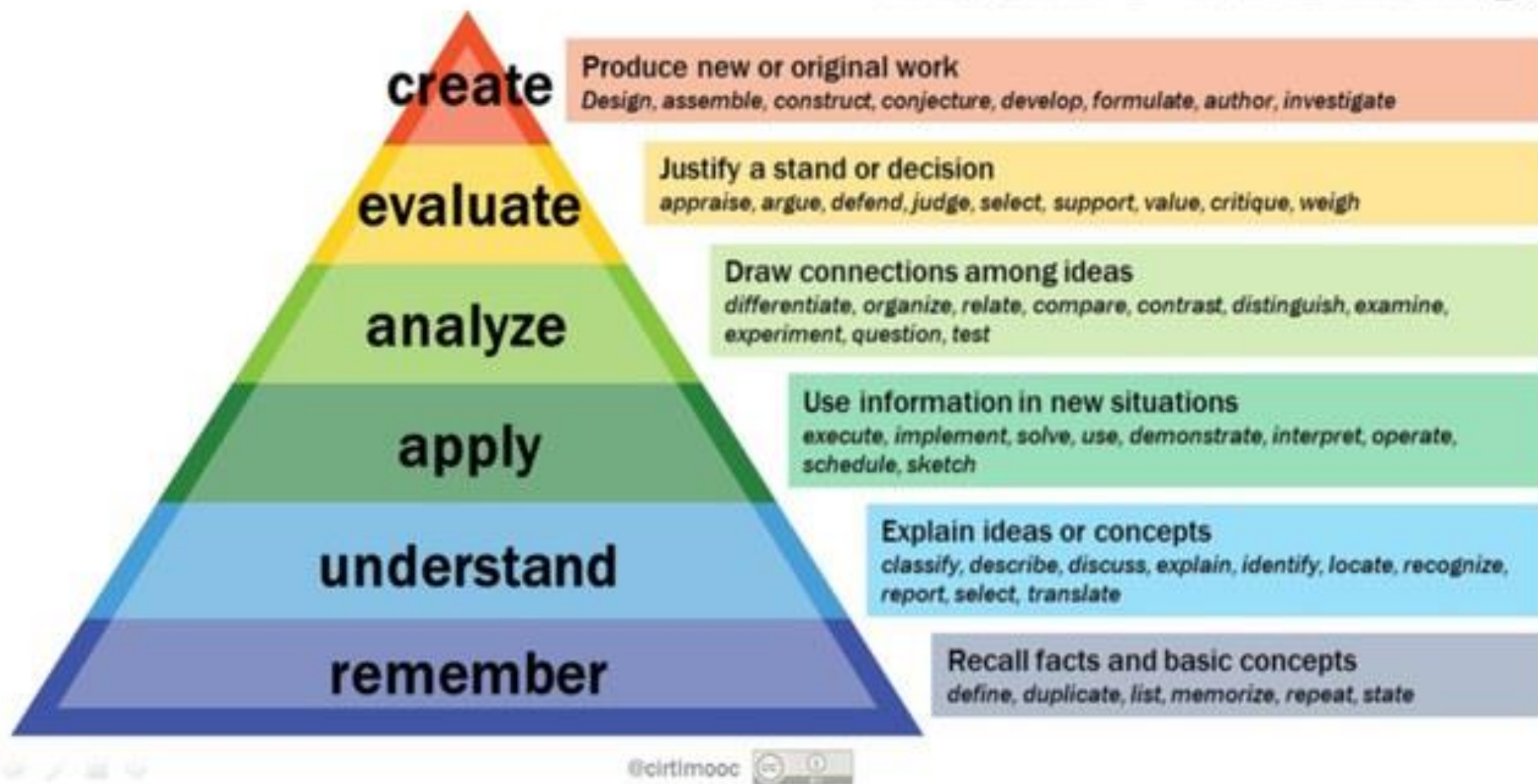
# How to Write a Learning Objective



- Classify learning objectives within the six cognitive domains of Bloom's Taxonomy.



# Bloom's Taxonomy





- Define** human-wildlife conflict and examine its importance in historical & modern-day conservation through a One Health & Wellbeing lens
  - Provide examples** of human-wildlife conflict & solutions that have been both successful & unsuccessful in the field
  - Contextualise** the importance of cultural context in the problem-solving approach to HWC applying a OHW lens
  - Perform a critical evaluation** of the factors leading to HWC, through the use of case studies
- 
- Practice problem-solving** and apply solutions to mitigate HWC
  - Apply forensics approaches to assist in investigations involving HWC

## Example subject learning outcomes

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Students who successfully complete this subject will be able to:

- **Explain** the major concepts and propositions of personality theories;
- **Analyse** the influence of biological, interpersonal and cultural factors on the development of individual differences;
- **Evaluate** psychologists' behaviour in professional contexts, in relation to the Australian Psychology Society "Code of Ethics".



*most complex*

You may see that progression from less complex to most complex in your SLOs

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# Example Module Outline Excerpts- Human-Wildlife Conflict Resolution

## Module Name

Habitat and landscape management

## Competencies addressed

Decision making

Pattern recognition



## Learning outcomes

Review major components of landscape and their use and abuse

Outline impacts of land use changes on animal populations

Appreciate the services delivered by landscapes and their ecosystems



## Content

Major components of landscape

Use of landscape (by man and animals, human wildlife interface)

Problems caused by uncontrolled land use (fragmentation, degradation of habitats)

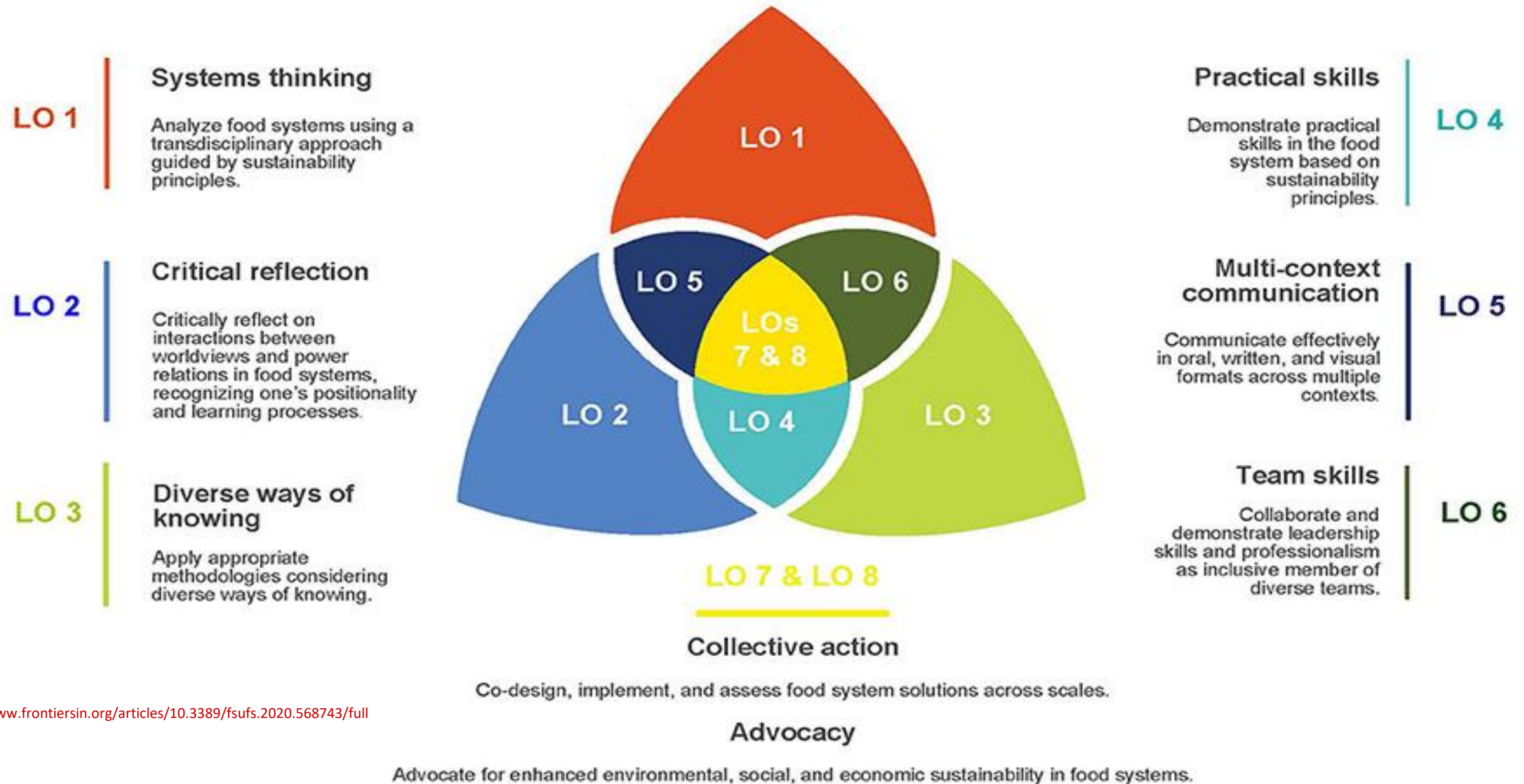
Ecosystem services

Drivers of conflict

Overview of measures to manage landscape to mitigate HWC (e.g. establishment of corridors to enhance connectivity).

# Adaptable Program Learning Outcomes for Sustainable Food Systems Education

Upon graduating, students will be able to...









AFROHUN  
Advancing One Health  
ETHIOPIA

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in the context of the «One Health»

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# **PART 2**

## **Capacity Development For a Sustainable Future**

### **SESSION 2**

Themes

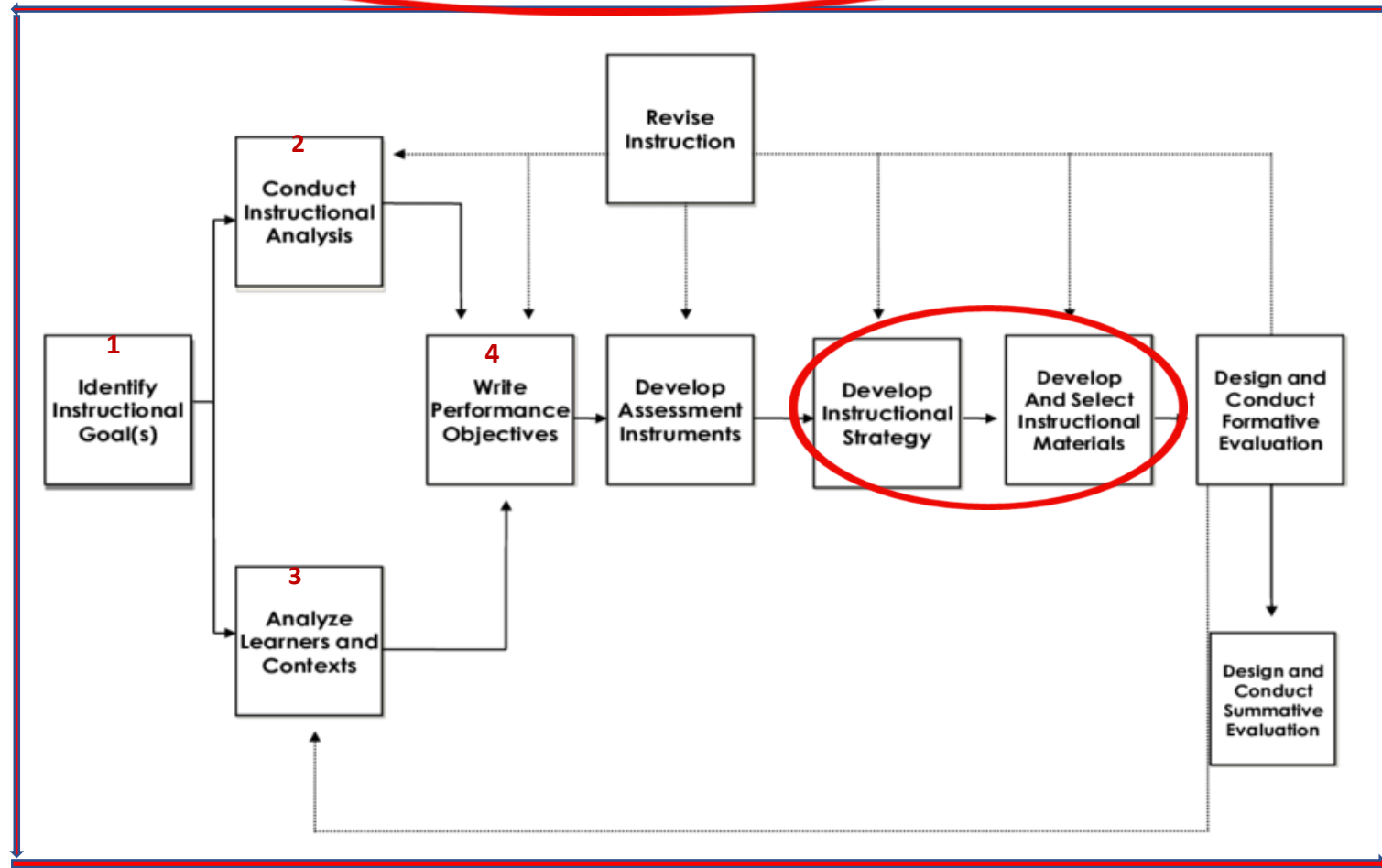
**Matching Teaching Methods to Learning Outcomes**  
**Breaking Down Silos: The Ecological University**

# **MATCHING TEACHING METHODS TO LEARNING OUTCOMES**



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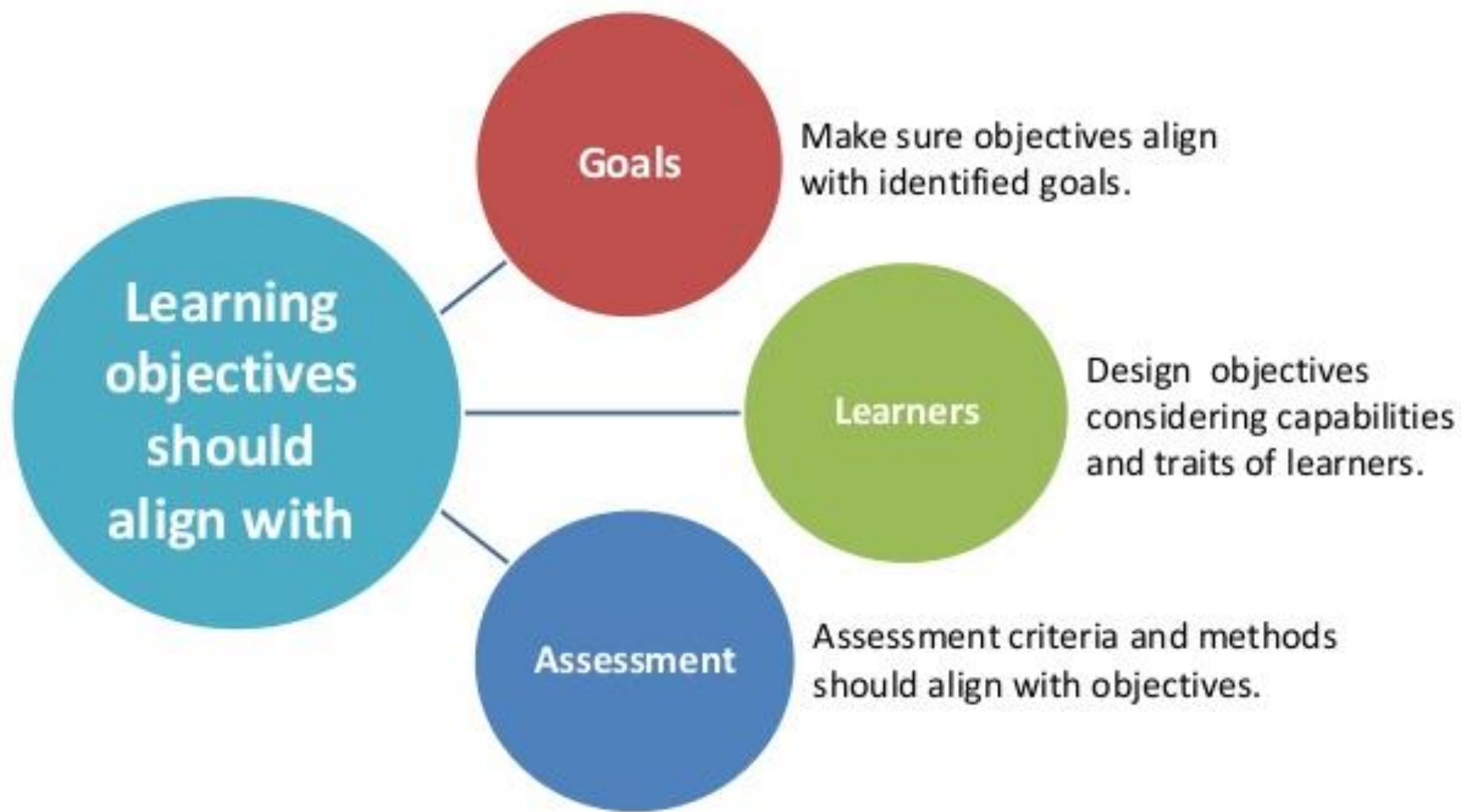
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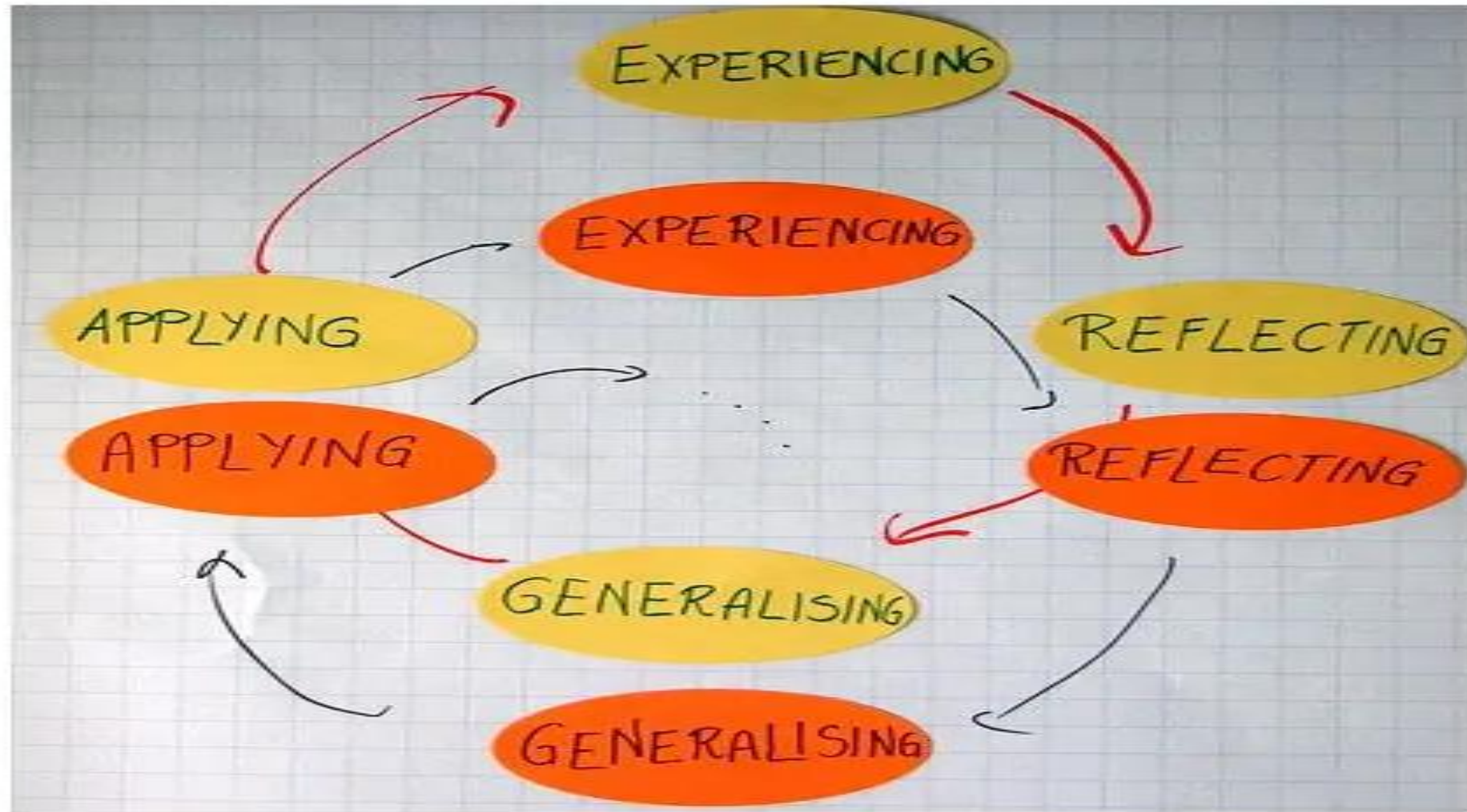
# Learning Objective Alignment



# Training Methods



# How we learn-Kolb's learning cycle







# CASE STUDIES IN CONNECTIVITY CONSERVATION

Global Innovations in Corridor Identification,  
Protection, and Restoration

# TOWARD THE ECOLOGICAL UNIVERSITY

*Reconceptualisation of the higher  
(all?)education purpose focusing on the  
development of an interconnected  
knowledge system with a concern for the  
whole Earth*



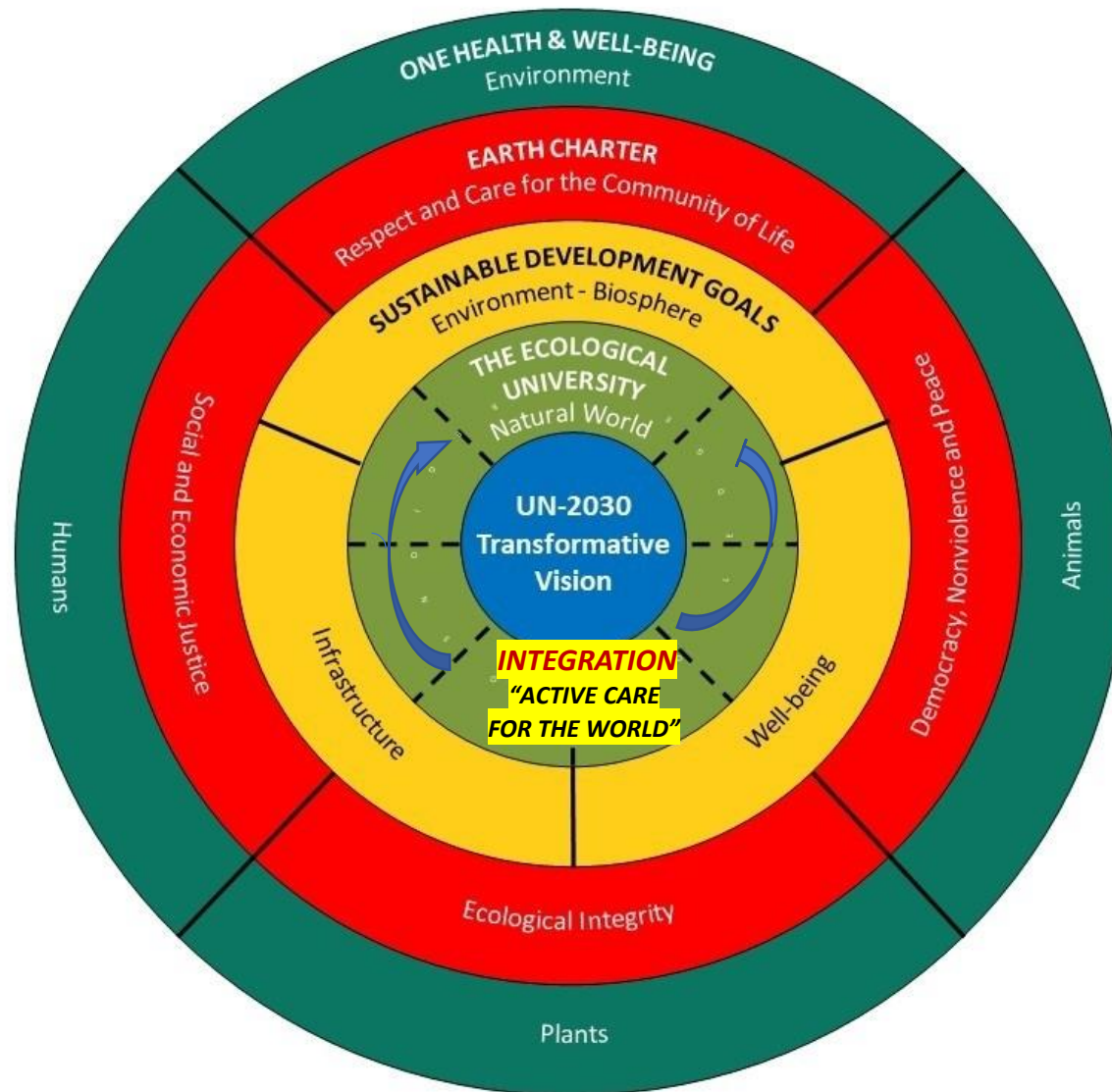
Research section	Current narrative	New narrative
Research problem formulation	Focus on human health	Equal attention to health of ecosystems, animals, and humans
	Emphasis of financial cost to society	Equal attention to ecological, social, and financial costs to society
	Restricted scope e.g., interaction between pathogen and human cost only	Broad scope: interrelated ness of all organic and inorganic elements in the system included
Choice of scientific methods	Emphasis on financial cost	Equal emphasis on environmental impact
Development of solutions for addressing zoonotic disease issues	Emphasis on current event	Attention to all events of this nature
	Short term	Also, long-term
	Solution for proximate causes well accepted	Solution for proximate causes accepted only if action undertaken to deal with ultimate causes
	Acceptability determined by possibility to continue financial profit of human activity involved	Acceptability determined by improvement to health and well-being of humans and animals, and to health integrity of ecosystems

[Part 2: Development of a Global 'All Life' narrative](#)

Also see [Future Africa – 1 HOPE Webinar Series on Transdisciplinary Research](#)



# Toward the 'Ecological' University



## One Health & Wellbeing

*"An integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems."*

## Earth Charter

*"Recognising that all beings are interdependent and every form of life has value regardless of its worth to human beings."*

## Sustainable Development Goals

*Achieving "a better and more sustainable future for all."*

## The Ecological University

*Embracing "the sustainability and wellbeing of the planet and all its species."*

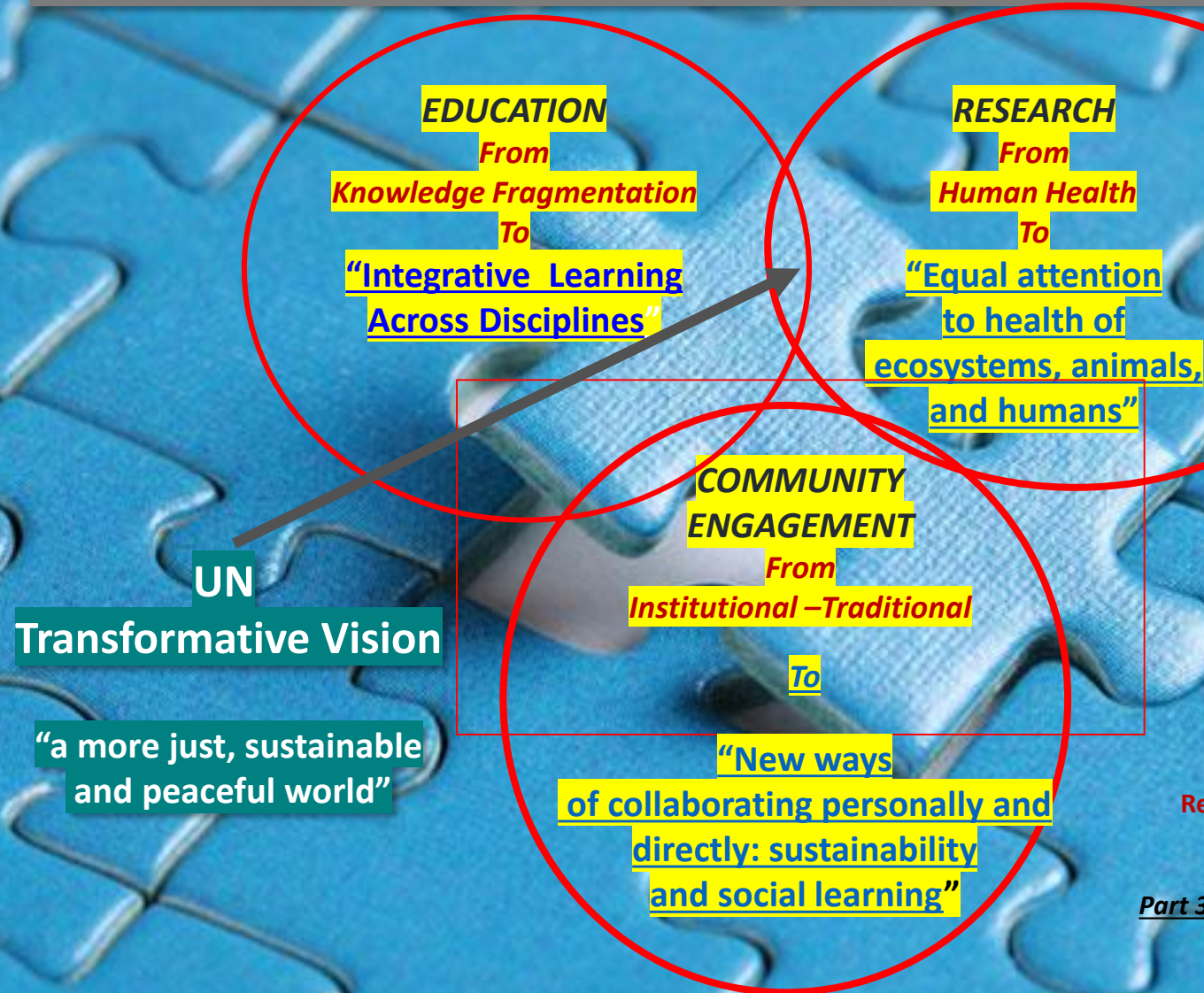
## UN-2030 Transformative Vision

*Creating a "more just, sustainable and peaceful world."*

**SHIFT FROM HUMAN-CENTRISM TO ECOCENTRISM**



# THE ECOLOGICAL UNIVERSITY: CAPACITY DEVELOPMENT FOR A SUSTAINABLE FUTURE



Reflections on the Transformation of Higher Education  
in the 21<sup>st</sup> Century

Part 2: Development of a Global 'All Life' narrative

Part 3: The international One Health for One Planet Education  
Initiative (1 HOPE) and the 'ecological university'

# *To choose our future*

‘We need to refashion our institutional systems and transform our current attitudes to virtually all aspects of society and the economy - consumption patterns and wellbeing, technology and production systems, enterprise and distributive justice - all of which have in the light of today’s circumstances and knowledge need to be reoriented to conform to the principles of an inclusive and circular economy. This implies that the poorest and marginalised are put at the centre of economic and social attention and the restoration and regeneration natural systems become the boundary conditions that must not be transgressed, not just for future generations but also for those of today.’



[Dr. Ashok Khosla](#). (2015). [Development Alternatives](#).

‘Widely regarded as a founding father of the concept of sustainable development’

*Chair*, Hydropower Sustainability Assessment Council

Former President of the International Union for Conservation of Nature (IUCN)



"It is the long history of humankind that  
those who learned to collaborate  
and improvise most effectively have  
prevailed."

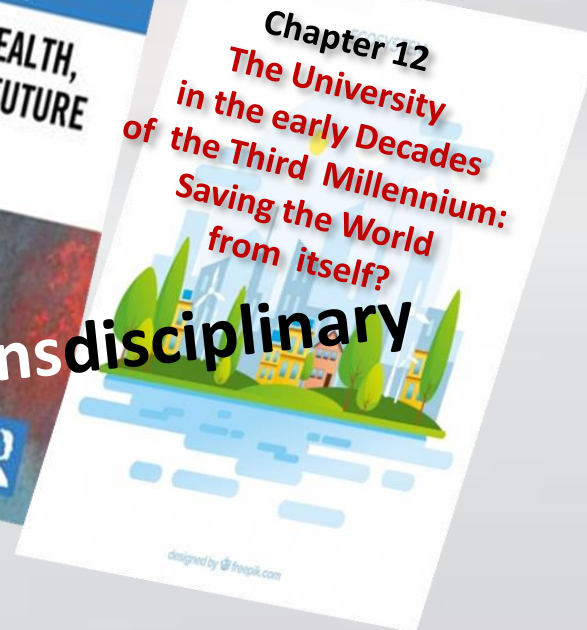
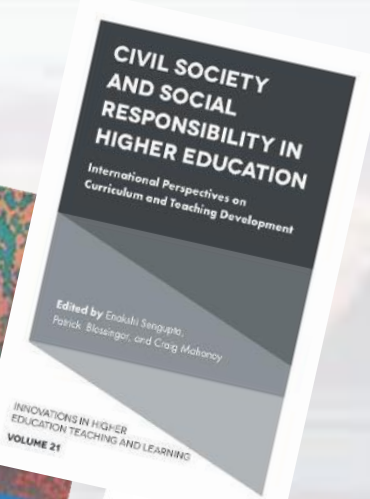
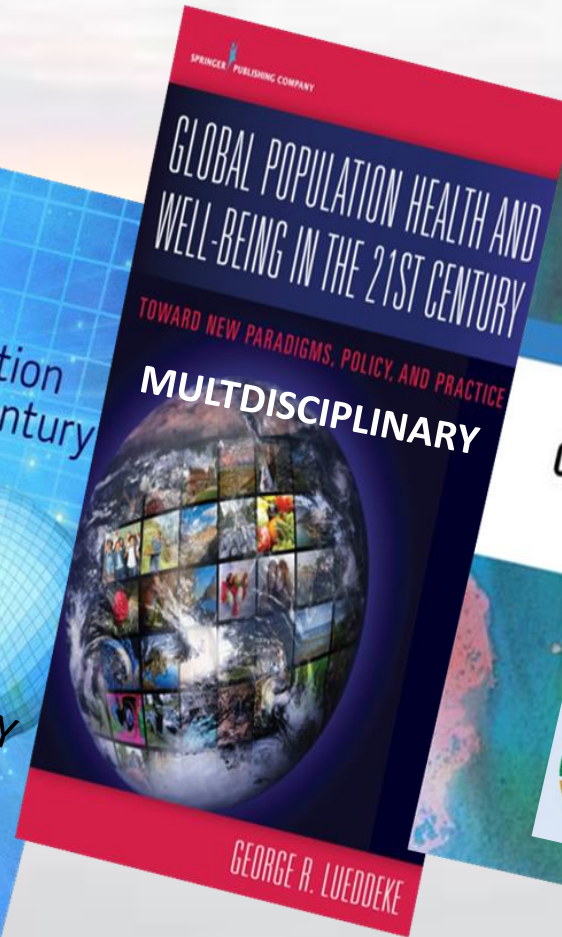
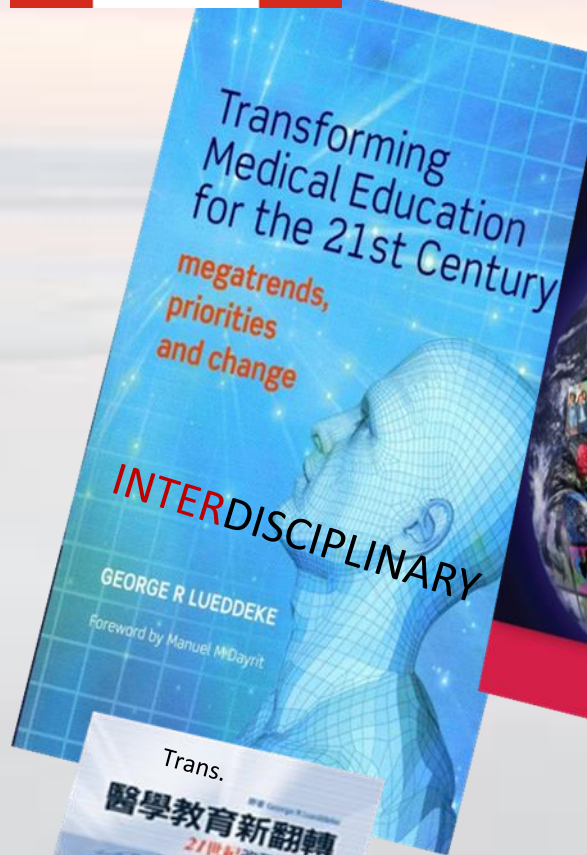
– Charles Darwin

Thank you!

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BASIC  
(INDIGENOUS &  
FRANCOPHONE)  
& HIGHER  
EDUCATION



Personal journey toward One Health & Wellbeing  
(OHW)



# Reflections on the Transformation of Higher Education in the 21<sup>st</sup> Century

*Part 1: The One Health & Wellbeing Concept*

*Part 2: Development of a Global 'All Life' narrative*

*Part 3: The international One Health for One Planet Education Initiative (1 HOPE) and the 'ecological university'*