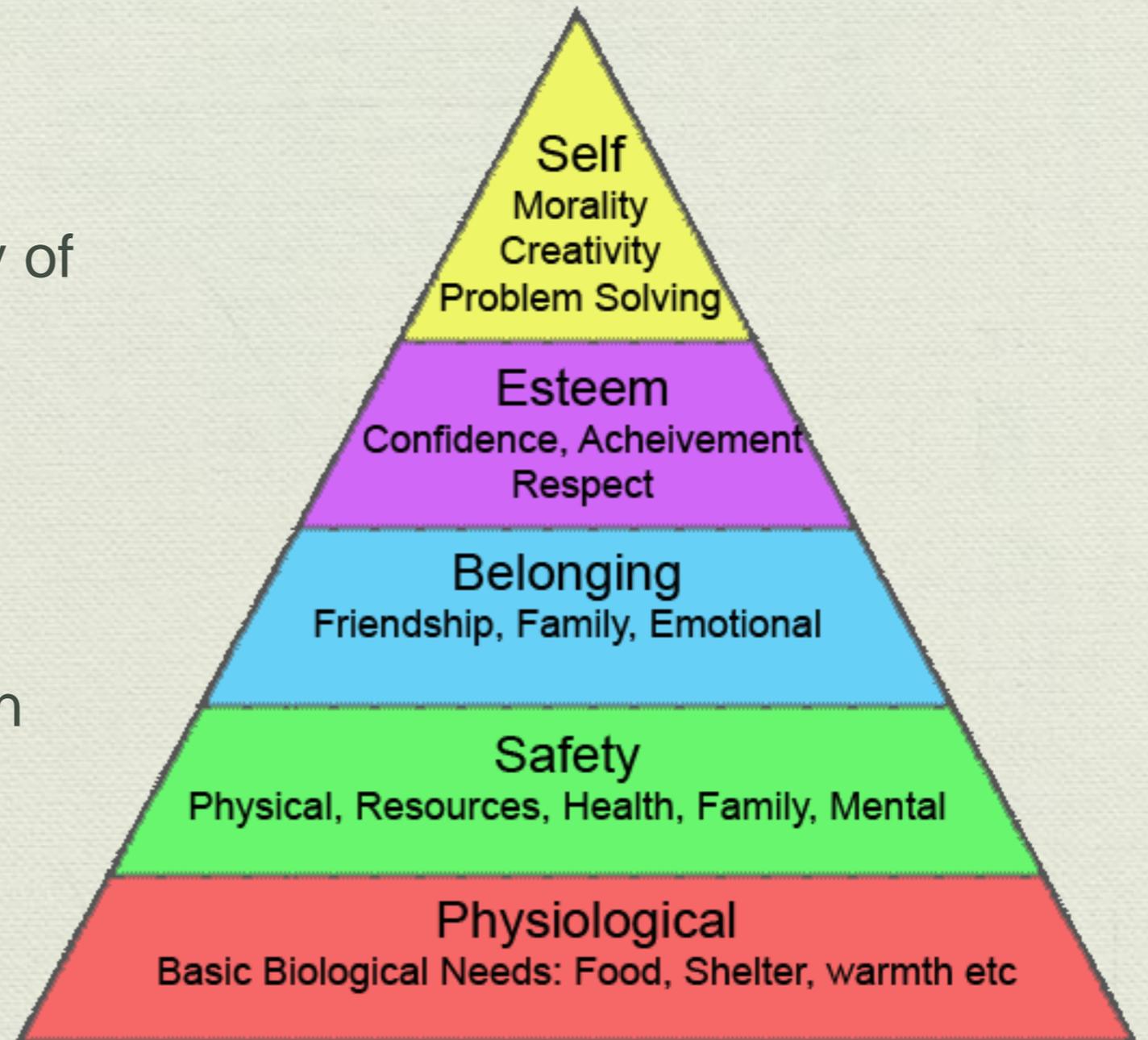# How Trainees Learn

Murray C Henstock

BSc (Psych) MTeach (Sec)

When Does Learning Occur

- Abraham Maslow's Heirarchy of Needs, 1943

- Needs must be met from bottom up

- Learning can only occur when they after they have met physical needs

Self
Morality
Creativity
Problem Solving

Esteem
Confidence, Acheivement
Respect

Belonging
Friendship, Family, Emotional

Safety
Physical, Resources, Health, Family, Mental

Physiological
Basic Biological Needs: Food, Shelter, warmth etc

Constructivism

- Trainee Centred

- Prior Knowledge and Experience

- Scaffolding

- Self Discovery

- Piaget & Vygotsky

- Stages of Development

- Peer-Supported Learning

- Zone of Proximal Development

"People only learn what they want to learn"
"Trainees do not arrive with empty heads ready to be filled. They have existing knowledge, experience and backgrounds that new information is built upon"
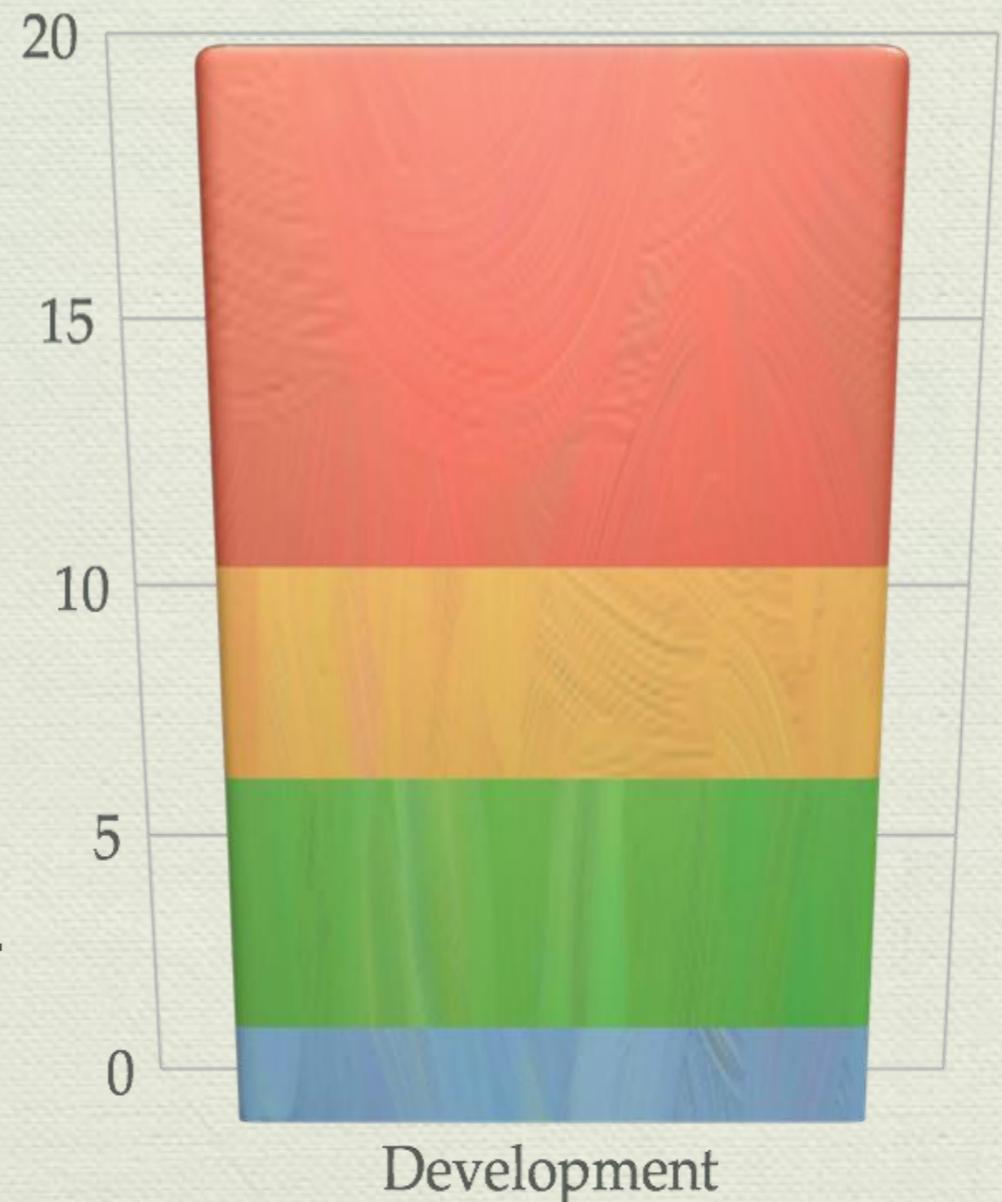
5 Es

- Roger Bybee, 1997

- 1. Engage

- 2. Explore

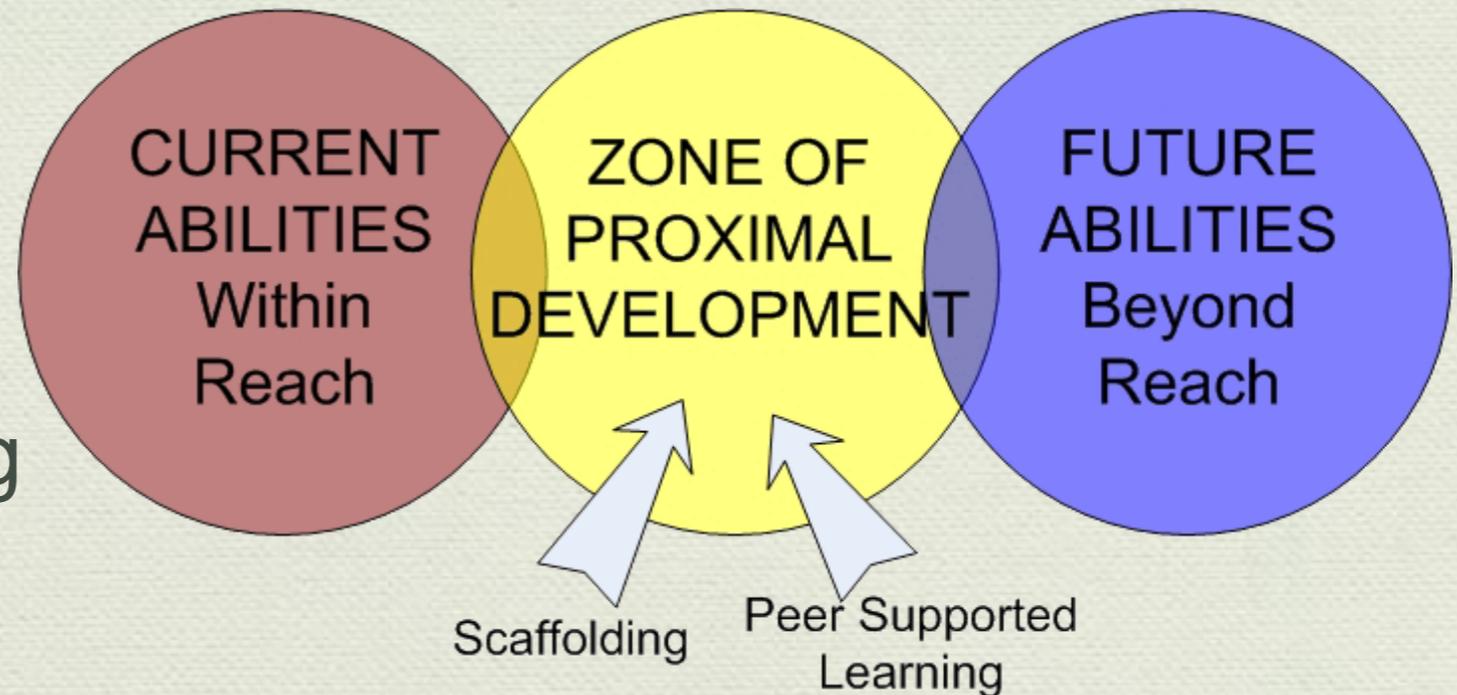- 3. Explain

- 4. Extend

- 5. Evaluate
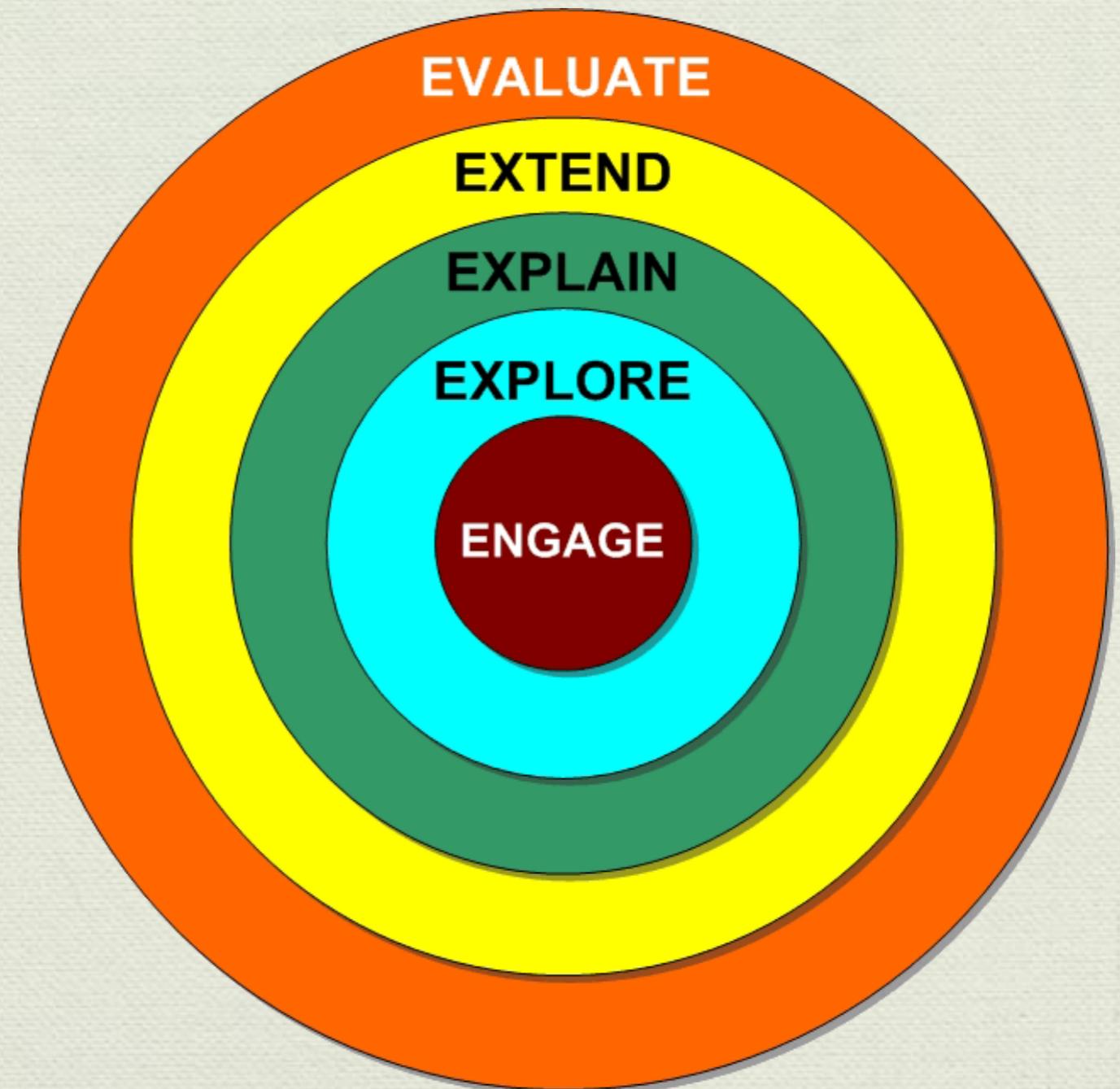
Stages of Development

- Jean Piaget, 1896-1980

- Sensory Motor Stage 0 - 2

- Pre Operational Stage 2 - 7

- Concrete Operational Stage 7 - 11

- Formal Operations Stage 11 - 16+

■ Sensory Motor ■ Pre-Operational ■ Concrete Operations ■ Formal Operations
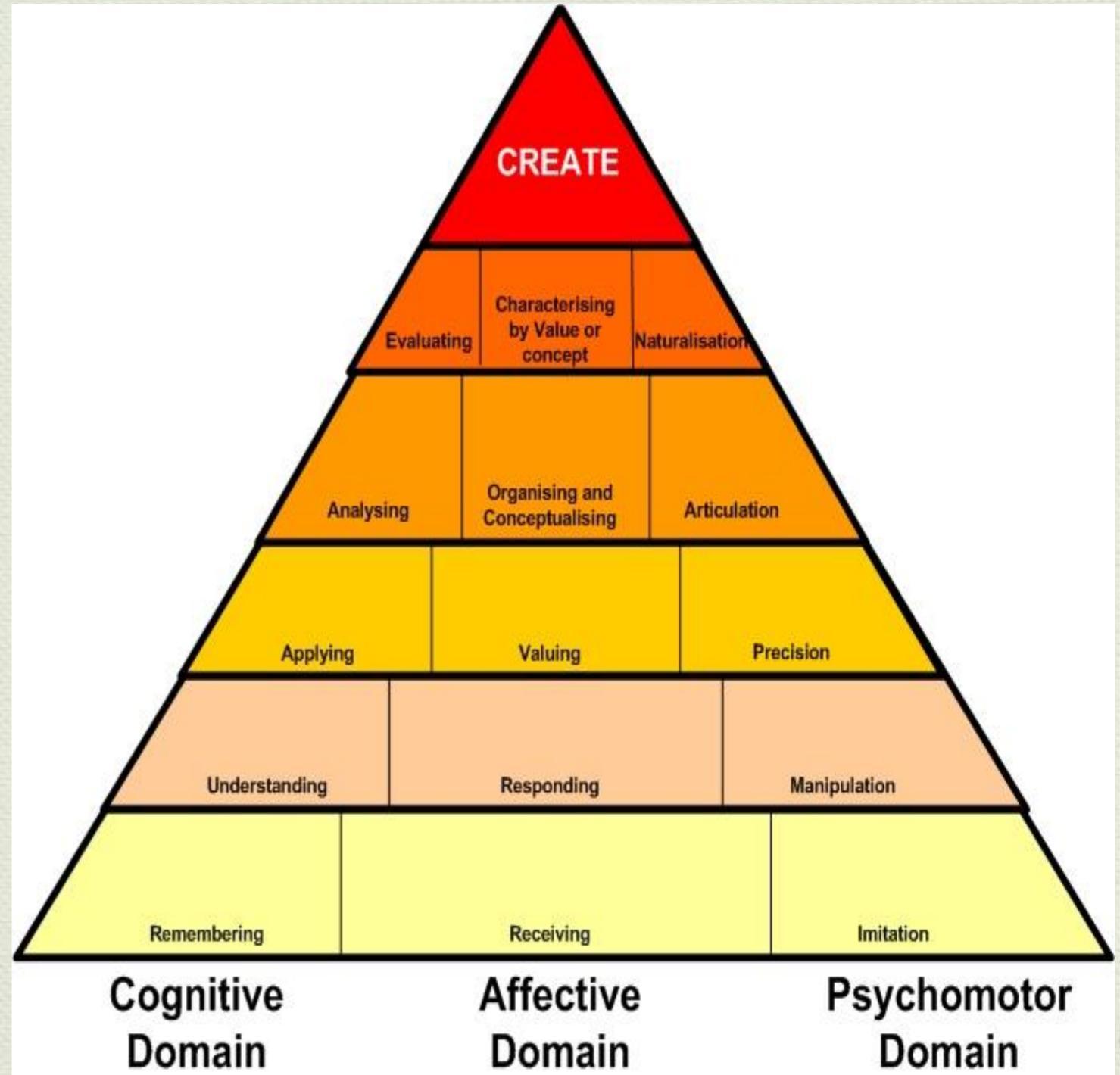
Development

Zone of Proximal Development

- Lev Vygotsky, 1978

- Scaffolding

- Peer Supported Learning

- "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers"

Blooms Taxonomy

- Benjamin Bloom, 1956

- Remembering

- Understanding

- Applying

- Analysing

- Evaluating

- Creating

CREATE

Evaluating	Characterising by Value or concept	Naturalisation
Analysing	Organising and Conceptualising	Articulation
Applying	Valuing	Precision
Understanding	Responding	Manipulation
Remembering	Receiving	Imitation

**Cognitive Domain** — **Affective Domain** — **Psychomotor Domain**

Scaffolding

- James McKenzie, 2000

- Scaffolding Provides Clear Direction

- Scaffolding Clarifies Purpose

- Keeps Trainees on Task

- Offers assessment to clarify expectations

- Points trainees to worthy resources

- Reduces Uncertainty and Surprise

- Creates Momentum
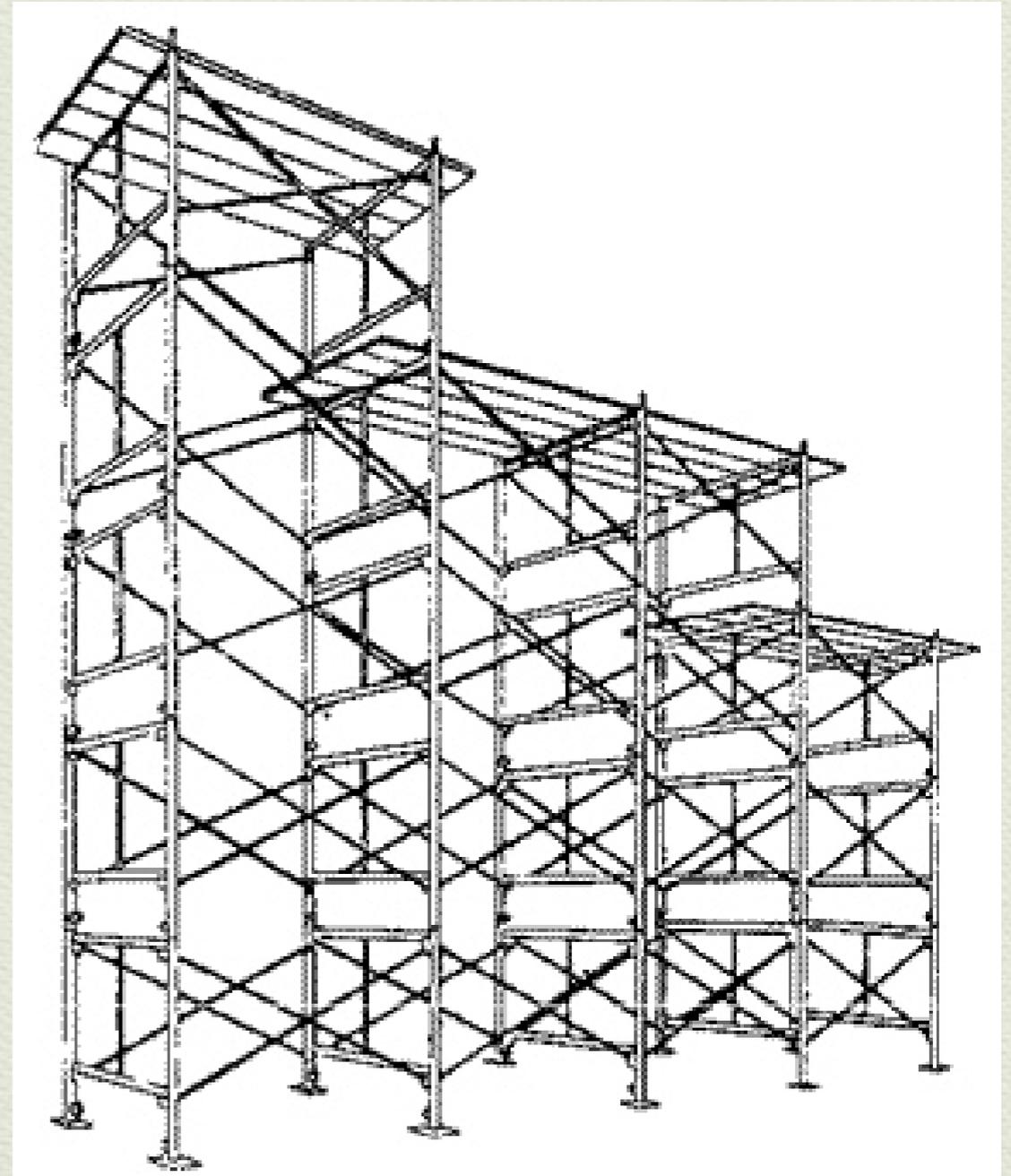
Observational Learning

- Albert Bandura, 1961

- Behavioural Modelling

- Learning Behaviour Consequences

- Self-Reinforcement

- Short Segments (with reward)

Created by Lumen Design Studio

| Observe | → | Clarify | → | Experience | → | Discuss |
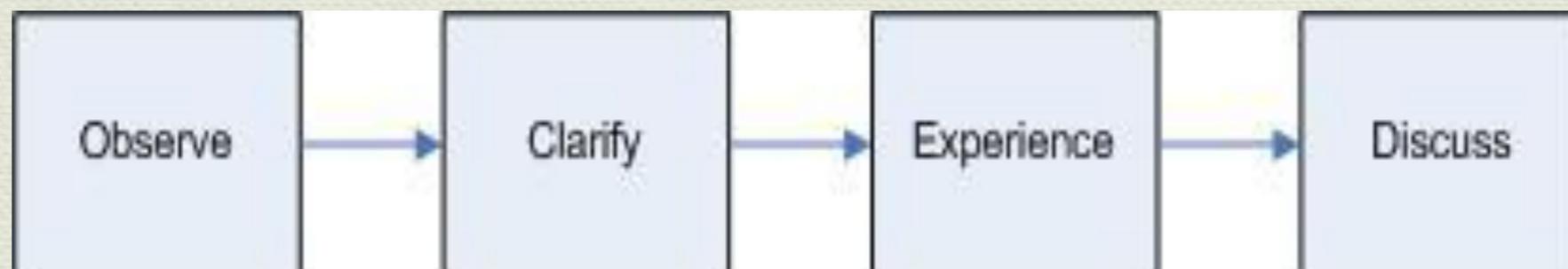
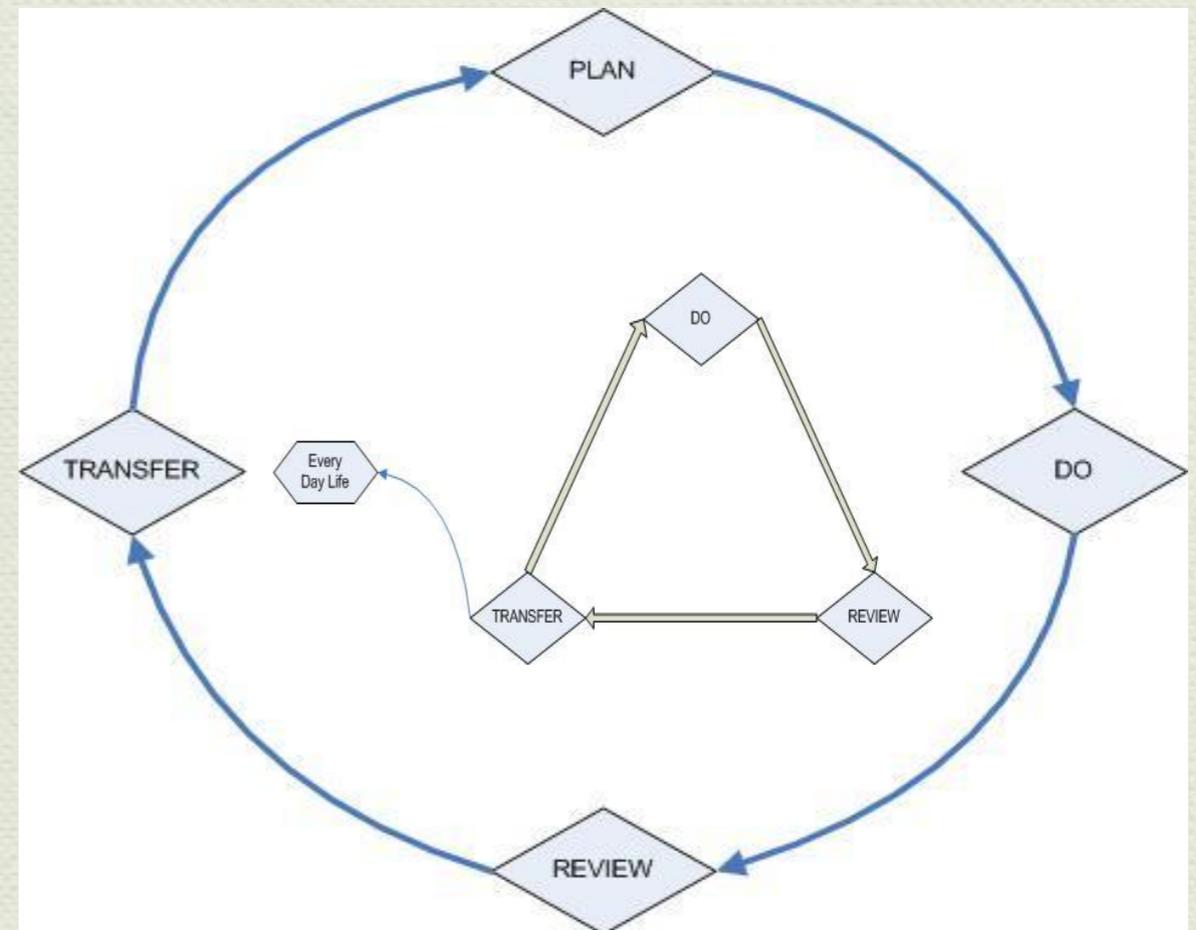# Experiential Learning

- David Kolb, 1977

- Plan

- Do

- Review/Reflection

- Transfer

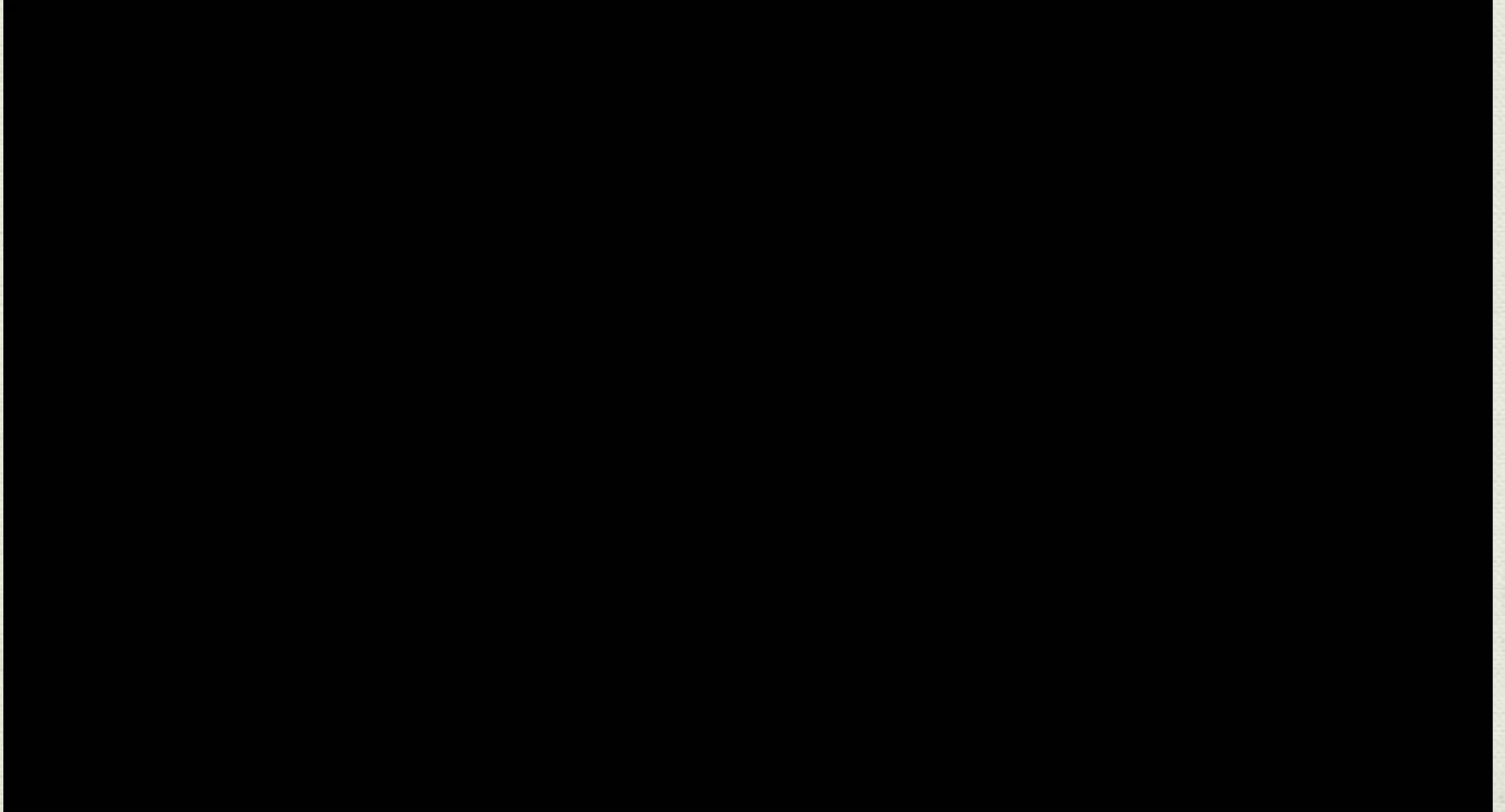- "For the things we have to learn before we can do them, we learn by doing them" - Aristotle

Visual Auditory Kinesthetic

- Neil Fleming, 2001

- Preference for receiving and memorising information

- Visual

  - Linguistic

  - Spatial

- Auditory

- Kinesthetic

- Learning - must then still be able to understand meaning

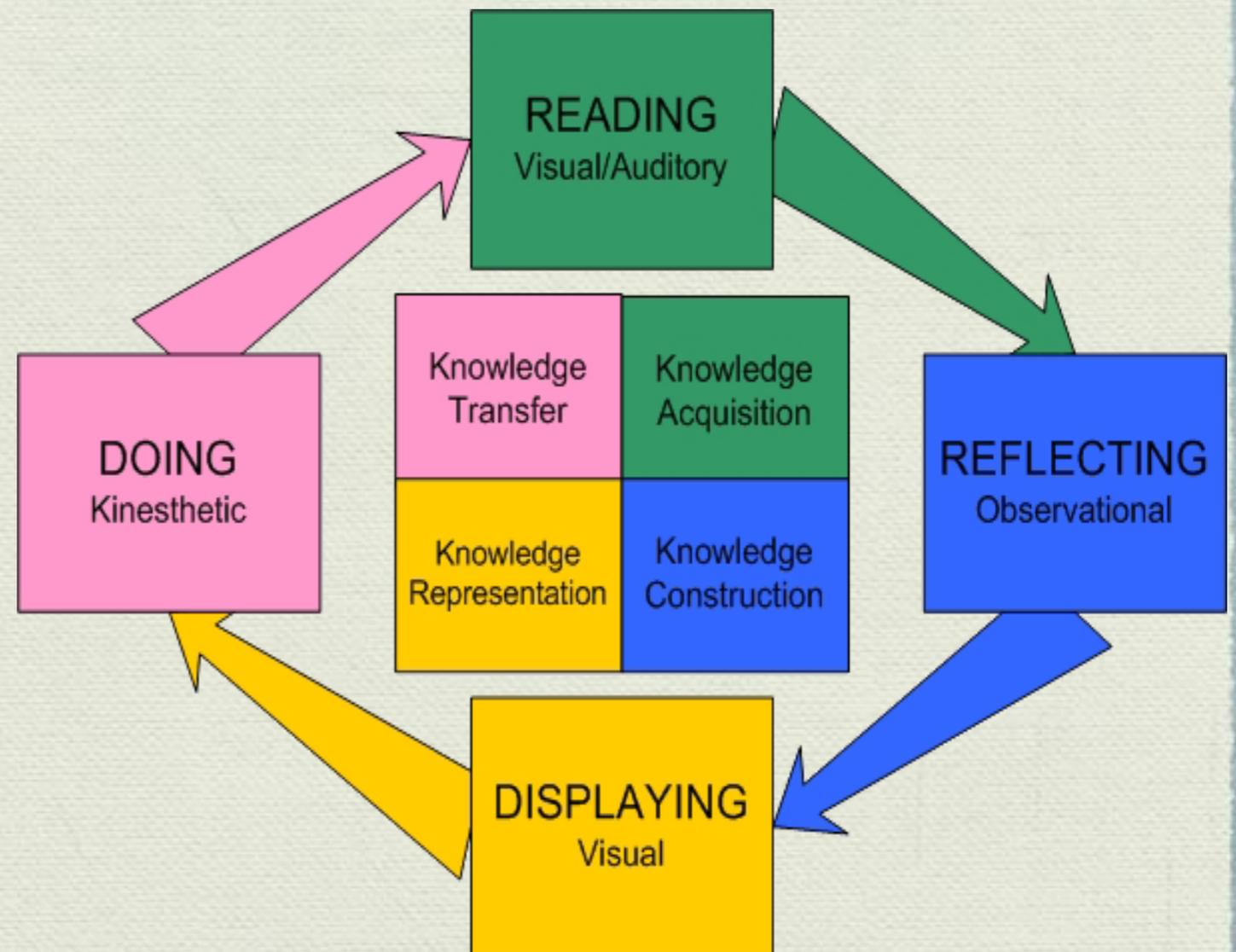# Video Example

Read-Reflect-Display-Do

- Bonk & Zhang 2008

- Read = Auditory and Visual

- Reflect = Reflective/Observational

- Display = Visual

- Do = Tactile / Kinesthetic

Problem Based Learning

- Howard Barrows, 1960s

- Is Contextual

- Trainee Centred

- Small Groups (Watches)

- Requires Facilitators (Watch Leaders)

- Requires a Problem to be solved

- Elaborates and Builds on Knowledge

Developing Competence

- Noel Burch, 1970s

- Unconscious Incompetent

- Conscious Incompetent

- Conscious Competent

- Unconscious Competent

- Skills are obtained when you no longer need to think
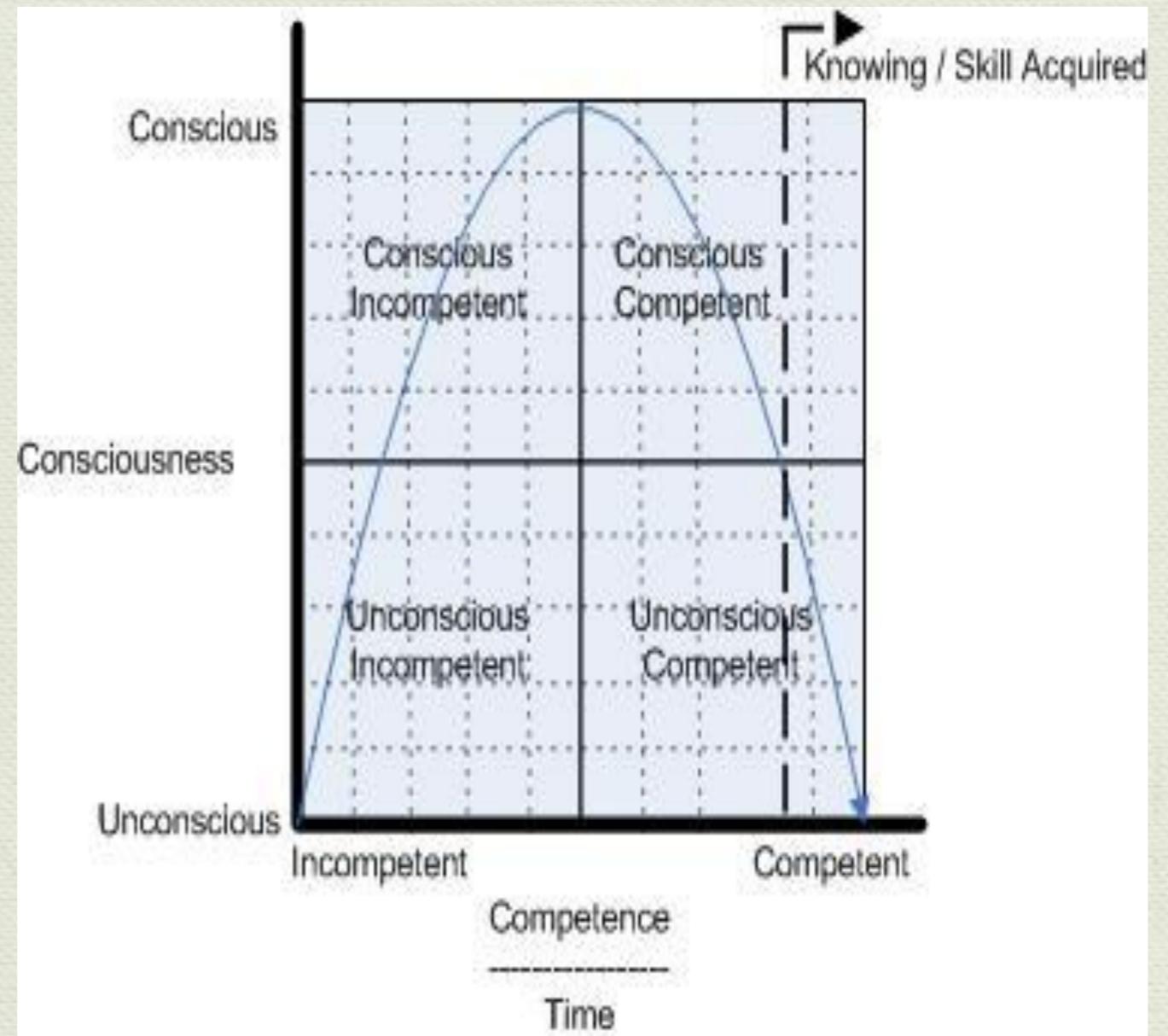
Cognitive Load

- John Sweller, 1998

- Brain has a finite capacity for processing

- Different for each person

- Three Types

  - Intrinsic

  - Extraneous

  - Germane

iStockphoto

iStockphoto