Architecting System Performance; Course Didactics

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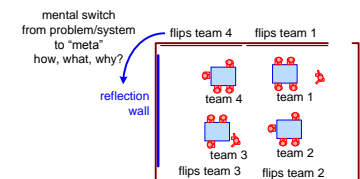
Abstract

The didactics behind a course like Architecting System Performance is a challenge, because the learning goals relate mostly to attitude and ways of thinking. At the same time, the material covers methods, techniques, tools, and concepts, which may lure participants in mechanistic approaches. Core in the didactic approach is reflection. This presentation offers some "thinking models" to assist reflection.
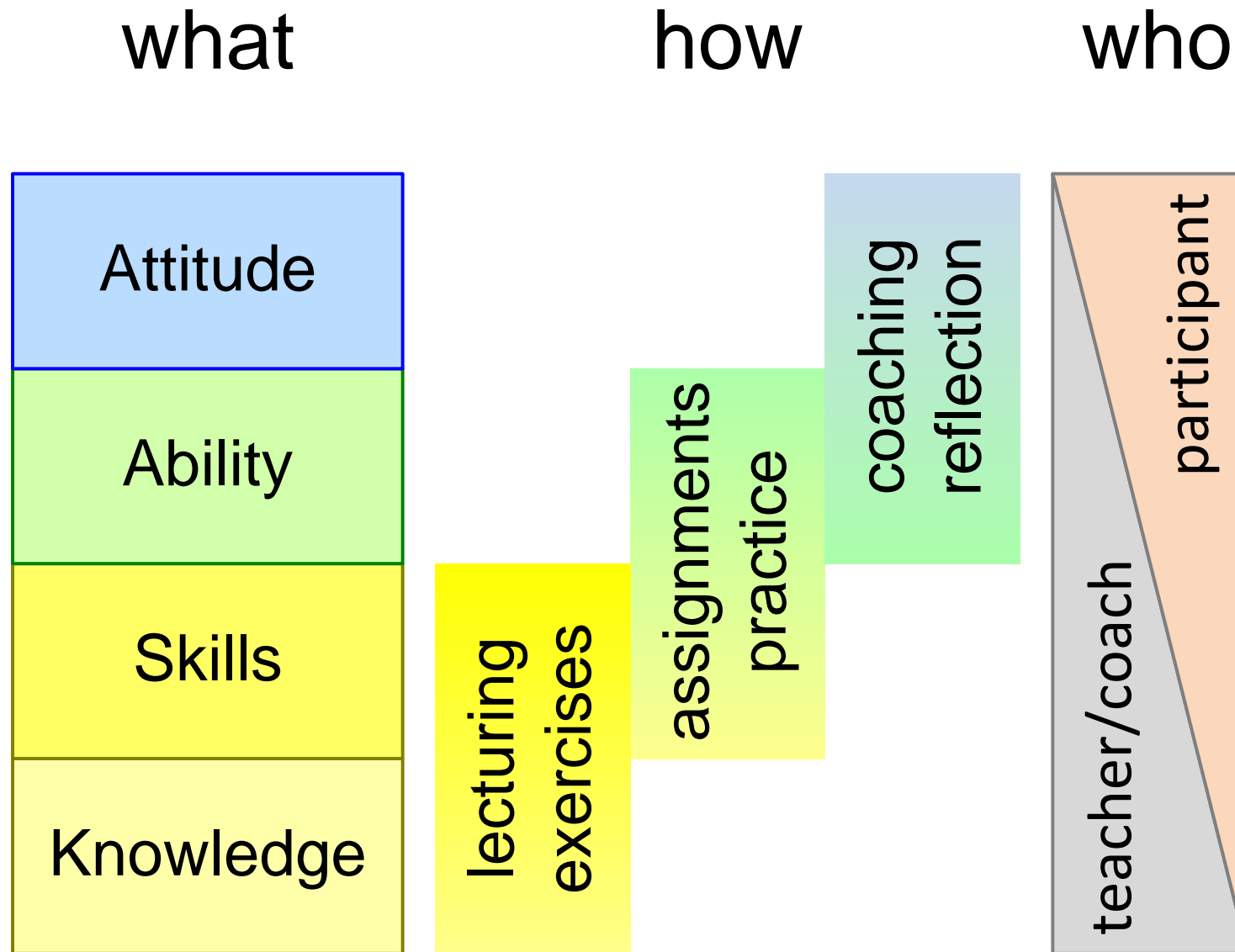
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version: 0.1

Competence Requires Various Learning Styles

what

how

who

Attitude

Ability

Skills

Knowledge

lecturing
exercises

assignments
practice

coaching
reflection

participant

teacher/coach

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Bloom's Taxonomy and Higher Order Thinking Skills

creating

evaluating

analyzing

applying

understanding

remembering

Higher Order Thinking Skills
more difficult to teach
more valuable
takes time to develop

must be mastered before,
however when missing
can be acquired fast

Lower Order Thinking Skills
people can acquire them fast

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ASPCDbloomsTaxonomy

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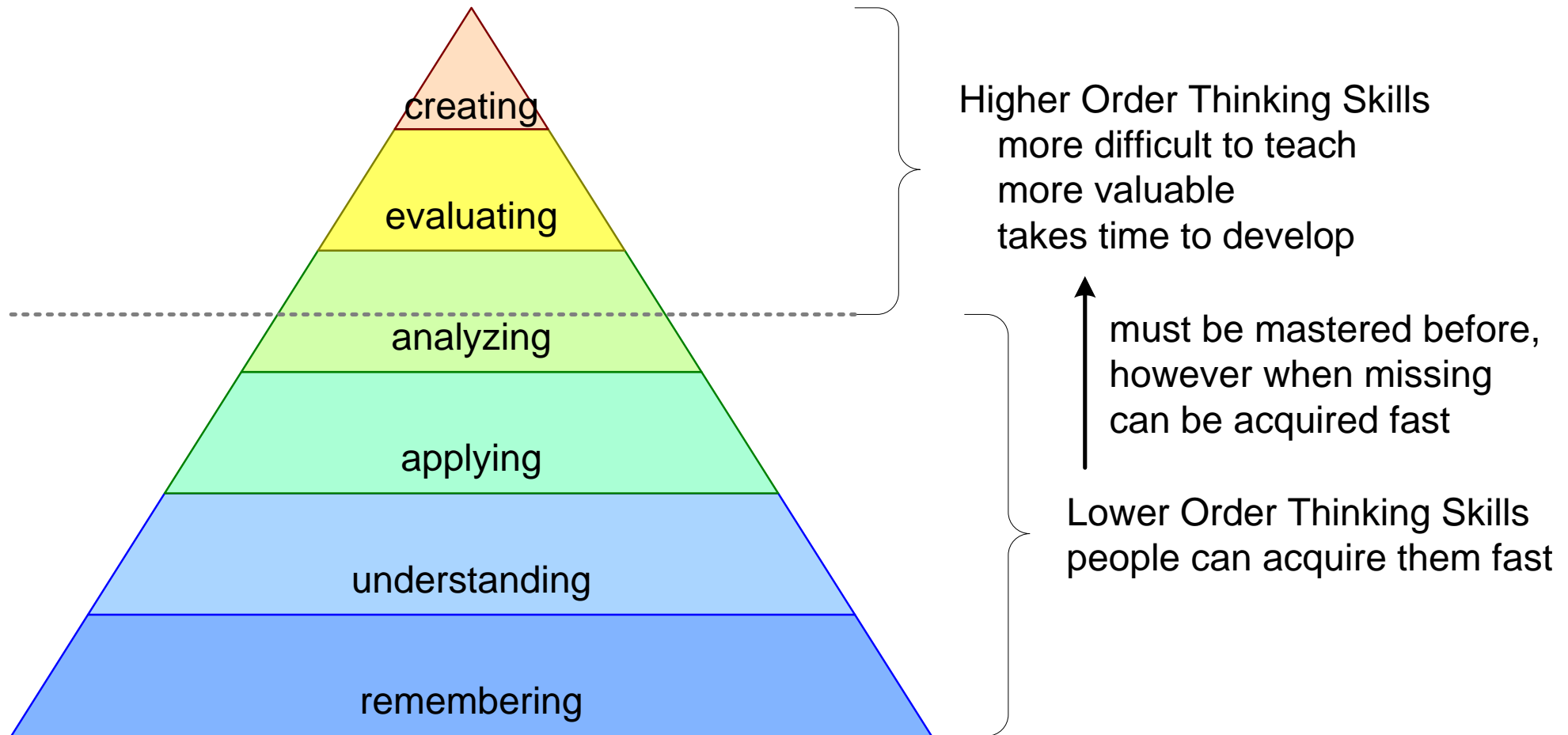
Course Assumption:

This course focuses on Higher Order Thinking Skills.
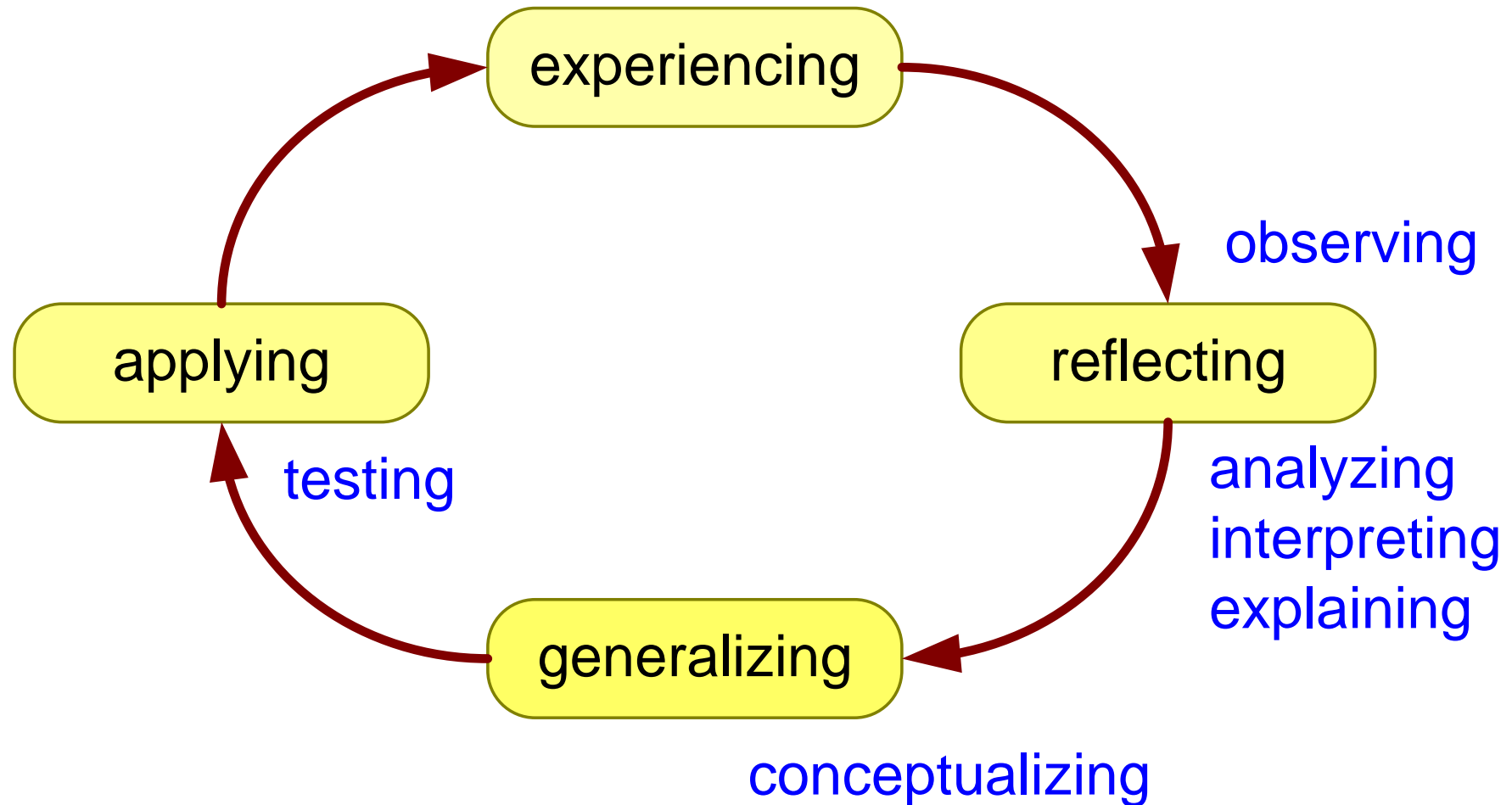
We assume

that you have appropriate knowledge

and

that you are able to find and absorb

required specific knowledge fast.
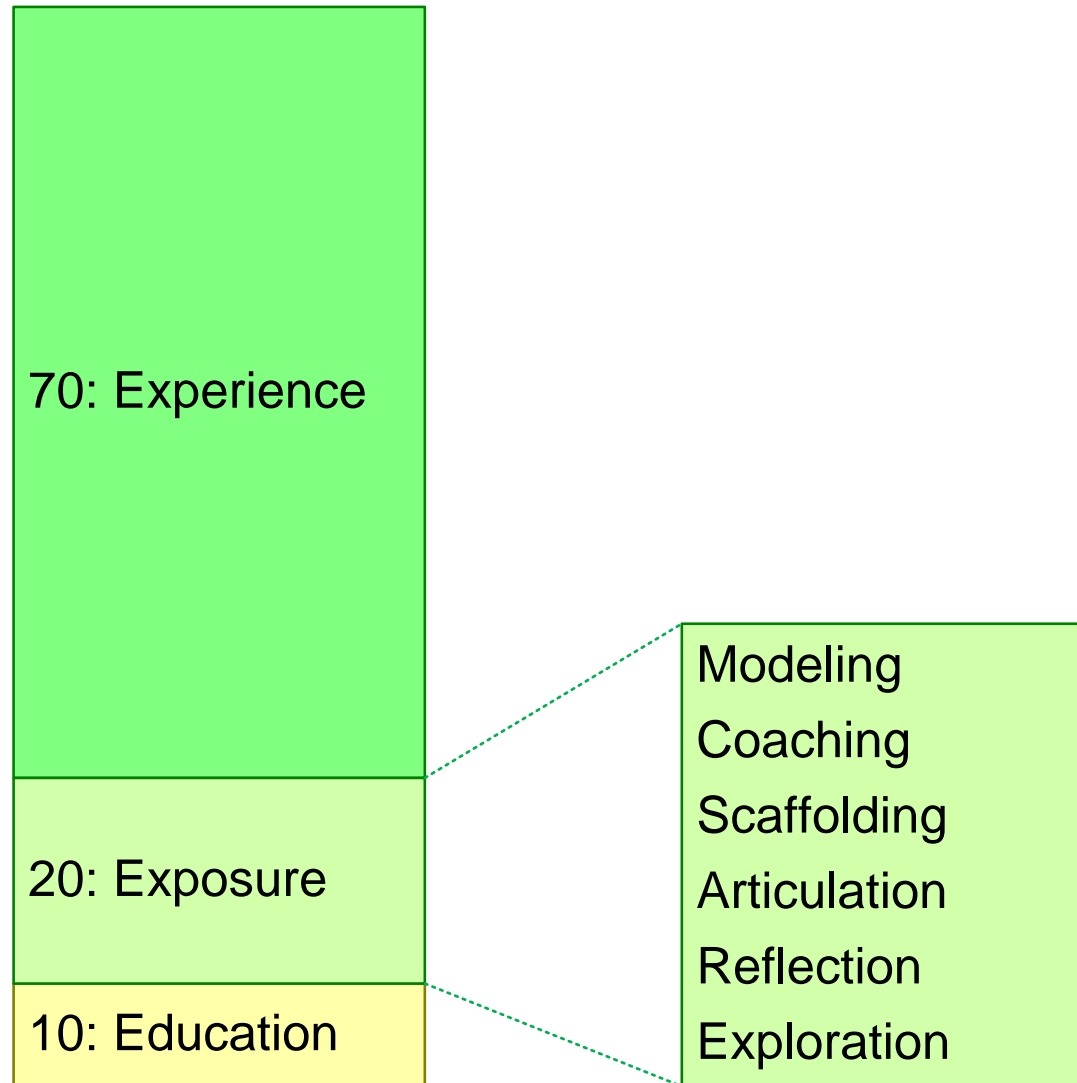
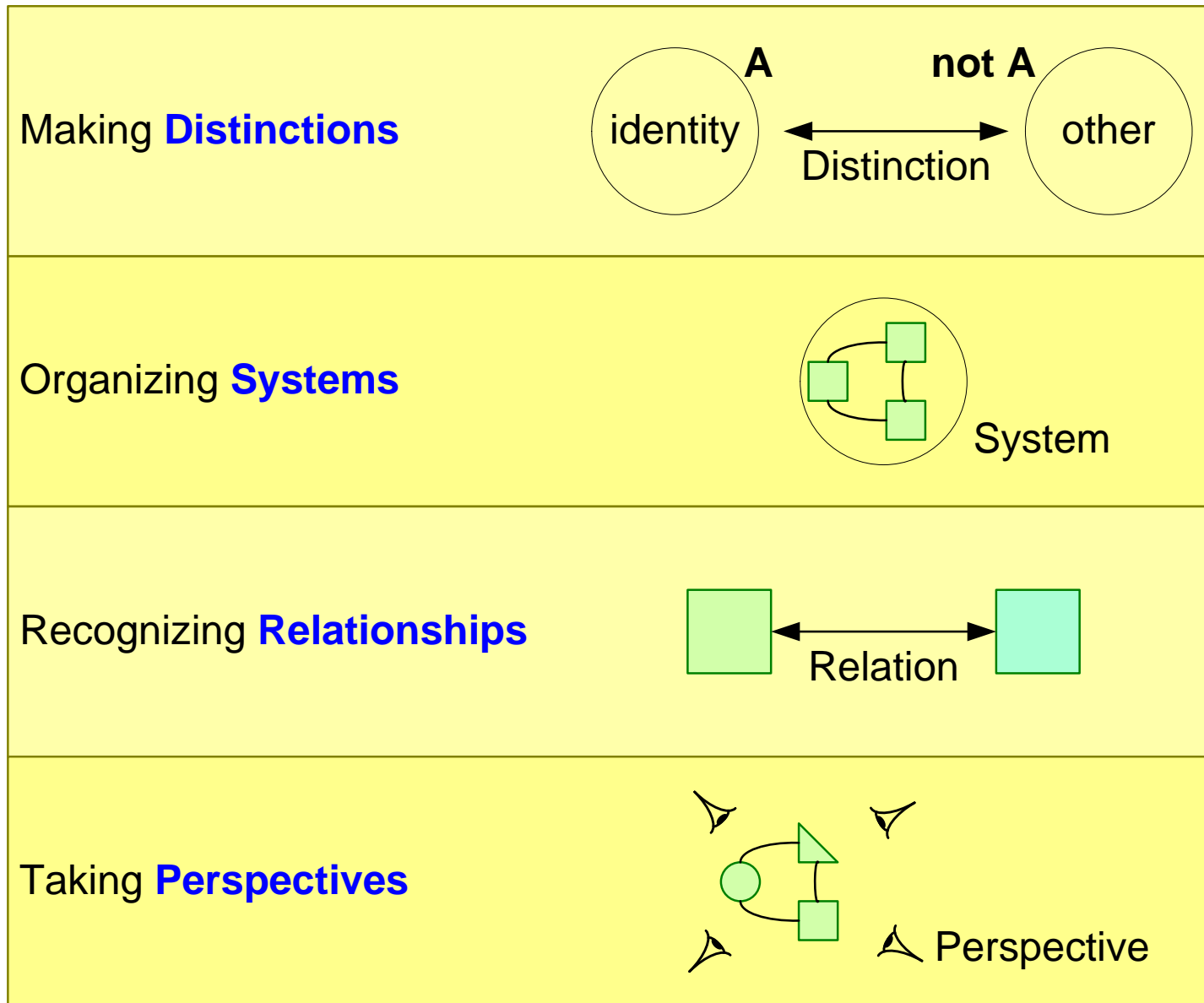# Problem-Based Learning Using Reflection

experiencing

observing

reflecting

applying

testing

analyzing
interpreting
explaining

generalizing

conceptualizing

source: Kolb's learning cycle

http://www.infed.org/biblio/b-explrn.htm

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Role of Experience in Learning

70:20:10 learning model

70: Experience	
20: Exposure	Modeling Coaching Scaffolding Articulation Reflection Exploration
10: Education	

https://en.wikipedia.org/wiki/Cognitive_apprenticeship

DSRP Model

DSRP model

Making **Distinctions**

A   **not A**

identity ⟷ other

Distinction

Organizing **Systems**

System

Recognizing **Relationships**
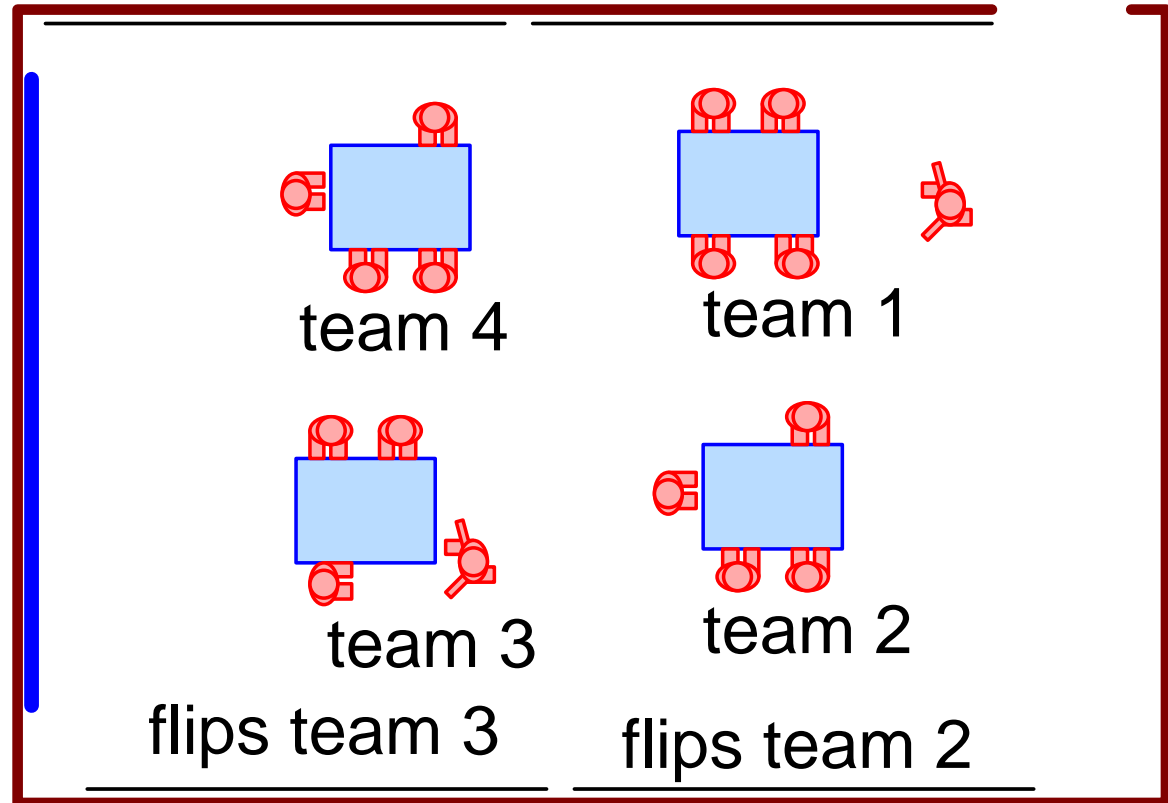
Relation

Taking **Perspectives**

Perspective

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Separate Reflection Wall

mental switch
from problem/system
to "meta"
how, what, why?

reflection
wall

flips team 4

flips team 1

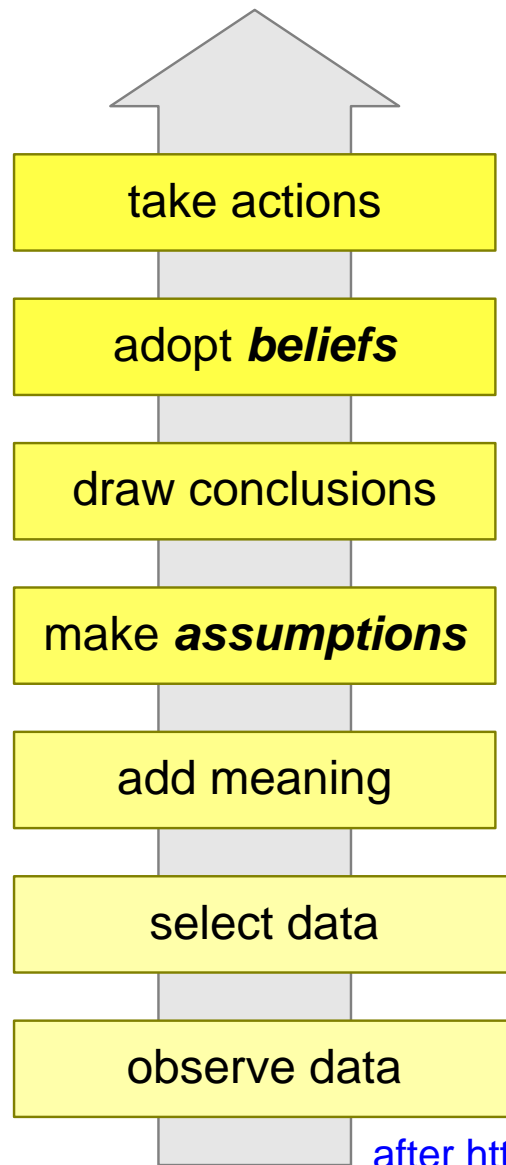team 4

team 1

team 3

team 2

flips team 3

flips team 2

Scope and Topic of Reflection

technical

psychosocial

means
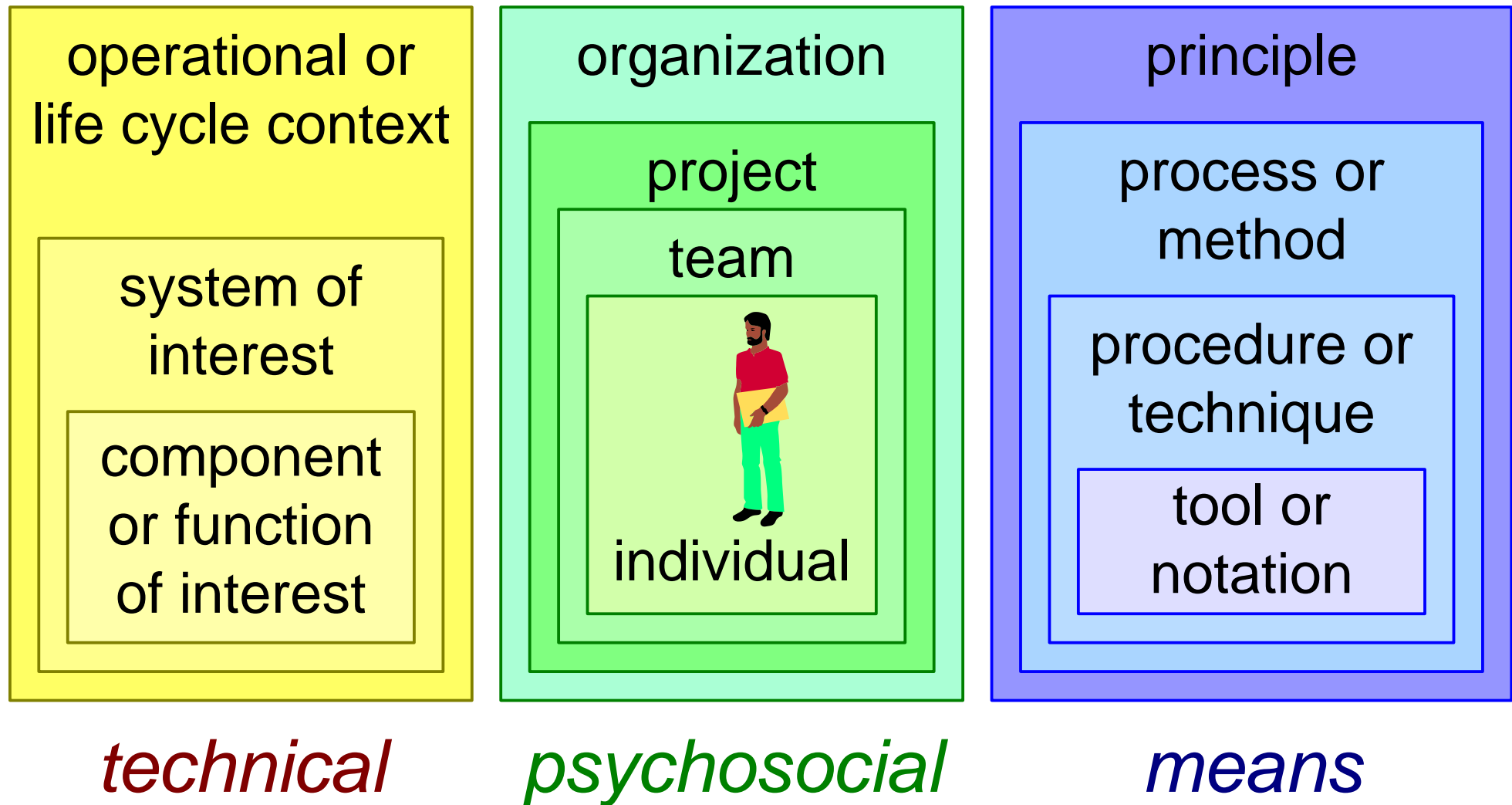
The Role of Assumptions and Beliefs in Thinking

take actions

adopt **beliefs**

draw conclusions

make **assumptions**

add meaning

select data

observe data

reflexive loop

beliefs influence
what we observe

The "Ladder of Inference" originally proposed by Chris Argyris and developed by Peter Senge and his colleagues [The Fifth Discipline Fieldbook] illustrates how these biases can be built into our thinking.

https://pivotalthinking.wordpress.com/tag/ladder-of-inference/

after https://pivotalthinking.files.wordpress.com/2011/11/plain-inference.png

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