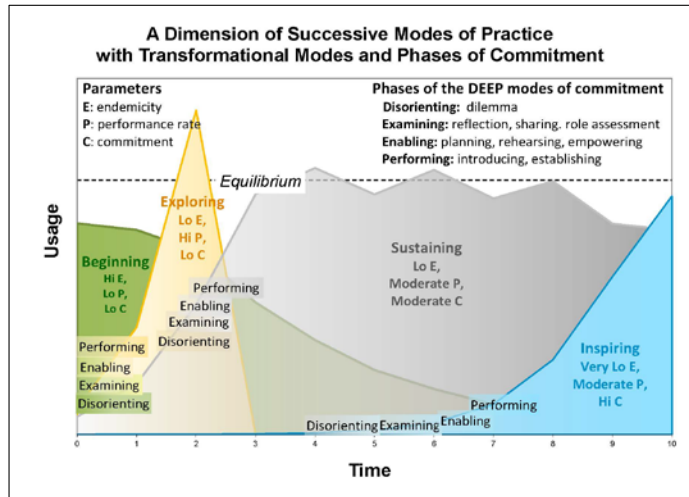


Organizing Cognitive Research Questions with an Eleven-Level Nested Hierarchy of Practice*

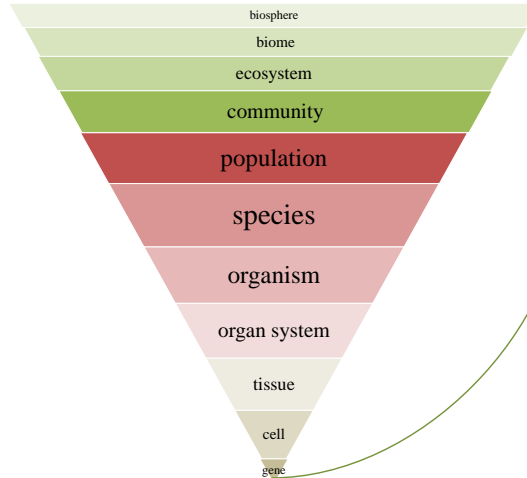
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The Nested Hierarchy of Practice



Biological Analogy



Methodological Implications

Cognates	Observables	Inferables
Holistic knowledge	Integration of known praxomes	Civilization
Progressive methodology	How experts make discoveries, innovations, or precedents	Culture which individuals seek to preserve and enhance
Discipline	Common discipline or trade (c.f. 4-digit ISCO code)	Formation of community with which individuals identify
Specialty or sub-discipline	Keywords used for description	Common identification as specialty
Course levels	Beginning, exploring, (destructive), sustaining, or inspiring practice	Endemicity, performance, and commitment.
Competency	Deliberate practice (c.f. Ericsson)	Giant component of integrated procedures
Learning goal	DEEP modes of commitment	Vision, implementation, collaboration
Learning outcome	Phases within DEEP modes of commitment (c.f. Mezirow)	Intentional response
Learning objective	Repetitive performance	Long term memory
Schema	Integration of sensorimotor systems	Short term memory
Conditioned social response	Cultural objects and persons	Sensations and surprise (c.f. Piaget)

Selected Praxomics Research Questions

- Praxosphere:** How can we quantify changes in the praxosphere?
- Praxosphere:** What criteria will distinguish human from machine modes of practice?
- Praxome:** Are there more praxomes (progressive methodologies) than science, design, and interpretation?
- Praxosystem:** How are resources replenished and stored for different modes of practice?
- Cluster:** Do inspiring modes of practice sustain exploration?
- Dimension:** What is the rate of flow of the common modes of practice from one dimension to another?
- Mode of Practice:** Are mutually beneficial modes of practice affected by the design of praxosystems?
- Mode of Practice:** What impact does the flow of common modes of practice have on discovery, innovation, and interpretation?
- Mode of Commitment:** How do the modes of commitment change over time?
- Mode of Commitment:** What characteristics of procedures facilitate or inhibit adaptation to new modes of practice?
- Phase of Commitment:** What starts, stops, or redirects transformative learning?
- Procedure:** Can the rate of oscillation between modes be an indication of acquisition problems?
- Actuation:** How have the actuations changed across time and cultures?
- Circular Reactivity:** How many circular reactivities are there?

* from Dirlam, D. K. (2017). *Teachers, Learners, Modes of Practice: Theory and Methodology for Identifying Knowledge Development*. (see www.routledge.com/9781138641181)