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Teaching for Transformation: Five Dimensions for Promoting Critical Thinking

We often struggle to prompt critical thinking in students while covering content. But best practices globally come down to five dimensions that can connect specific disciplinary content with inspiring learning experiences: free play, foundational terms and structure, scientific reasoning, meta-reflection, and holistic integration.

Every discipline lenses those dimensions through its own version of Perception, Evaluation, Decision and Action (Lauer, 1996-97), and applies its framework to personal, professional and civic life.

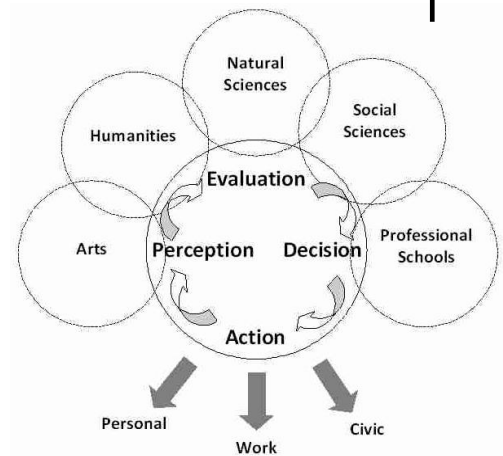
By giving practice at using skills across the range of a continuum, rather than only the pet ones we know best, we can help our students balance often-competing ways of knowing, apply learning in new situations and the real world, and build habits of personal transformation.

Practices to remember include:

- Make learning goals general enough to be *important*, but specific enough to *measured*; enduring but able to evaluated now (“How do I know they’re learning?”)
- Specify criteria: what you physically look for that indicates excellence
- Make students learn by teaching others
- Build in reflection (portfolio) on their own development, and the point of it all
- Mix up your methods: Access multiple learning styles (Visual, Kinesthetic; Introvert, Extrovert; etc.)

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Teaching integratively continuum: Both ends matter

Facts	Relationships, structures
Tell what need to know	Develop thinking beyond any discipline
Singularities	Multiple views, contexts
Grade, assess	Coach, comment
Complete assignment	Ask questions, reflect, create
Do, achieve, results	Be, ask why, enjoy process
Get it right	Make mistakes

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Torosyan, Lauer	1-D Sensory: sense, feel, intuit	2-D Categorical: sort and standardize sensations		3-D Relational: research, theorize and test categories		4-D Meta-reflective: transform framework used to research and theorize		5-D Integrative: unify subject and object
Bloom's taxonomy		Remember: Recall terms and ideas	Understand: Grasp meaning	Apply: Use learning in new situations	Analyze: See patterns; compare and contrast	Evaluate: Assess evidence	Create: form one's own approaches or theories	
Piaget's stages	Sensorimotor: see objects	Pre-operations: use symbols and language	Concrete operations:	Formal operations: test hypotheses, think systematically		Post-formal operations: relate reasoning systems to each other		
Perry's positions		Dualism: "Just the facts, ma'am"	Multiplicity: "pick an opinion, any opinion"	Relativism: "bullshit" to play "teachers' games"	Commitment within relativism: choose and mix paradigms			
Baxter-Magolda's ways of knowing		Absolute: knowledge is received (women) or mastered (men)	Transitional: women dialogue; men debate	Independent: females gain voice but value exchange; males value own thinking	Contextual: share responsibility for constructing others			
Kegan's orders of consciousness	Impulsive: subject to impulses, perceptions	Imperial: attend to impulses, subject to individual's needs, interests, desires		Interpersonal: attend to needs, subject to interpersonal relationships and mutuality		Institutional: attend to relationships, subject to individual's authorship, identity and ideology		
Wilber's quadrants and levels	Magical-animistic: preconventional, premodern, body, instinct, sensation. "me"	Mythic-conformist: symbol, power, civilization, culture, self-protective, conformist		Rational-scientific: conventional rules; modern, formal, empirical study, mind, ethnocentric/"us"		Pluralistic: postconventional; postmodern; intersubjective; meta-systemic		Integral: spirit, global, transcendent interconnection, "all of us"



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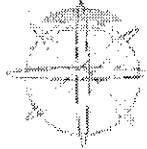


	1-D Sensory	2-D Categorical	3-D Relational	4-D Meta-reflexive	5-D Integrative
Key operations	Sense, feel, intuit	Sort, standardize	Research, theorize, relate	Transform frameworks used to research and theorize	Consciously unify separation of subject & object
					
Pathways provided	Alive to external and inner data	Achieve order, structure	Adjust theory, notice perspective	Step back from framework behind how one changes	Integrate body, mind, spirit; transcend language
Pitfalls risked	Assume only one's own feelings are justified; seek only immediate gratification	Force facts to fit theory; presume others are wrong	Stuck in framework behind <i>how</i> one changes theory	Limited by language; create separation	Limited clarity, distinctness, or closure
One takes as an object for consideration	(Not applicable: Subject and object are undifferentiated)	Observations, impulses, intuitions	Assumptions used to achieve order	Framework behind adjusting of theory	Intervening language used to step back from framework
One is subject to	Observations, impulses, intuitions	Assumptions used to achieve order	Frameworks behind adjusting of theory	Intervening language used to step back from framework	Blurring of people, systems, boundaries

Figure 9. Five Dimensions of Thinking, Learning, and Living

Midterm Integrative Reflection Instructions

Goals: Review your progress on the course's learning goals and show:

- a) What examples from your work **meet the course's objectives** for learning to think philosophically?
- b) How have you **applied philosophical thinking** to your life (personal, professional, civic)?
- c) What goal or two do you most want to work on for the **rest of the term**?

Steps:

1. Write about the most powerful examples where you applied questions and concepts to life:
 - a. Reread all your writing and all responses to it or related to it (including responses to responses, whether by me or others; this can mean threads not directly attached to yours, but related in content)
 - b. Give concrete examples from your personal, professional and civic life (all three)
 - c. Demonstrate how these each meet some of the learning objectives (from syllabus)
 - d. Quote your own writing or that of others as evidence, or write about examples not yet shared in coursework

2. Review this written reflection using the following criteria for evaluation:

Foundations/basics:

- follow all instructions
- make writing grammatically correct
- represent philosophical principles accurately and consistently (**2-D terms & structure**)

Clearly and compellingly written:

- Use active verbs
- Cut needless words
- Write about what you care about most (**1-D felt sense**)
- Give concrete examples (**3-D relating**)

Reflective and integrative:

- Question assumptions and points of view, including your **own**; show how you learned from your own **mistakes (4-D reflection)**
- Demonstrate course objectives by some combination of your examples (**3-D relating**)
- Think about *why* you conclude the way you do; give your **reasoning (3-D relating)**
- Specify how you'd know you **achieved** the goal you specified a year from now (**5-D holistic**)

3. Add a **Self-Assessment** afterwards, rating your performance 0 to 4 where 4=A, 3=B, 2=C, 1=D, 0=F, as follows:

4 Outstanding Evidence exists for 90% of the above criteria and throughout 90% of the writing.

3 Superior Evidence exists for 80% of the above criteria and throughout 80% of the writing.

2 Acceptable Evidence exists for 70% of the above criteria and throughout 70% of the writing.

1 Minimal but passing Evidence exists for 60% of the above criteria and throughout 60% of the writing.

0 Unacceptable Evidence exists for less than 60% of the above criteria and/or throughout less than 60% of the writing.

	1-D Sensory	2-D Categorical	3-D Relational,	4-D Meta-reflective	5-D Integrative
Art History	Frivolity; "primitive" anthropomorphic forms	Contrast; juxtaposition	Historical context; modernist revolution	Dadaist break; postmodern turn	Return to beauty, participant art
Philosophy	Play as a virtue; the value of selfishness	Ideals; mind-body dualism; categorical imperative	Empiricism; fact vs. inference; ethic of care	Paradigm shift; language & power; deconstruction	Taoist paradox; Sri Aurobindo; mindfulness
Psychology	Observation; primary impulse	DSM-IV categories of disorders; variable	Data analysis; differential diagnosis	Critical psychology; positive psychology; eclecticism	Integral psychology

Figure 10. Curriculum and Content Across Disciplines

Pedagogy/ Methods	1-D Sensory	2-D Categorical	3-D Relational,	4-D Meta-reflective	5-D Integrative
Writing	Free writing	Describe a thinker or a problem's elements; compare and contrast	Write-Pair-Share; Pass the sheet; list more than one possible solution	Take a point of view opposing your own; write 100 questions and self-assess	Write haiku; capture spirituality with indirect language
Classroom discussion, group work	Play games, discuss spontaneously	Use ground rules, order ideas, give mini-lectures	Her from as many as possible; divide labor among groups; post-it ideas up on wall chart	Leverage the wildly differing styles in class; move post-its to suggest new patterns	Resonate with the group as a whole; hear not just words, or even intent, but hidden messages
Visual devices	Doodle, scribble, line, shape, to play with visuals	Draw a symbol for a concept, draw chart for contrasting movements or approaches	Illustrate inter-dependent variables with visual displays of information (Tufte, 1990)	Reframe using a different shape; extend boundaries of a chart or illustration	Find the edge of a hole; use perceptual devices that "trick" the eye
Objects and bodily-kinesthetic movement	Feel objects	Sort objects; learn foreign language using total physical response	Relate different ways of sorting objects	Reshape objects; find patterns to ways of relating sortings	Do a gallery walk; use body sculpture to express learning
Virtual reality, augmented reality	Chat freely; move avatars or objects in virtual space	Build virtual molecule	Nursing; see veins better with visual augmentation	Reorient a virtual space or site	Simulate psychedelic experiences

Figure 11. Pedagogical Methods Across the Dimensions

VALUE Rubric: Integrative Learning

DEFINITION

Integrative learning is an understanding and a disposition that a student builds across the curriculum and cocurriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new, complex situations within and beyond the campus.

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	CAPSTONE (4)	MILESTONES (3)	MILESTONES (2)	BENCHMARK (1)
Connections to Experience <i>Connects relevant experience and academic knowledge</i>	Meaningfully synthesizes connections among experiences outside of the formal classroom (including life experiences and academic experiences such as internships and travel abroad) to deepen understanding of fields of study and to broaden own points of view.	Effectively selects and develops examples of life experiences, drawn from a variety of contexts (e.g., family life, artistic participation, civic involvement, work experience), to illuminate concepts/theories/frameworks of fields of study.	Compares life experiences and academic knowledge to infer differences, as well as similarities, and acknowledges perspectives other than own.	Identifies connections between life experiences and those academic texts and ideas perceived as similar and related to own interests.
Connections to Discipline <i>Sees (makes) connections across disciplines, perspectives</i>	Independently creates wholes out of multiple parts (synthesizes) or draws conclusions by combining examples, facts, or theories from more than one field of study or perspective.	Independently connects examples, facts, or theories from more than one field of study or perspective.	When prompted, connects examples, facts, or theories from more than one field of study or perspective.	When prompted, presents examples, facts, or theories from more than one field of study or perspective.
Transfer <i>Adapts and applies skills, abilities, theories, or methodologies gained in one situation to new situations</i>	Adapts and applies, independently, skills, abilities, theories, or methodologies gained in one situation to new situations to solve difficult problems or explore complex issues in original ways.	Adapts and applies skills, abilities, theories, or methodologies gained in one situation to new situations to solve problems or explore issues.	Uses skills, abilities, theories, or methodologies gained in one situation in a new situation to contribute to understanding of problems or issues.	Uses, in a basic way, skills, abilities, theories, or methodologies gained in one situation in a new situation.
Integrated Communication	Fulfills the assignment(s) by choosing a format, language, or graph (or other visual representation) in ways that enhance meaning , making clear the interdependence of language and meaning, thought, and expression.	Fulfills the assignment(s) by choosing a format, language, or graph (or other visual representation) to explicitly connect content and form , demonstrating awareness of purpose and audience.	Fulfills the assignment(s) by choosing a format, language, or graph (or other visual representation) that connects in a basic way what is being communicated (content) with how it is said (form).	Fulfills the assignment(s) (i.e. to produce an essay, a poster, a video, a PowerPoint presentation, etc.) in an appropriate form.
Reflection and Self-Assessment <i>Demonstrates a developing sense of self as a learner, building on prior experiences to respond to new and challenging contexts (may be evident in self-assessment, reflective, or creative work)</i>	Envisions a future self (and possibly makes plans that build on past experiences that have occurred across multiple and diverse contexts).	Evaluates changes in own learning over time, recognizing complex contextual factors (e.g., works with ambiguity and risk, deals with frustration, considers ethical frameworks).	Articulates strengths and challenges (within specific performances or events) to increase effectiveness in different contexts (through increased self-awareness).	Describes own performances with general descriptors of success and failure.

A PDF of this and all VALUE Rubrics can be downloaded from www.aacu.org/value/rubrics