

Creative Engagement: Embodied Meaning-Making as a Challenge to the Paradox of Emotion-less Learning

Ross Anderson

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Abstract

In this essay, I reformulate the problem of learner engagement in school to look beyond the *need* for autonomy, belonging, and competency suggested by current theories in educational psychology. Through this reformulation, I will present some implications of an overarching need for meaning-making through mind-body interaction with learning stimuli in a social environment. To provide context, I employ a theater-based pedagogical tool, called *tableaux vivants*; this example illustrates how multisensory creative learning shapes meaning-making for the learner. As a backdrop to this illustration, I will provide rationale through the philosophical and neuroscience underpinnings to an embodied perspective. After drawing a comprehensive picture of *tableaux vivants* enacted in a science classroom, I will connect to perspectives on creativity and summarize through a new way to conceptualize both the problems and solutions to learners’ engagement in learning in school.

Meaning-Making

As Dewey pronounced, *everything is becoming*. Selves are simply processes of experiences; experiences establish new potentials for meaning; meaning is the foundation of understanding mind; and mind is no way distinct from body. Dewey stressed that the critical element of meaning does not draw on what an interaction or object *immediately* is but rather what it *makes possible*. In this way, meaning is both relational to the qualities and structures of objective situations from the past and *instrumental* to our future actions and thoughts. As current theories in neuroscience reinforce (Edelman, 2004; Damasio, 2010), meaning is a matter of discrimination (both conscious and unconscious) between the felt qualities of changes in the environment and changes in the body in response to the environment. Meaning-making is the selection or felt sense of some qualities, but always in relation to those not selected, either from the past, present, or imagined future. Within a pragmatic and embodied philosophy, meaning is emergent not static and knowledge held by a knower contributes to meaning. From perspectives in neuroscience (Damasio, 2010; Edelman, 2004), meaning of an object is different than the mental representation—recalled, perceived, or anticipated—of an object in the environment.

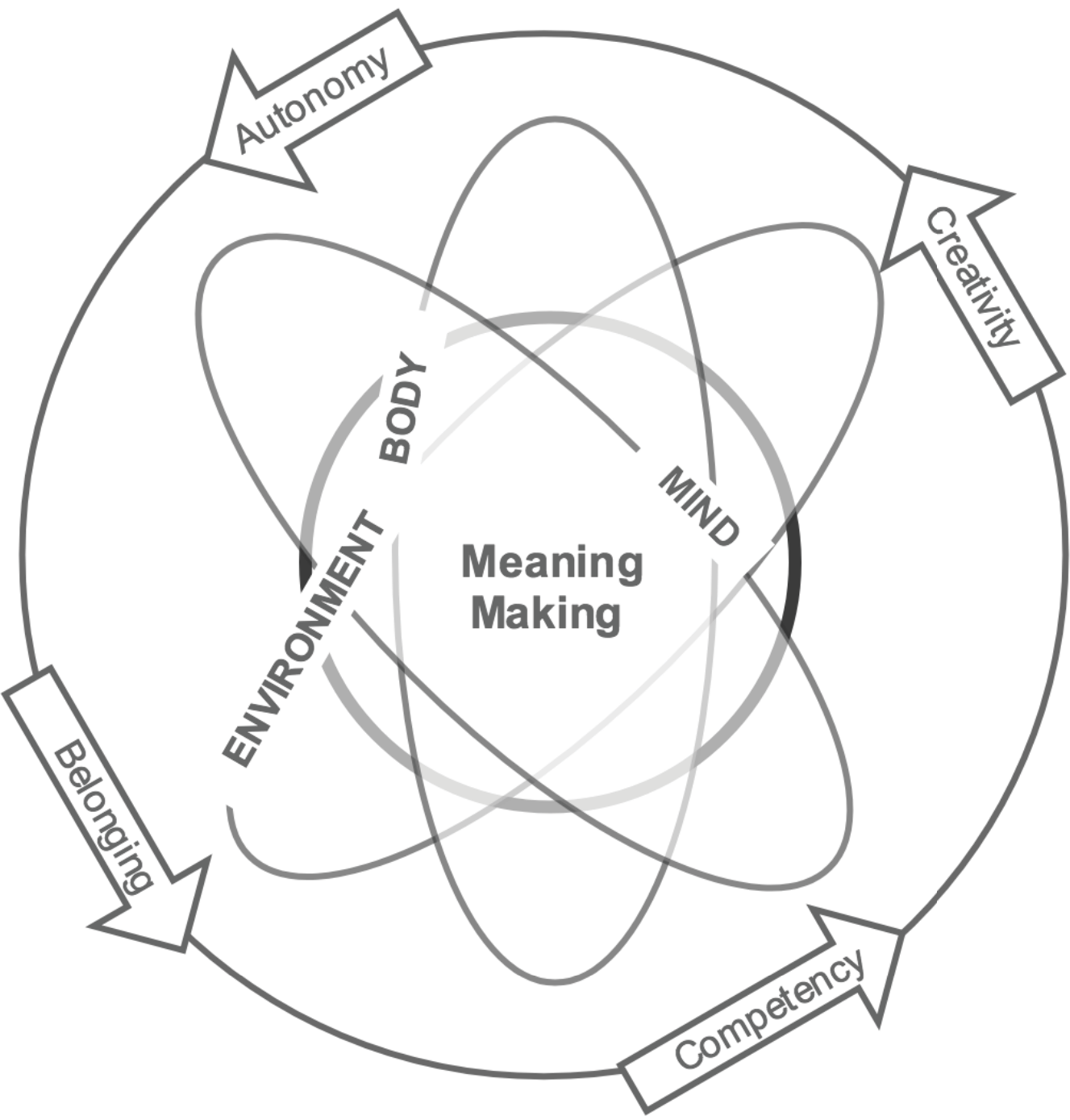
Methods

In its enacted form, tableaux vivants requires one or more actors to create a scene or incident for an audience, remaining silent and motionless during each scene. Actors can select to move through a sequence of static scenes. The silence generates a sensory deprivation that draws on other rich modalities to grasp and express meaning to produce layers of complexity. To use a tableaux vivants in expression of a word, concept, or story, actors must enact and express physical simulation of the sights, smells, sounds, textures, and tastes that signify the idea. These expressions require a multisensory enactment of the idea to explore nuances of the concept—the actors create an environment of meaning. Tableaux vivants compositions include aesthetic choices for proximity of actors, facial expression, implied motion, shape/flow, contrasting levels, focal points, bodily gesture, and orientation to audience, among other possible textures. When this technique is used in an integrated way to enliven the experience of an academic content area, such as science, the opportunities for rich meaning-making take on new possibilities. As I explore further in this study, theories from neuroscience reinforce the potential of a practice like tableaux vivants, where multiple sensory systems are at work and emotions are aroused in the construction of meaning. This heightened potential of neural bindings in the brain strengthens the relation of meanings, values, and purposiveness of actions and thoughts. In the case that I explore throughout this essay, a diverse class of sixth grade students undertakes the challenge of representing their understanding of science concepts, such as evaporation and other chemical reactions, through a sequence of tableaux in front of their peers.

Conceptual Map

My framework incorporates current theories from neuroscience. Gerald Edelman suggested that “the essential issue to grasp is that the reentrant circuitry underlying consciousness is enormously degenerate. There is no single circuit activity or code that corresponds to a given conscious ‘representation’” (2004, p. 106). What Edelman termed *degeneracy* indicates that different mind-body neural mapping processes will produce the same results in countless different ways because the number of neural inputs is so high that the neural processes learn to generalize. In the term *reentrant circuitry*, Edelman referred to the reciprocal connections and communications across different systems in the brain. Each system contains functionally segregated activities that work together to build perceptual maps. In light of this theory, concepts generalize using this same process when meeting ambiguous or novel inputs from the world. Theoretically, the more sensorimotor and relevant emotional inputs connected to a learning process, the wider the scope of possible mappings to represent the concept in the future in meaningfully novel ways. When the learner is fully aware of the environment—including an audience of her peers—the felt quality of her experience is heightened and the emotional cascade of anticipation, nervousness, excitement, and relief strengthens the neural mappings that represent the concept she works to grasp. According to Immordino-Yang, these emotions, serve as a *rudder*, helping the learner recognize and call up knowledge.

My framework bridges to psychology using a model of learner engagement (Fredricks, Paris, Blumenfeld, 2004) that includes three factors: *need for belonging*, *need for autonomy*, and *need for competence*. I propose that the *need for meaning* should take precedence in the way that we consider learner engagement—a reflection of Dewey’s ultimate value of growth. Building on Ron Beghetto’s (2016) model of creative learning, I propose that the process of everyday creativity within formal education be conceptualized around individually embodied meaning-making. This idea builds on decades of researchers who have suggested that creativity and learning represent much the same thing (e.g., Guilford, 1967; Sawyer, 2012). Beghetto’s model distinguishes between different degrees of creativity; this differentiation validates individual interpretations and ideas that a learner may act on in everyday learning. Moreover, Beghetto’s approach made the distinction between *creativity-in-learning*, where personally meaningful interpretations are made, and *learning-in-creativity*, where this interpretation contributes to the meaning-making of others.



Tableaux Vivants

Given Dewey’s (1925) description of experience as dramatic enactment and William James’ (1890) idea of mind being composed of *pulses of thought*, tableaux vivants, or living picture, provides a fitting illustration of how to conduct meaning-making through artistic, physical metaphor when learning abstract concepts and ideas. To Johnson (2007a), learning the meaning of something, such as the abstract concept of evaporation, builds on a developing sense of its felt qualities and the emotional response evoked. Picture yourself as a 6th grade student conceiving a tableaux scene with several peers with the aim of expressing the heat energy required for the chemical reactions of evaporation to take place. You read about the propositional characteristics of the process and share perspectives on what the scientific process calls to mind. Qualities of evaporation are selected and bodily forms are envisioned that express those qualities (e.g., dried puddles, fog, sun, etc.). Conceptual metaphor through an embodied enactment is underway.

When the 6th grade learner faces the ambiguous task of envisioning and enacting the process of evaporation in tableaux with her peers, the novelty of the experience may at first be felt as a hindrance. Perhaps she has never done this before, doesn’t know her peers well, or isn’t sure what the teacher really wants. Her idea that evaporation *feels* to her like the shriveling of a grape into a raisin produces a felt quality to the meaning of the concept that can expand the reference to new situations for her and her peers. Once she enacts the tableaux representing kinetic energy of heat and water vapor, the felt qualities of evaporation creates a web of meaning—a fishnet with a focal point and a fringe of faint feelings and memories. Enacting the environment for evaporation—the hot sun, a grape shriveling into a raisin, and the upward motion of vapors rising—the multisensory experience shapes meaning, sustained through somatic (emotional) markers.



Our own bodily position, attitude, condition, is one of the things of which some awareness, however inattentive, invariably accompanies the knowledge of whatever else we know. We think; and as we think we feel our bodily selves as the seat of the thinking. If the thinking be our thinking, it must be suffused through all its parts with that peculiar warmth and intimacy that makes it come as ours.
~James, 1890, p. 242

Mapping Qualia

As Damasio described, we are born cartographers. *Images* formed and used by the brain are not just visual; images are the mental patterns in any of the sensory modalities—touch, feel, taste, sight, and sound. After performing the tableaux depicting evaporation as a shriveling piece of fruit in the sun, the 6th grade science learner calls on a myriad of images when she sees the term evaporation on a test—including the light background hum that her group member makes to accompany her shriveling gesture. The images that form when recalling the meaning of evaporation contain physical characteristics as well as the somatic emotional markers. A web of perceptual maps whose relationships form a layered conceptual map represent the object at hand—the word *evaporation*. For our mind-body to build these perceptual maps requires a multisensory surveillance of the bodily feelings and the environment—the power of discrimination between the qualia, or felt quality, of one situation from another. Our first-order maps are of the body and the environment, the primordial feelings and the dynamic core; the second-order maps present an awareness of body changes. As Edelman suggested, this discrimination of the qualia of one moment is always in reference to other qualia. Thus, there is a large difference between a learner enacting the felt quality of evaporation and memorizing the definition through language, only.

Assertions

Integrating the fields of philosophy of mind, creativity, educational psychology, and affective neuroscience, I propose the model of *creative engagement* as a path forward for what the field may attend to in both instructional design and research about effective learning. I presented a thorough account of an embodied approach to meaning-making, briefly discussed the theories and evidence from neuroscience that support the embodied perspective, and anchored those discussions to an aesthetically integrated learning experience in a 6th grade science class. I present several assertions that bridge from elements of learner engagement to creative learning and an emergentist and embodied philosophy of mind.

- ! A sense of *autonomy* requires that a learner’s mind-body be given time and space to think and *feel* through movement and other modalities in the process of meaning-making. A learner has autonomy when they can connect emotionally with content and ideas without the risk of ridicule or rebuke.
- ! A sense of *belonging* requires that a learner’s mind-body be free to make and express meaning in multiple modes with assurance that the community of learners will make effort after meaning in evaluating unique and perhaps discrepant interpretations.
- ! A sense of *competency* requires that a learner’s mind-body develop the skilled intuitions and habits that shape a personal, emotionally integrated and flexible cognitive orientation to learning stimuli. Though unique to the individual, this flexibility has the common target of continuously furthering the learner’s mind-body capacity to discriminate at higher levels in the meaning-making process.