THINKING THROUGH THE BODY:
THE "ECO-MINDSTORMING" APPROACH

PENSARE ATTRAVERSO IL CORPO:
L'APPROCCIO "ECO-MINDSTORMING"

Laura Cancellara
Heracle Lab - Educational and Sports Neuroscience
Università degli studi Niccolò Cusano-Telematica Roma
lauracancellara@gmail.com

Marika D'Oria
Open Innovation Unit
Scientific Directorate
Fondazione Policlinico Universitario "A. Gemelli" IRCCS, Rome, Italy
marika.doria@policlinicogemelli.it

Abstract

The recent pandemic led the educative world to radically rethink the teaching setting. The goal of this article is to analyze an embodied simulation strategy (the Walt Disney method) as an experiential technique of dramatization in media distance learning contexts. The eco-mindstorming approach is presented, included in the embodied cognition framework read in the light of the neuroscientific discoveries of mirroring systems and the ecological nature of learning processes. This approach, which has an ecopedagogical matrix, aims to facilitate innovative, creative and stimulating teaching-educational strategies (e.g., virtual role playing, embodied simulation) to enhance cognitive-bodily and metacognitive functions and skills, as well as affective and socio-relational skills through play.

La recente pandemia ha portato il mondo della formazione a ripensare radicalmente il setting didattico. L'obiettivo di questo articolo è di analizzare una strategia di *embodied simulation* (il metodo Walt Disney) come tecnica esperienziale di drammatizzazione in contesti di Media distance learning. Si presenta l'approccio *eco-mindstorming*, inserito nel framework dell'*embodied cognition* letta alla luce delle scoperte neuroscientifiche dei sistemi di mirroring e della natura ecologica dei processi di apprendimento. Tale approccio, di matrice ecopedagogica, intende facilitare strategie didattico-educative innovative, creative e stimolanti (es. role playing virtuale, *embodied simulation*) per potenziare funzioni e competenze cognitivo-corporee e metacognitive, oltre a skills affettive e socio-relazionali attraverso il gioco.

Key words

distance learning environment; embodied simulation; eco-mindstorming; inclusion.
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1. Introduction

The COVID-19 pandemic brought the world in a global crisis. Social distancing required people adopting new strategies to survive and thrive during this situation. Indeed, the crisis hit education too highlighting that school fulfills its mission in developing knowledge and social needs. The situation required students and teachers using digital resources, and despite the internet provided virtual interactions and learning opportunities, the lack of a shared physical space created was a barrier. During a lesson, students learn social and emotional abilities like participation, self-confidence, compassion, and responsibility (Colao et al., 2020). Thus, the educative world is called to find sustainable resources for body and mind wellbeing to reconcile the interior, social, and exterior nature of human beings.

An interesting strategy is the creation of a "fictional dimension" where it is possible to act "as if" we were someone else, to experiment ourselves differently by playing with our epistemological assumptions in a protected environment (Massa, 1987). The family of simulation strategies is divided into two main domains: the actual simulation and the dramatic identification in action. The first has a more conceptual and theoretical value; it varies from a less structured form of a rhetorical *exemplum fictum* ("let's assume that") to a more sophisticated computer simulation (e.g., training in professional settings; see Deng et al., 2018). The second one belongs to dramatization: students identify themselves with specific characters in certain situations and behave accordingly (e.g., role playing; see Capranico 1997). While the simulation of the first type finds specific application forms in andragogy, role playing has greater applications in education bringing the student to perceive the connection between attitudes, emotions and thoughts in personal relationships.

In this article, we propose the eco-mindstorming as an embodied simulated approach to distance and physical learning: to show the practical application of this approach, we will analyze the Walt Disney method by Robert Dilts (1994) as an example of strategic thinking through embodied simulation.

2. Epistemological framework

Educative phenomena are complex by nature. Several variables play pivotal and marginal roles during a lifetime, therefore the description of some situations (such as a job-related episode, the story of a family, the difficulties of a child, the linear behavior of an adult, a paradoxical situation to be solved, etc.) should be carefully considered from different perspectives. Sometimes, it is not always possible to have a feedback from a peer nor a supervisor, and this is particularly true during isolation and social distancing.

Addressing this scenario to an ecological thinking opens new emerging paradigms that provide quality, equity and inclusivity in education, as an opportunity of "educational care" and learning for all (United Nations, 2015). Ecological thinking is an epistemological position that requires renewed perspectives during the transformation of the socio-cultural context (ecological awareness): from the advent of digital media to the implementation of innovative learning styles and rhythms, from the development of new e-learning contexts to the fulfillment of professional updated needs (Rivoltella and Rossi, 2017).

The eco-formative aspect is relevant for the formative process. In fact, ecological thinking represents a complex and articulated reflection-action on the immense possibilities of learning from experiences and contexts, in relation to both natural and virtual environments. This reflection-action has developed important discussions on the serious ecological crisis that our planet is going through, enabling critical consciences to assess the impact on the environment of human actions and policies, with the aim of implementing forms of relationality focused on the "co-belonging" and "conviviality" (Illich, 2013) of all living beings and systems. Ecological thinking is based on a system that links at least three fundamental human instances: the biological instance, the cognitive-emotional instance, the ethical-existential instance. This perspective opens to the complex reading of life circumstances and experiences of man-nature unity. In

this sense, the environment is a precious source of learning where the biological-evolutionary history and cultural history of humanity are written and preserved (Frabboni and Pinto Minerva, 2014).

An exercise to develop ecological thinking is the double/multiple description (Bateson, 1979), that composes different levels of reality through their hierarchical relationships. For example, the combination between body and mind can generate multiple descriptions aiming at increasing the level of complexity and interconnection of perspectives about a phenomenon. Since body and mind cannot be separated, it would be useful to understand their interplay in a more practical way (Corbella, Ferri and Gamelli, 2020), even if multiple description always considers the ineliminability of the observer's point of view.

Therefore, education can be understood in terms of embodied engagement and functional coordination with practice (Biesta & Burbules, 2003) since the actions of students and teachers acquire an ecological meaning in formal (family, school, cultural institutions, local authorities) and informal (digital environments, natural parks, outdoor laboratories) contexts.

2.1. Embodied simulation

According to the studies on mirror neurons, imagination plays a crucial role in understanding others (Gallese, 2005a), and it is defined here as the production of mental images originating from the activation of the sensorimotor schemes corresponding, in turn to the relationships between the stimuli that activate them). Gallese (2005b) aimed at exploring the role of imagination as a process that originates from the basic mechanism of simulation resulting from mirror functioning: we are endowed with a particular class of neurons (multisensory and motor) which are activated when we observe, hear, read or even think about an action, as if we were executing it. Their activation means that we simulate, or mirror, the action we are perceiving in our brain. Gallese used the term "embodied simulation" to describe the mechanism deriving from the specific neuronal function of mirroring actions, intentions, and feelings.

This enactive interpretation of knowledge generation admits the motor nature, therefore embodied, of understanding words, that activates perceptual-motor paths attributable to the experience of the reader. In line with the neuroscientific paradigm, according to which "grasping" the meaning of a text requires imagining what the text is talking about through a "modeling" process generated by motor resonance mechanisms (Lakoff and Johnson, 1980; D'Oria, 2017), the functioning of mirror neurons and metaphorical processes allows to use imaginative schemes in countless ways. The visual image created through a linguistic stimulus is therefore considered the equivalent of simulating a real visual experience, and the motor image is somehow equivalent to simulating a real motor experience.

This system of direct coupling between visual-auditory data and a sensory-motor circuit that the observer already possesses has been considered by researchers to be the most parsimonious solution to the problem of immediate understanding of the action of others. In fact, it is necessary to predict the consequences of an action (whether performed or simulated) before planning it (Gallese, 2008): the possibility of predicting what will happens (which is equivalent to grasp its purpose) derives from the incorporated motor representation of that action. Since perception, representation and action insist on the same motor chain, the activation of the latter (simulation) involves a direct understanding of the action of others.

Through imagination we can give meaning to others' actions and interactions, as well as mentalizing them by developing a Theory of Mind (ToM). Specifically, the ToM consists in the ability of attributing mental states (beliefs, intentions, decisions, emotions, knowledge) to oneself and to others, and the ability to understand that others have mental states different from our own (Premack and Woodruff, 1978). Researchers showed how developing a ToM is particularly relevant in adolescents, especially for self-knowledge and perception of loneliness (Bosacki et al. 2020). In other words, we exploit the same modeling we use to map our actions to understand the world of the other, through an unconscious, automatic, and pre-reflexive mechanism of motor simulation.

Taking its cue from the ideas proposed by Wojciehowski and Gallese (2011) regarding the possible connections between the Feeling of the Body (FoB) resulting from simulation mechanisms, and the experience of narration as a possibility of sharing people's feelings and emotions, school might foster such sharing by promoting an emotional relationship with the embodied experience.

2.2. Mimetic learning

The principle of identification lies at the basis of human sociality (Freud, 1923) while imitation, cooperation, social learning and teaching are developed through the interaction of biologic and contextual evolution (Laland, 2017). Learning by imitation (mimetic learning) does not consist in mere copying a model, rather it is a process by which enhancing one's own world view, action, and behaviour:

> In contrast to processes of mimicry, which involve a mere adaptation to pre-existing conditions, mimetic processes simultaneously create similarity to and difference from the situations or persons they refer to. By "making themselves similar" to previously experienced situations and culturally formed worlds, subjects acquire the ability to find their way around a certain social field. By taking part in the practices of other persons' lives, they expand their own world and create new possibilities of action and experience for themselves. (Wulf, 2008)

Performative arts in education (Colazzo and Manfreda, 2014) show that exploring embodied learning is not trivial, since it requires a deep awareness of the forms that the body and thoughts assume while performing. Like in a performative exercise, the observer simulates as closely as possible the voice, expressions, movements, sensations and postures of another person (just think of the Stanislavskij method, to name one of the best known): knowledge is not always consciously available, because it is deeply rooted in the culture, values, beliefs and rules we have acquired as embodied experience (Varela, Thompson and Rosch, 1991). By imagining how a person behaves, dresses, moves, and interacts with others, the observer creates a real somatic-cognitive *habitus* (Bourdieu and Passeron, 1970) from his own embodied knowledge (Feldenkrais, 2010). To ground in a posture, observers can ask themselves: "how would this person breathe/sit/walk? What would this person say about that?" and then try to emulate every aspect that comes to mind. Experiencing one's own presence (between lived and perceived corporeity) requires suspending our viewpoint to embrace the other's, and then reconsider our own: since we can never totally go out of ourselves, this movement among perspectives is defined as "eccentric positionality" (or decentralized) (Shusterman, 2012).

This perspective can be reached by voluntarily focusing on some important biofeedback, such as the experiences of "somatic dissonance" such as misalignments, non-spontaneous or even annoying coordination between what we want to perform and what is actually being performed. The dissonance highlights how everyone incorporates several norms, beliefs, values that determine and sometimes limit personal expression and development (D'Agata, 2014). Starting from the examination of these lenses, it is possible to open new perspectives and narratives on the experience as the result of multiple relationships between organism and environment.

2.3. Situated knowledge

Another fundamental aspect of knowledge is its situational nature. The actor-environment transaction focuses on the influence of contextual conditions on human action. Biesta and Tedder (2006) refer to the latter as "an understanding that always includes actors-in-transaction-with-context, actors acting through an environment rather than simply in an environment".

Since the '90s, Lave and Wenger (1990) recognized learning as a dynamic process of sharing with the context and with others, thus, not a purely individual experience. What is learned is not just the outcome of an emulation of our peers but the result of being involved in practical

situations (the Deweyan "learning by doing"). The context is a source of learning since human beings are organisms in perpetual adaptation and co-development with their context, thus this interrelation is not negligible (especially in distance learning). The body becomes a didactic mediator (Gamelli, 2011) in a learning environment, so the physical space where education takes place deserves a point of attention: after all, the studies of organizational sciences have highlighted how even the ergonomics and design of places can have an impact on people motivation (Karanika-Murray and Michaelides, 2015) and professional performances (Prus, Nacamulli and Lazazzara, 2017).

3. The eco-mindstorming approach to learning

The concept of eco-mindstorming is linked to the abovementioned ecological framework (eco-) and the notion of mind (Bateson, 1972; 1979; 1991). Considered as an emergent property of the body and interpersonal relationships, the mind is an embodied and relational process that regulates the flows of energy and information within the brain and between different brains (Siegel, 2012). Its multidimensionality:

is backed up by several neuroscientific research that highlights the close links between brain activity and mental activity, redefining the mind-body-environment interaction and considering that human relationships generate changes at the molecular level with huge implications on memory and learning. (Cassese, Torregiani, and Bonfiglio, 2017).

aThis implies the recursive passage from an individual epistemology to a collective pattern (Bateson, 1979), which calls into the field knowledge belonging to the others who live in our embodied knowledge (albeit unconsciously) unexpectedly taking voice during simulation: after all, "all doing is knowing, and all knowing is doing" (Maturana and Varela, 1987). The eco-mindstorming approach is based on the simulation of one's characteristics, which implies the full involvement of participants; the "actors" are called to identify themselves and take the role of another, to hypothesize alternative perspectives and solutions. As a result of the mirroring mechanism, the character performed would evoke a certain FoB which allows the identification of embodied knowledge supporting metacognition. The main goals of this approach are the following:

- developing skills related to interpersonal behaviors, control of emotions and understanding of feedback through the representation of social relationships.
- developing problem-solving skills for the analysis of complex situations.
- developing decision-making strategies for evaluation of various behavioral alternatives.
- developing resilience in contexts of high-vulnerability and psychological pressures (e.g., COVID-19 pandemics).
- developing communication skills through simulation to understand other viewpoints enhancing empathy and active listening.

3.1. A practical eco-mindstorming: the Walt Disney method

Walt Elias Disney (1901-1966) was one of the most important men of the 20th Century, whose works are remembered and transmitted for generations and generations among children and adults. What is its success due to, even after years, places and cultures? In the book *Strategies of Genius vol. I,* psychotherapist Robert Dilts (1994) asked this question by focusing on what made the difference in his artistic production. After years of in-depth studies on neuro-linguistic programming (NLP), Dilts proposes the Walt Disney method as an effective strategy to develop creativity through the identification of the observer in three different postures: The Dreamer, the Realist and the Critic (Figure 1).
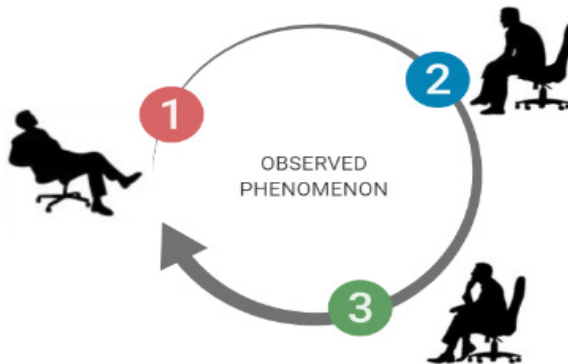
Figure 1. The three postures according to the Walt Disney Method:
1) the Dreamer, 2) the Realist, and 3) the Critic. Image created in BioRender.com

Each posture was designed to meet the needs of a particular type of audience with which Disney had to deal, so the identification with each of them allowed him to activate a specific cognitive dimension to foresee the pros and cons of his works from different points of view. The analysis of this method seems to be pedagogically relevant for a few simple reasons:

- observing a phenomenon from different hierarchical levels helps to connect multiple aspects that, in the first instance, seemed disconnected.
- describing a phenomenon from different points of view allows generating new information that brings up unexpected solutions and alternative strategies to the dysfunctional ones.
- generating multiple narratives in education allows the person to choose the version that most reflects his/her own Truth and to feel the main character of his/her own story.
- generating independent but overlapping multiple narratives requires active and conscious listening to one's body.

Indeed, teachers must know how to create and modulate the dynamics of a training setting where the student can feel not judged and welcomed in its wholeness.

3.2. Analysis of the postures

Dilts (1994) suggests identifying with someone we know, who possesses one of the characteristics mentioned, according to our point of view: "who is the most dreamer I know? The most realist? The most critic?". Thought identifies, among a myriad of people known (really or virtually, physically or in books), the one who mostly represents our own archetype of what it means to be a dreamer, a realist and a critic. A specific physiological state must be anchored to this image, therefore the author recommends assuming specific postures to facilitate identification with the character while sitting on a chair, so that the body gradually reaches some physiological states until sensory triggers recall certain perceptions. Once sensations are grounded (anchoring), the author proposes start meditating the phenomenon in a relaxed, reflective, or concentrated state. In the meditative phase of each posture, it is possible to write down everything that comes to mind, as in the brainstorming technique.

a. The Dreamer

Figure 1 shows the first posture to assume: The Dreamer. The body rests on the back of the chair, the head is tilted back, the eyes closed or turned upwards. The arms and legs are relaxed or in positions that convey tranquility. It is the posture of the supporter par excellence: the fan.

At this stage, great importance is given to the imagination. The observer is free to create as many hypotheses as possible, above all absurd, without any prohibitions. Ideas are welcomed without judgment as they arrive, like a stream of consciousness. This phase could be guided by the question: "why not?". This brings up a creative dimension in which the observer is called to write on a sheet all the ideas generated without prejudices, in a river of thoughts and images whose tributaries originate in any possibility.

b. The Realist

In this posture the observer changes his point of view, trying to see the things in a more practical way, answering the question "how can I do this?". The goal is to start thinking about an action plan through reflections that lead to find viable strategies. In this phase, it is useful to imitate the physical posture of the Realist (Figure 1, posture 2), tilting the torso forward towards the center of the room, as if to observe the phenomenon more closely. A reflective dimension is opened to put initial ideas to the scrutiny of practicability: it is the *pars destruens* of what turns out to be inapplicable on the level of reality. The observer reflects on what possibilities can be opened and implemented in addition to those previously imagined.

c. The Critic

The posture of the Critic is useful for weighing what would not work, answering the question "why yes?". As seen in posture 3 (Figure 1), the head is in an upright position (sometimes tilted to the right / left) and the arms are not relaxed along the legs but assume a more closed position, near to the chest. In turn, the leg muscles will be tighter than in the first posture examined. Meditating in this posture leads to a critical dimension which, however, does not coincide with a destructive function of the previous but rather looks at a distance the phenomenon, spoils some discrepancies and put them in a dialogue; acting as a *pars construens* of what has been observed, this posture can train critical reflection intended as a pivotal soft skill for transformative learning (Zarifis and Gravani, 2014).

4. Discussions

The Walt Disney method can be adaptable to any kind of pedagogical phenomena: a job-related episode, a linear narrative, a paradoxical situation to be solved... Postures can change and increase according to the needs of those who experience it: in any case, the goal is to facilitate an epistemological openness that awakens the transversal nature of knowledge, to learn how to describe educational phenomena from multiple viewpoints.

Disney used to dedicate different rooms of his home to each character/posture described so far (Dilts, 1994): similarly, diverse spaces of the classroom can be occupied to experience specific postures during the activity: a valid alternative is to move the chair from one point to another in the learning room (even in remote teaching) around an imaginary circle where the observed phenomenon remains at the center (see Figure 1). These postures clearly do not describe the phenomenon on the same level but are hierarchically intertwined: if the creative mood is achieved with the Dreamer, the reflexive one is reached with the Realist, while the Critic attains more to critical reflection. Their connection brings to a meta-reflective capable of grasping the "pattern which connects" them in a Batesonian perspective. As anticipated, each posture starts with a phase of body grounding accompanied by a writing session (a brainstorming or, in other words, a "storm of brains"). The exercise can be repeated until the result is satisfactory for whoever puts it into practice. Though, we would like to go further suggesting an eco-mindstorming approach to address the entire learning process experienced through this strategy (as well as in other performative methods), since the acquired knowledge is not simply the result of brain activity nor muscular, but rather requires to patiently activate the dialogue between different parts of the mind awakening the knowledge rooted in the body, while stimulating it through the environment.

This strategy may generate an ecological thinking by merging different levels of under-standing while keeping them separate: the vision of a person can never be totally confused with that of another (by reproducing it passively); nevertheless, the observer can experience the phenomenon from multiple levels of description which do not represent the Truth, instead they are descriptions of other possible descriptions: if we want to know our viewpoint, we have to change viewpoint (Sclavi, 2003), so this strategy may help becoming aware of the tacit and implicit knowledge of the observer.

The traits that make this approach suitable for teaching-learning strategies are centered on embodied simulative didactics or a laboratory. The focus on this methodology is be aimed at exploring multiple dimensions connected to the role/context (focus on the symbolic meaning), as well as analyzing and being conscious of physical, corporal, embodied and virtual spaces. The proposal is part of an inclusive and personalized high-performance teaching offer that aims at promoting active learning. Reference to the contents will be highly contextualized and cali-brated, according to the situational variables, to the didactic units of the disciplinary program proposed by the teacher or the situation emerging from the context to be analyzed. Particular attention should be given to the analysis of those contexts of high vulnerability and fragility that focus on special educational needs and specific learning by providing for the inclusion of diversity, disability, and marginalization.

Conclusions

Whether in a virtual or in a physical learning environment, the eco-mindstorming approach suits its goals according to a specific focus: a problem, a role, a symbolic content. The appli-cation of this approach may vary according to the objectives: training, career guidance, peda-gogical animation, and so on. In education, it is very common to have to report, tell, describe events and stories of other people, colleagues, and users frequently permeated by linear and monolithic descriptions: the challenge in pedagogical counselling is to hypothesize new nar-rative alternatives (especially in problem-saturated stories; White and Epston, 1990), allowing the integration of information that, for some reason, has been excluded or considered irrelevant. By recalling the perspective of others, we can celebrate what Colazzo and Patera (2009) define an ecology of participation, to highlight the phenomenon through a kaleidoscope of different nuances. Practicing the eco-mindstorming, in this sense, would play a dance of positions from a solipsistic narrative to an individual-collective one, albeit linked to the observer. This exercise opens to a compositional dialogue between different parts that, at first impression, tend to be disconnected and disembodied within us (Formenti, 2009), while maintaining the reciprocal and necessary distinctions. For instance, we could also imagine an application in the training of teachers (e.g., writing their embodied experience in narrative diaries) to increase creativity, meta-reflection and critical thinking as fundamental soft skills for adult education (Milana et al., 2018). Finally, this approach could be a learning strategy in Physical Education to see the mind in action through the body while bringing out the new, the unusual, and the unexpected from everyone.

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