Philosophical Inquiry in Education

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Volume 27, Number 1, 2020

URI: https://id.erudit.org/iderudit/1070275ar
DOI: https://doi.org/10.7202/1070275ar

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Publisher(s)

Canadian Philosophy of Education Society

ISSN

2369-8659 (digital)

Explore this journal

Cite this article

Joldersma, C. W. (2020). The Moment of Study in Learning that Resists Neoliberalism: Body Gesture, Time, and Play. *Philosophical Inquiry in Education*, *27*(1), 14–30. https://doi.org/10.7202/1070275ar

Article abstract

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Philosophical Inquiry in Education, **Volume 27 (2020), No. 1, pp. 14-30**

The Moment of Study in Learning that Resists Neoliberalism: Body Gesture, Time, and Play

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The essay develops a case study about a young boy playing with a toy train to address neoliberalism's problematic discourse that depicts learning as instrumental, as something that can be caused by teaching. This paper's perspective is enactive, taking the view that central to understanding learning is not the mind or brain working in isolation but involves the interrelationships between mind/brain, body, and world. The analysis revolves around the standing gap between teaching and learning, where navigating the gap involves a dynamic called 'the moment of study.' Three of Tyson Lewis's ideas about study—body gesture, time, and play—are used to explain the moment of study. The paper argues that a learner traverses the gap between teaching and learning through a body gesture of hesitation, during which there is a temporal turning away from the familiar and towards new possibilities. Traversing the gap occurs through the risk of improvisational play, propelling a forward movement in the face of not knowing how to go on. This depiction of such traversing, shown to be central to the activity of learning, undermines the causal account of learning associated with neoliberalism.

Introduction

This essay addresses neoliberalism's problematic discourse about learning by undertaking an analysis of a photograph of a young boy playing with a toy train. Neoliberalism's discourse involves depicting learning as instrumental, as something that can be *caused* by teaching. This idea is harmful, smothering the intrinsic student-initiated response character of learning. The analysis of the photograph forms the basis of an argument that undermines this supposedly tight relationship. I engage recent philosophical literature on study to support my conclusion that learning requires a moment of study and that this structurally resists the neoliberal discourse around the tight instrumental relationship between teaching and learning.

Neoliberalism is most visibly a theory of economic practices, interpreting individuals as market actors and framing human flourishing as realized only through engaging entrepreneurial skills in free markets (Harvey, 2005). More than merely economic, however, neoliberalism is, at root, a "distinctive mode of reason" that produces subjects through "codes of conduct" and "a scheme of valuation" (Brown, 2015, p. 22). As a form of "normative reason," it extends "economic values, practices, and metrics to every dimension of human life" by means of "top-down rules" marked as "incentivization, guidelines, and benchmarks" (Brown, 2015, pp. 30, 34). Central to neoliberalism's mode of reasoning is a logic of

learning, where students' academic achievements are thought to be produced by tightly orchestrating their learning. Schools are thought to *produce* desired academic achievement through firm interlinkages between detailed standards, scripted teaching, and high-stakes testing. Learning and teaching are portrayed as tightly connected. In Claudia Ruitenberg's words, "A direct and instrumental relation is assumed—and desired—between what is taught and what is learned" (Ruitenberg, 2017a, p. 2). This logic suggests that effective teaching can cause the correct outcome of learning. There is no gap between teaching and learning. When a gap seems to appear, when students learn something different than intended, this means that the instrumental structure has not been effectively organized or followed. The logic assumes that ideal teaching involves a causal step-by-step process which, when executed properly, will *force* learning. It doesn't involve a student-initiated response.

Some philosophers of education have resisted neoliberalism's logic of learning, suggesting instead there exists a standing gap between teaching and learning, something which must continually be traversed. In her discussion of study, Ruitenberg puts this idea clearly: "The activity of studying and the role of the student operate precisely in the gap between what is taught and what may, in the end, be learned or assessed" (Ruitenberg, 2017a, p. 3). She makes visible a permanent gap in the educational process, one that cannot be eliminated. In formal education, "what is taught" typically involves what a teacher offers, and learning involves what the student, in the end, might gain. She gives the name *study* to the process of traversing the standing gap. The analysis of the photograph is my attempt to show why this gap is not eliminable. It is a standing gap because learning is a *student-initiated response* to what is taught.

My example does not come from formal schooling, but instead illustrates a more informal situation. I use this example because it illustrates more easily the standing gap, even as it broadens our sense of "what can be taught" to mean whatever might offer a learning possibility. This includes a boy's bodily engagement with a toy train that teaches. My analysis will show that a standing gap exists between what the train offers as new ways of making sense of the world, and "what may, in the end, be learned" by the young boy. This expands Ruitenberg's insight by detailing how study is intrinsically involved in learning—that study *conditions* it. In the concluding section I tentatively generalize this, offering that the moment of study is involved also in formal settings of learning such as schooling. Highlighting "study" as a condition for learning is what resists the neoliberalism's logic of an instrumental linkage between teaching and learning, and makes clear that learning is a student-initiated response to what might have been taught.

The Photograph and Enactive Cognition

My analysis of the learning activity in the photograph is enactive. By "enactive" I mean the view that learning involves the interrelationships between mind/brain, body, and world (Zahavi & Gallagher, 2008; Jenkins, 2017), rather than the standard cognitive science account of mind or brain working in isolation, processing mental representations (Joldersma, 2016a). The enactivist account is more clearly seen through a boy physically playing with a toy train rather than a child siting in school completing a worksheet, but both are enactive (Gallagher, 2018). Learning, from an enactivist perspective, is a way of understanding the world through bodily interactions with it. The type of body an organism has impacts the way the world makes sense to it; the way one bodily interacts with the world helps constitute one's learning about that world (Barrett, 2011).

As an alternative to traditional (representationalist) cognitive science, enactivism "is inspired and informed by phenomenological philosophy" (Gallagher, 2018, p. 626). Although the idea of phenomenology varies and what counts as phenomenological is often contested (Zahavi, 2003a, pp. 53-66; Zahavi, 2019), I will be drawing on several phenomenological ideas important to the emerging intersection of phenomenology and cognitive science. Philosophers Dan Zahavi and Sean Gallagher often use phenomenological concepts to describe the complex first-person embodied experience involved in understanding the world (Gallagher, 2014). In describing enactivist cognition, I will be drawing on several of Husserl's technical ideas. The first are the related ideas of "epoché" and "phenomenological reduction," namely, bracketing one's natural attitude and turning to the experience itself (Husserl, 1982; Zahavi, 2003a, pp. 45-46). This is not a turn to introspection, let alone to internal mental representations. Rather, this dynamic involves embodied experiences of the world and, simultaneously, an "implicit, non-introspective, first-person self-awareness of our own experience" (Gallagher, 2010, p. 22), a kind of pre-reflective self-awareness (Zahavi, 2003b). The second idea is Husserl's technical notion of time as duration. The idea of duration involves understanding any present moment to include not only an experience of the present, but also of an immediate past, called a *retention,* and an immediate future, called a *protention* (Husserl, 1991; Zahavi, 2003b). This will inform my use of the term "moment" in the "moment of study." I use Gallagher's and Zahavi's descriptions of Husserl's concepts because they highlight these concepts' enactive possibilities for describing cognition. Understood enactively, cognition centrally involves a focused attention outward to something in the world. Yet, enriching our account of enactivism through Husserl's concepts (as described above), enactive cognition concurrently involves a kind of oblique apperception of the embodied experience itself. In each such moment, there are trailing phases and anticipatory phases. A phenomenologically inspired enactive interpretation of cognition makes explicit the connections between the two experiences in such moments, while avoiding making them purely intellectual or interior (Gallagher, 2018). Learning, as a student-initiated response, interpreted enactively and described through these phenomenological concepts, involves an intentional bodily relation to the world while apperceptively attending to one's embodied self in that relation, in a present moment.

The photograph is of a young boy, perhaps three years old, interacting with a wooden toy train. He is engrossed with a small wooden disc, on edge, resting in front of a flatbed car. The disc has an ample hole drilled in its center, inviting it to be placed on an upright spindle of that train car. The boy is on his knees, torso bent over the train, head tilted, eyes fixed intently on the disc. His right hand is reaching for the disc, his fingers readying to pick it up. His left hand, trailing slightly behind him as he reaches, is holding another disc, gripped with thumb and two fingers. The train's flatbed car, with its four upright spindles, is directly below him. Each of its spindles is already holding similar discs, of various thicknesses. The first spindle is holding a single disc, actually more like a cylinder, almost as tall as the spindle. The next spindle holds two cylinder-shaped discs, each half as tall as the one on the first spindle, but together reaching the same height as the first. The third spindle holds a stack of three discs, but still has room at the top. The fourth also has room at the top, but is holding only two discs. The disc over which the boy's right hand hovers is thinner than the one in his left hand. It seems he is in the midst of completing a complex activity of placing discs onto the spindles in some understandable fashion, but seems to be hesitating as he looks more closely. Even his grasping motion appears to show hesitation. His hesitation seemingly involves an indecision about where to place the last two discs: which disc goes on which of the last two spindles?

The photograph depicts a boy engaged in what I'm calling a "learning activity." By a "learning activity" I mean, at its simplest, a student-initiated response that leads to making sense of the world in a new way. The boy's activity is an embodied, enactive engagement with what appear to be simple patterns afforded by a toy train. Of course, all toys might teach, but this particular train was built with affordances that encourage engagements and explorations of shape, number, and pattern through sensorimotor manipulation (Neufeld, 2003). An affordance, as originally depicted by J.J. Gibson, is a particular configuration in an organism's environment that suggests possible ways of interaction depending on the organism's capabilities and interests (Gibson, 1977; 1986). For example, a cup handle's particular shape is an affordance for most humans because it invites grasping by prehensile hands, perhaps motivated by a desire to drink something; similarly, a chair seat is an affordance for humans, inviting sitting because of human bodily configuration and need for rest (Dings, 2018). In the photograph, the four-spindled flat-bed car affords bodily engagement with what for adults appear as simple arithmetic patterns—wholes, halves, quarters, thirds. The young boy is engaged with what for an observer are fractions, although judging by the boy's age it is unlikely that he's aware of that. Certainly, he's not deliberately learning fractions in a traditional schooling manner, which might involve conventional abstract symbol systems, work sheets, scripted algorithms, and memorization. Rather, the photograph suggests "strong spontaneity" (Rietveld, 2013, p. 21), free interactions involving immersive enactive engagement with a flat-bed car's ambiguous affordances, including discs that invite stacking on spindles in various possible combinations, without clear directions for doing so. That it, is depicts a student-initiated response to the train's possible teachings.

It is through an enactive interpretation of the young boy's responses to the toy train that the essay attempts to make clearer how learning involves study. The tentative conclusion will be that for the response of learning to happen, something called a "moment of study" is required.

Study and Neoliberalism's Discourse of Learning

It might not be a stretch to say that, in philosophy of education, the rise of neoliberalism in education has given the idea of 'study' a renewed prominence (Lewis, 2013; Ruitenberg, 2017b). Yet, using the idea of study to push against problematic formulations and practices of formal education is not new. Robert McClintock (1971) brought the idea of study to philosophy of education decades ago. His critique of Comenius' didactic vision—of the tight link between instruction and learning—is something that he says continues in present schooling. His own alternative vision of schools is to see them as centers of study. His critique and alternative is echoed in the critiques and alternatives of more recent analyses of neoliberal schooling. These include seeing study as withdrawal from the debts and credits of formal schooling (Harney and Moten, 2013, pp. 61-68), as political intransigence against school deformation (Pinar, 2011, p. 48), as resistance to the imposed tight connections between instruction and learning (Simons and Masschelein, 2008, pp. 400, 415), and as the idea of weak education (Biesta, 2014, pp. 1-10). Tyson Lewis's and Claudia Ruitenberg's works fit directly into this critique of education. In what follows, I focus on Lewis' work not only because his idea of study is the most developed among those who have theorized study (Lewis, 2013), or because it is perhaps the most radical (Lewis, 2018), but also because his rich theorizing of study is situated in the phenomenological tradition and has paid detailed attention to its embodied nature (Lewis, 2014c).

Lewis has persuasively argued that the notion of study can help break the neoliberal logic of learning (Lewis, 2013). His worry is about a particular conception of learning, one in which externally imposed outcomes are emphasized and where successful learning is thought to be measurable against externally enforced ends. Lewis insightfully argues that this frames the learning process as an instrumental relation between teaching and learning, where external standards set the benchmarks and processes of learning. His idea of study is meant to contest this understanding of learning and interrupt its logic. The concept of learning he's criticizing is "the actualization of an intention that can be quantified in relation to a goal (expertise as it is defined by a field or activity)" (Lewis, 2018, p. 20). This logic construes teaching as a tight management of the learning potential in the name of an external measure, where the external "content is predetermined, fixed, immutable" (Lewis, 2019, p. 401). To interrupt this, he sometimes suggests that a student can and ought to choose to study rather than to learn, as a way of making inoperative the neoliberal logic of learning (Lewis, 2014d, p. 178). However, it is important to note that Lewis doesn't abandon the term "learning," for although he has a strong critique of this dominant conception of learning, he also says that "learning in and of itself is an invaluable educational experience" (Lewis, 2014d, p. 163).

I strongly concur with employing the idea of study to undermine neoliberalism's logic of learning. I have argued previously for resisting the incursion of neoliberalism into education (Joldersma, 2013; 2016b). A strong critique of neoliberal's concept of learning needs to be on-going, because its discourse harms students. However, in contrast to Lewis's strategy for resisting neoliberalism's understanding of learning through choosing to study rather than to learn externally fixed and predetermined content, I want to approach this critique from within "learning in and of itself" (Lewis, 2014d, p. 163). My critique centers on envisioning the conditions for the possibility of learning in a way that undermines the neoliberal logic of learning while not abandoning "learning in and of itself," which I call the *activity of learning*. I will show, through an extended example, that a central condition for learning's possibility is a dynamic we can call a "moment of study" (Lewis, 2014b, p. 340). My extended example clarifies that the *activity* of learning is a student-initiated response, undermining the neoliberal understanding of learning as a tight instrumental relationship between teaching and learning, including the supposed ability to force learning through externally-imposed content and methods.

The analysis of the photograph relies on three features of the moment of study. Three of Lewis's ideas about study—body gesture, time, and play—are employed to make explicit its dynamics. In the next section I will describe these three as Lewis depicts them. Then, in the following three sections I will apply each of them in turn to make visible what occurs in the dynamic moment of study as part of the activity of learning. These sections will show that learning requires traversing the standing gap between what is taught and what, in the end (if anything), is learned. The final section returns to the framing issue of neoliberalism's instrumental depiction of learning, arguing that the moment of study resists the neoliberal logic of learning as a tight, instrumental structure.

Three Features of Lewis's Idea of Study

For Lewis, *study* names an alternative to neoliberalism's understanding of learning as a quantifiable intention measured by an external goal (Lewis, 2018, p. 20). Study, on his account, involves "an interruption and suspension of learning" (Lewis, 2015), namely, freeing the student from externally-

imposed methods and goals. As such, study "offers an educational experience wherein the studier comes face-to-face with potentiality as such…" (Lewis, 2016, p. 12). Lewis's more detailed description of study involves many features, but I highlight *body gesture*, *time*, and *play* as intrinsic features of learning, a student-initiated response to what is taught.

The first is *body gesture*. Lewis points to a particular bodily posture enacted in the process of study (Lewis, 2014c). He describes the bodily stances taken by his students in an art museum tour: their interactions with the art works involved bodily shifts such as "moving in closer then drawing back" (Lewis, 2014c, p. 347). These body gestures show hesitation, indicating bodily processes of delaying closure on a particular meaning. More generally, the body gesture of study is "stand[ing] back to allow qualities to emerge, adjusting the body so as to dwell within an emergent field of potentials" (Lewis, 2014c, p. 344). Bodily gestures of study show openness to multiple possibilities of meaning, delaying settling on one of them. This involves "a kind of perceptual hesitation which both presses forward toward maximal grip while also delaying its arrival" (Lewis, 2014c, p. 345). The bodily gesture of standing back while pressing forward can be interpreted as a time of hesitation on the way towards, but delaying, a new understanding.

The second feature is *time*. Lewis distinguishes between what Heidegger calls *temporality* (small 't') and *Temporality* (capital 'T'). Lewis suggests, "education for expert skill building is situated within the temporality of learning, while study is instead situated within and turns us toward Temporality" (Lewis, 2016, p. 2). In *temporality*, time is experienced as making progress towards an external goal or final product, whereas in *Temporality* time is experienced as being totally absorbed in the moment, losing track of time's flow. Whereas temporality is a unity of past-present-future in the sweep of a practical activity working towards an external goal, Temporality is an experience of the present, interpreted as the "experience of the potentiality of something to appear as meaningful" (Lewis, 2016, p. 6). His conclusion is, "Studying is the educational experience of Temporality" (Lewis, 2016, p. 10), a getting absorbed in the possibilities of what is appearing purely in the present, detached from the sweep of past to future. Lewis also posits a fundamental connection between the two: Temporality "reveals the very conditions of the possibility of" temporality (Lewis, 2016, p. 5). Because Temporality is the condition of temporality, the time of study (Temporality) can be said to condition the sweep of learning (temporality).

The third feature is *play*. Lewis states, "Studious play accomplishes this peculiar educational task by suspending without destroying traditional things: laws, signs, and so on" (Lewis, 2014a, p. 203). Play according to Lewis, involves suspending the everyday rules-of-use of something. When a thing's conventional use has been suspended, "whatever remains becomes a toy" (2014a, p. 210). Something becomes a toy through play by attending to the thing's features that allows alternative possibilities—when the rules-of-use of things in the world are suspended, the latter are "opened up for free use" (Lewis, 2014a, p. 205). His point is to offer a richer set of interactions for students, where teachers deliberately encourage play, giving "students the time and space for such experimentation" (2014a, p. 213).

Body gesture, time, and play will form core features for my understanding of *the moment of study,* including how it conditions the activity of learning. They will clarify how the activity of learning is possible, where learning is broadly taken as a student-initiated process of moving from familiarity, through ambiguity, to making new sense of the world. They will help elucidate how a learner traverses the gap between something that affords to teach and something that may, in the end, be learned. I do so through the case study of the perceived activity of the boy in the photograph absorbed in playing with his toy train.

Body Gesture in the Moment of Study

In the photograph, the young boy is not sitting in a school desk, obediently completing a work sheet. He is not explicitly part of a neoliberal logic of learning. Rather, he's on the floor, totally engrossed with his entire body in a sensorimotor, enactive activity. He's on his haunches, bent over to get closer, head tilted on an angle as he looks, mouth slightly open. Head, eyes, mouth, torso, legs, knees, arms, hands, and fingers are all involved. He shows total involvement in sensorimotor, enactive activity, which I'm interpreting as learning. By this I mean not simply that the body's movements *sustain* his learning activity, something that might drop away if he were sitting still in a desk doing some scripted school learning; rather, I mean that learning itself, in its occurring, is achieved through the bodily dynamics of enacted cognition (Hutto, 2013; Joldersma, 2016a). Learning emerges through enactive, affective processes that shape emergent understandings of the world (Gallagher & Lindgren, 2015). The young boy's bodily interaction with what the train affords shapes his possible emergent understandings of the world.

Lewis insightfully shows the importance of bodily gesture in study, arguing that a body gesture of hesitation indicates dwelling "within an emergent field of potentials" (Lewis, 2014c, p. 344). Even in the stillness of a photograph, the boy's bodily gestures of his right hand and tilted head suggest a hesitation in his overall movement towards firmly gripping the last wooden disc. Although he shows complete bodily involvement, his right hand and head reveal a bodily gesture that suggests lingering in an emergent field of possibilities. The thumb and ring finger of his right hand are beginning to form a precision grip around the disc, but simultaneously he appears to hesitate, as if he's delaying the final grasping movement. The position of his head reinforces this, tilted on an angle as if to look more closely at the disc before picking it up. For Lewis, the body gesture of study, delaying the maximal grip, indicates the student's receptivity to new possibilities. In the photograph, the boy's bodily gesture is one of delayed action, a moment of hesitation, indicating an openness to multiple possibilities of meaning, a delay in traversing the gap towards resolution. This suggests that his learning involves a suspension or delay.

An enactive perspective maintains that learning involves sensorimotor activity. This means not only the fact of being bodily engaged, but also that our understandings of the world is grounded in body-oriented metaphors (Beer, 2014). For example, our bodily engagement with numbers in our environment influences our choices of grasping gestures. Grasping with a full fist is a *power* grip, whereas a grasping with finger tips is a *precision* grip (Napier, 1993). Power grips typically form when engaging with large whole numbers, and precision grips are primed by small ones (Moretto & di Pellegrino, 2008). On that account, the young boy's precision grip indicate an oblique awareness he is dealing with small whole numbers of discs, perhaps simply counting them. This also gives us a sense of why he might be hesitating. Perhaps he is delaying because he senses that merely counting is not enough, perhaps because of the ambiguity of disc thickness: the one he's about to pick up, compared to the one in his trailing left hand, might seem off. Do they belong to the same whole-number grouping? Do the discs have a relationship different from just being discrete wholes? This ambiguity might involve cross-modal judgments of the discs' thickness, integrating his left hand's felt touch of the disc he's already grasping with his visual perception of the disc about to be grasped by his right. The hesitation shown in his body gesture can be interpreted as *study*. His hesitation to grip might signal he is suspending his understanding of the discs in terms of small whole numbers, and that he might be turning towards an emergent field of ambiguous

patterns, which he does not yet to understand, which might include patterns more complex than mere counting, such as what adults call fractions.

The term *moment* gives insight into what might be occurring here. By moment I don't simply mean a temporal duration but also a *turning effect*, drawing on its meaning in physics. A moment of hesitation involves *turning away* from one trajectory of action, suspending, say, an already understood activity such as stacking small whole numbers of discs and *turning towards* other possibilities. This calls to mind what Husserl called an "epoché" and "phenomenological reduction," namely, bracketing one's natural attitude and turning to the experience itself (Husserl, 1982). This bracketing and turning involves three interlocking phases: (1) initiating the suspension of one's action (thoughts, judgments) by turning away from the non-examined but familiar activity; (2) turning toward the experience of that action (an apperception of oneself); and (3) enlarging one's receptivity towards new possibilities of the world in one's experience (Depraz, Varela, & Vermersch, 2000). This three-part movement depicts what might be happening in the body gesture's moment of hesitation. Although Husserl interprets the turn as an apperceptive move towards self-consciousness, from an enactive perspective the suspension involves turning away from a known and familiar activity and turning towards an apperception of new possibilities in the embodied experience (Thompson, 2017).

This framing helps us interpret the young boy's moment of delay. His body gesture of hesitation can be interpreted as (1) suspending and turning away from his understood activity of stacking small whole numbers of similar discs; (2) becoming apperceptively attentive to ambiguities in his experience; and (3) enlarging his receptivity by turning towards a larger set of possible affordances in his experience that involves something other than small whole numbers, including an emergent feeling of fractionality. On this account, his seeming puzzlement with the train's teaching affordances—the possible ways of stacking the discs that it invites—makes him hesitate as he experiences new possibilities of embodied understandings for stacking the discs. Because he's not in a formal school setting with its bench-marked assessments, he's free to interact with the train on his own terms. The boy's bodily gesture of hesitation indicates his possible turning away from what he knows, apperceptively turning toward his own embodied experiences, and being receptive to a field of other possibilities.

As an activity of learning, the boy's bodily gesture indicates his dwelling in the emergent field of potentials of affordances marked by a delay. This delay makes visible the gap between teaching and learning. His body gesture of delay suggest a paradox, that the gap can be traversed only through a delay, through a hesitation that keeps ambiguity open, a suspension that defers resolution, that the activity of learning involves a moment of hesitation, being open to a field of other possibilities.

Time in the Moment of Study

Moments as turnings involve a temporal dynamic. Revealing the temporal dynamic in the moment of study can add to our understanding how the activity of learning is conditioned by a moment of study. The temporal elements of that moment reveal a complex dynamic. I am drawing here on Lewis's distinction between Temporality and temporality. Small 't' temporality (of practical action) involves both *recollections* of events or actions in the past (e.g. 'I was in my house 5 minutes ago') and *anticipations* of events and actions in the future (e.g., 'I intend to arrive at my office in 10 minutes') as we intentionally move forward towards a known goal. Together, these form the everyday flow of time, constituting goal-

directed activity. Study, by contrast, he says, involves Temporality, the suspension of the anticipatory dimension of this flow (but also the flow's past elements). This allows the student to be totally absorbed in the present moment (Temporality) rather than in the intentional sweep towards the intended future (and from constraints of the past).

Lewis's idea of Temporality can help develop my notion of the moment of study. What I'm calling the moment of study is a *present* moment (Temporality). Husserl's insight is that the *present* moment itself has a temporal dynamic. Rather than an infinitesimally small point, the present is a *duration*. The conventional view is that a present moment is a vanishingly small *punctual* slice of time, with the past composed of previous slices and the future composed of slices yet-to-come. Each punctual slice is itself void of past and future, a sliver of 'pure now.' Husserl, however, calls the present moment a duration because on his view it itself is composed of all three temporal modes, past-present-future (Gallagher & Zahavi, 2014, p. 86). Husserl coined the terms *retention* for the past mode in the present moment and *protention* for the future mode in the present moment, both elements of the currently *present* duration (Husserl, 1991). Retentions are our present awareness "of the just-elapsed phase of the object" and protentions are our present awareness of "the phase of the object about to occur," sandwiching "a current openness (primal impression) to what is present" (Gallagher & Zahavi, 2014, p. 87). Thus, any experienced *present* moment, say, of a single note in a melody, is a duration comprised of present retentions of immediately lapsed phases (just past notes), openness to what is currently present (the present note), and present anticipatory phases of what is about the occur (immediately future notes). All three are inevitably part of a present moment of the experienced melody.

Interpreting the moment of study as a *duration* means that it is composed of a triadic temporal dynamic. Lewis's idea of study as Temporality involves the suspension of the past as *recollections* of events or actions in the future as *anticipations* of future events and actions, to allow for dwelling in the potentials of the present. But Husserl's insight is that the present moment is itself temporal, comprised of a triadic dynamic, including retentions and protentions. The moment of study is itself composed of these temporal elements. Present moments of study are not punctual points, void of all past and future, but always "an interplay between retention and protention" (Gallagher & Zahavi, 2014, p. 93). Even when a learner is totally absorbed in the moment of study (Temporality), suspending the actual past and actual future (temporality), the three elements of the duration are still there. Gallagher and Zahavi suggest that this triadic dynamic is involved in enacted, bodily making sense of the world (Gallagher & Zahavi, 2014, p. 96). As a *duration,* the moment of study involves an openness to something present with an anticipatory phase (protention) and a trailing phase (retention). The anticipatory phase co-constituting the present moment is "an apprehension of the possibilities or the affordances in the present … possibilities that will be fulfilled or not fulfilled as our enactive perception trails off in retention" (Gallagher & Zahavi, 2014, p. 98). That is, the "experience of the potentiality of something to appear as meaningful" (Lewis, 2016, p. 6) can be located in the anticipatory phase of the present moment. The moment of study, indicated by a bodily gesture of hesitation, uncovers affordances that show up as not-yet-fulfilled novel anticipatory possibilities. The present moment of study includes anticipating a set of possibilities of novel meaning, framed by a trailing phase of already-familiar meanings.

The idea of duration makes possible an explanation of how the gap between teaching and learning can be traversed. The act of presently dwelling in an emergent field of novel potentialities has a temporal dynamic, where the new possibilities are anticipations (protentions). The gap between teaching and learning can be traversed only because of a temporal dynamic of *anticipating* the potentiality of something

new appearing as meaningful. This involves turning away from the "natural attitude" of known meanings in the flow of intentional actions, and turning towards new, albeit ambiguous, possibilities; this involves an internal temporal movement in the moment of hesitation. The gap between teaching and learning can be traversed because the moment of hesitation itself has a temporal dynamic. The suspension of the intentional movement towards closure and resolution opens up the freedom in the temporal flow *within* a duration to move towards novel meanings.

The moment of study, characterized in the photograph by the young boy's gesture of hesitation, is a duration. The hesitation in grasping the upright disc can be interpreted as the moment of turning away from a familiar activity of stacking discs, understood through small whole numbers. The turning away involves *retentions*, the occurrent trailing phase of immediately previous movements, including retentions of familiar understandings the world through small whole numbers. The retention is perhaps shown in his thumb and ring finger ready to complete the hand's precision grip, a retention of understanding he's counting small whole numbers of discs. At the same time, the boy's moment of study includes *protentions*, occurrent apprehensions of possible novel and divergent possibilities of meaning not yet fulfilled. The freedom shown in the hesitation, the freedom to turn to new understandings, relies on protentions in the temporal dynamic of the duration. He might well be presently apprehending novel anticipatory affordances, a new set of as-yet unfulfilled possibilities, and hence hesitating to complete this precision grip. In the duration, his bent finger and thumb being close together may be evidence of constraining retentions that shape but do not determine the way that the protentional possibilities may or may not be fulfilled in the present. The temporal dynamic of the duration indicates a freedom to turn towards new, anticipatory possibilities afforded by the train. Experiencing them as anticipations gives a temporal direction in the present moment. This would allow movement across the gap between teaching and learning, away from familiar understandings and towards new ways of understanding the world. Duration is central to traversing the gap between teaching and learning. Without a temporal flow internal to the moment of study, learning would not be possible.

Improvisational Play in the Moment of Study

Explaining the moment of study as a set of anticipatory possibilities does not yet clarify the process of settling on *one* anticipatory possibility of understanding rather than *another*. Yet this needs to happen for learning to occur. How might a student *actually* move forward through the time of hesitation and *actually* traverse the gap? Anticipatory possibilities need to actually be adopted as new ways of understanding the world. This sets the stage for the third feature of the moment of study. The photograph clearly shows a young boy *playing* with a toy train. For Lewis, play demarcates a lack of "any sense of destination" (2014a, p. 205), missing ends and purposes, and he views toys as things that have been "withdrawn from all rules of use" (2014a, p. 209). Others have noted that play involves "experiencing the unexpected" (Pellis, Pellis, & Bell, 2010). It is this feature of play that is key in the temporal movement of traversing the gap. To situate this idea more clearly in the moment of study, I turn briefly to Gadamer's notion of play, and then to the idea of improvisation.

For Gadamer, a central feature of play is the to-and-fro movement that is self-renewing in its repetition. This is not something one does with deliberate intention; rather, "[p]lay fulfills its purpose only if the player loses himself in play" (Gadamer, 2004, p. 103). It isn't right to say that the young boy

is taking an *intentional* initiative towards new understandings in playing with the train. Rather, he is *losing* himself in a to-and-fro movement of his exchanges with the train, being absorbed in his interactions. These exchanges, Gadamer suggests, involve "something else with which the player plays and which automatically responds to his move with a countermove" (Gadamer, 2004, p. 106). This includes an inherent but attractive risk, where play involves making moves that respond to offered but ambiguous possibilities, where play hazards "ordering and shaping the movement of the game itself" (Gadamer, 2004, p. 107). The boy plays with the train because its affordances are ambiguous anticipatory possibilities inviting him to respond with ordering and shaping movements. In turn, the train's affordances respond as countermoves to his successive actions by resisting or allowing these ordering actions. The successive stacking of discs in patterns on spindles constitute his playful responses to the train's offered possibilities.

The train's affordances don't causally determine the boy's responses. Instead, the affordances invite *improvisation*. By that I mean getting something underway without a clear ending or algorithm. In the moment of study, the train's affordances make available ambiguous anticipatory possibilities that are part of the boy's enactive experience, and his hesitation indicates his oblique awareness of these rich set of anticipations. The possibilities of the affordances are, in one temporal direction, constrained by the retentions of the trailing phase, while in the other direction are offered as real anticipatory possibilities (protentions). There is freedom between these two temporal directions, for retentions don't determine protentions. This freedom invites a to-and-fro of play, where previous commitments of enacted movements (retentions) influence but do not fix the future possible improvisational moves (protentions). Forward movement is neither automatic nor clear, but improvisational. In improvisation, the call to "the improvisor is to create something new within the decaying site of the old" (G. Peters, 2009, p. 25). The retentions are present decays of "the old," and the protentions are anticipatory possibilities that one might risk enacting to "create something new." The present moment constitutes a risky but inviting freedom, enticing the young boy to take a chance in acting within the range of anticipatory possibilities given by the train's affordances, to move forward in the field of possibilities of discs-to-spindle placements. Meaningful new patterns might emerge in the improvisational play, through the risk of moves that respond to countermoves constituted by the ambiguity in the train's affordances.

Improvisation allows for going beyond what is foreseen through risking commitments to *one* of the new meanings in the set of ambiguous anticipations. Pulled forward in play by the positive feeling associated with the to-and-fro movement of attractive risk, improvisation is a dynamic movement of seeking a *particular* path forward without knowing the final goal. Enacting *one* of the meanings without clear guidance is sandwiched between one's past retained familiar meanings and the larger set of possible future novel understandings. The freedom of the to-and-fro movements in improvisational play "mobilize strategies that keep the work happening" (G. Peters, 2009, p. 69) even though the path forward isn't clear. Improvisation allows delaying the final closure of completion while committing to something in the present that moves understanding to something new. Improvisational movement is thus central to the moment of study, and depicts a path forward while remaining in "the potentiality of something to appear as meaningful" (Lewis, 2016, p. 6) that isn't yet clear.

The trajectory of the boy's movement towards understanding fractionality, say, can be visualized as a commitment to something in his present experience while not quite knowing where it will end up. The young boy is, as it were, "suspended between beginning and ending" (G. Peters, 2009, p. 71), originating his play in response to the call of possibilities by his toy train and improvising new meanings in response to the affordance possibilities of that train. He may be improvising the placement of the discs as he

experiences the possibility of a new way of understanding the relationship between the discs, away from small whole numbers and towards simple fractions of halves, thirds and quarters. His moment of study appears to involve improvisational play. It suggest that without improvisational play, the gap between teaching and learning would not actually be traversed. If that is true, then learning would not be possible, for there would be no actual movement across the gap.

Resisting the Neoliberal Logic of Learning

The gap between teaching and learning points to an ineliminable interiority that cannot be touched by exterior, supposedly causal mechanisms. Ruitenberg explains, "[s]tudy does not measure up to the demands of evidence that it makes either its effectiveness or its process visible. While study certainly has effects, these effects are not predetermined, and so study's effectiveness cannot be assessed" (Ruitenberg, 2017, p. 2). Traversing the gap through moments of study—constituted as an ineliminable hesitation revealed in body gestures; as a temporal turning that occurs in the dynamic of trailing retentions and anticipatory protentions; and as the risk of improvisational play that propels the movement forward in the face of not knowing how to go on—indicates how the activity of learning defies being measured by the demands of evidence required by the logic of causal effects. The activity of learning itself resists the instrumental logic of the neoliberal discourse of learning through the ineluctable presence of moments of study.

The case study is of a boy playing with a train as captured in a single photograph. It is not an empirical study, let alone one that is generalizable in a statistical sense (Joldersma, 2005). Rather, it is a (Kantian-like) philosophical analysis, making visible certain "conditions of possibility." Ruitenberg argues that "[t]he activity of studying and the role of the student operate precisely in the gap between what is taught and what may, in the end, be learned or assessed" (Ruitenberg, 2017a, p. 3), making visible a permanent gap between teaching and learning in formal schooling. What my analysis has revealed is a set of conditions that *make possible* the activity of learning. If my analysis holds, it seems plausible to suggest that learning more generally might be conditioned similarly, even when it doesn't appear as obviously embodied or enactive. By showing that these are conditions of possibility of learning in the train example, it seems plausible to suggest that the activity of learning more generally might be conditioned in a similar manner. Although beyond the scope of this paper, but argued elsewhere, there is strong evidence that all cognitive activity is enactive, also that of formal school learning (Joldersma, 2013; Gallagher, 2018). If formal learning is interpreted enactively, then it is plausible to suggest that also learning in formal settings of schools is conditioned by moments of study, as described in this essay. Activities of learning in formal school settings also would be conditioned by moments of study to bridge the standing gaps between teaching and what, if anything, might have been learned. The three elements of the moment of learning suggest this, each in their own way.

First, the body gesture of hesitation can be interpreted more generally as a learner suspending their current understandings of the world, becoming apperceptively attentive to ambiguities in the learner's enactive experience, and enlarging their receptivity towards a larger set of possible affordances in their experience. For learning to occur, a gesture of hesitation would be necessary to create the space required for something new to emerge. That space, created by a hesitation, delays closure onto the already known and the familiar. A gesture of hesitation would indicate the necessary puzzlement with surrounding

affordances, implying the appearance of new possible interpretations. The moment of hesitation gives the requisite space for a moment of turning towards something new. In that case, learning something new is not be possible without the space I've identified as a moment of study. Such hesitation cannot be scripted, that is, caused from the outside.

Second, novel affordances in the turning moment appear in an anticipatory mode. The moment of turning has a temporal dynamic, a *duration*, including the anticipation of a set of novel possibilities of meaning (protentions), framed by a trailing phase of already familiar meanings (retentions), as part of its (occurrent) present moment. The way to traverse the gap between teaching and learning identified by Ruitenberg involves a temporal flow of dwelling in the emergent field of novel potentialities. It can be traversed by the learner, and only by the learner, because of a temporal dynamic of *anticipating* the potentiality of something new can only be experienced by the learner. This cannot be forced by some external, instrumental process; instead, a *learner* suspends the movement towards closure long enough to open up the freedom of moving towards novel understandings. Without the temporal dynamics within the duration of the moment of turning, there would be no temporal movement across the standing gap, and learning would not be possible. This would be true also in more formal settings such as classrooms and schooling. Such turnings cannot be caused by some externally scripted method.

Third, for learning to occur, the student must actually be able to move forward across the gap without a clear end in view. That movement is a kind of playful improvisation, moving beyond what is foreseen without an end goal. Improvisation names how a learner risks commitment to *one* of the new meanings in the set of ambiguous anticipations. The learner might be pulled forward by the positive feeling associated with the to-and-fro movement of attractive play, improvising a move to understanding as a *particular* path forward without knowing exactly what the outcome ought to be. Although in formal settings a teacher, or school system, might try to hedge in the learner as tightly as possible, attempting to script the student to "the" right answer, the production of meaningful understandings is not touched by this seemingly causal structure. Rather, the conditions for the possibility of learning includes playful improvisation *by the learner*. Only then would the gap between teaching and learning be successfully traversed. Improvisation is enacted from within and cannot be caused from the outside. Learning is conditioned by a student-initiated response to what might have been taught.

Learning, as an activity "in and of itself," is a response involving a movement from ambiguity to new understandings of the world. The three aspects of the moment of study suggest that learning cannot be scripted externally. These dimensions block such an account. Ruitenberg says, "when we study … we are involved in an activity of self-formation. …. Study, which centrally involves a relationship of attention between a studier and an object of study, primarily points to itself, in the sense that the result of study is a transformed relationship between the studier and the object of study" (Ruitenberg, 2017, p. 3). My enactive account of learning has revealed three dimensions of self-formation. The standing gap between "the studier and the object of study" doesn't have an externally scripted causal structure, but reveals hesitation, temporal turning, and improvisational play. Body gesture shows a spontaneous hesitation in the moment, something that cannot be caused from the outside. It depends on the learner's own suspension of the expected flow of temporality. This moment is a duration, with trailing retentions constraining but not determining the reception of the ambiguous possibilities in the anticipatory protentions. This triadic structure is not causal, and cannot be scripted to move automatically from retention to protention, from familiar understandings towards new possibilities, let alone to one rather than another possibility that is offered in enacted experience. Improvisational play is a non-causal way of

moving towards something without a clear final end point, a non-instrumental way of traversing the gap between teaching and learning. This undermines the instrumental account of learning because it reveals impromptu, internally initiated strategies for moving forward.

Such undermining resists neoliberalism's problematic logic of learning. This is no idle exercise. As other philosophers of education have showed us, neoliberalism's impact on education has been markedly deleterious (Biesta, 2006; Olssen, 2008; M. A. Peters, 2012). Stephen Vassallo concludes that this discourse has led to a "curriculum of obedience, subordination, and oppression" (Vassallo, 2013, p. 563). And Carl Grant asks (using Mike Rose's words), "Are students being taught in ways that are consistent with cultivating flourishing lives, or are they being trampled over by workforce preparation and consumerism, which are based on a narrow, top-down, technocratic model of teaching and learning where experts determine what children learn and teachers follow a script and transmit its information and standardized tests determine the success or failure of that transmission?" (Grant, 2012, p. 911). These critiques point out that the idea of a tight, instrumental understanding of learning, as specified steps imposed from the outside, has damaging outcomes for education. It has put teachers in a bad light, blaming them for not 'simply' constructing the right steps that guarantee student outcomes. This has led to harmful "value-added measures" (VAM) as ways of assessing not only a teacher's quality but also teacher education programs in their preparation of teacher candidates. And it has led to students being wrongly blamed when they don't learn what the tightly scripted processes claim they will. More generally, this logic positions the learner as blameworthy if they don't adapt to existing unjust social orders while dependent on teachers and their tight scripts for learning. This undermines the flourishing of both teachers and students (Gereluk, 2018).

Making visible an ineluctable moment of study in learning pushes back against that logic of learning. Regardless of what might be measurable by external standards, learning cannot be forced by scripted step-by-step tight, instrumental processes; the actual activity of learning itself undermines this neoliberal logic. For learning to be possible, it requires an internally-initiated gesture of hesitation, making space *by the learner* for new possible understandings of the world. For learning to be possible, it requires an *internally-generated* moment of turning, itself a temporal dynamic involving movement towards new possibilities of understanding. Enacting actual new understandings requires *the learner* to undertake playful improvisation. The hesitation, the turning towards new understandings, and the risky commitment to a particular new interpretation, *cannot be forced* from the outside. Yet they are *jointly necessary* for the activity of learning to occur at all. The radical suggestion is that even when a learner is seemingly caught up in the neoliberal structures of schooling, moments of study still condition learning, undermining the scripted attempts to cause learning. These critiques suggest that not honoring this in education diminishes student and teacher flourishing.

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