Original version:

Zur Rolle leiblichen Lernens angesichts zunehmender Informationsvernetzung
Wie kann Unterricht ausbalancierend angesetzt werden, ohne rückständig zu sein?

Wilfried Sommer

Translation:

On the role of embodied learning in light of the rise of information networks
How can teaching, without being regressive, work to balance?

Wilfried Sommer

Our point of departure

Complex referential and symbolic interrelationships, arising from the precipitous development of modern media, play an ever-larger role in cultural life. More and more, they accompany many fundamental and natural processes. Hübner has taken up this theme and shown, following Schachtner,[1] how with intense media usage, the feeling for one's own corporality decreases, or even may be completely forgotten.[2] For human beings, this means that their cultural existence increasingly loses its bond with the primary spatiality of their body. Their feeling for the coherence of bodily experience decreases. Their cultural existence frees itself gradually from its connection to the natural existence of their body.

If one accepts Fuchs' claim[3] that the spatial experience of the human being always remains connected to an underlying bodily fundament, one finds that basic pedagogical questions appear in a new light: the "body as the basis of learning"[4] becomes a theme of kindergarten and lower school pedagogy, and also increasingly of high school pedagogy. Here, the focus is on teaching-learning processes that build on the spatial and bodily presence of pupils in instructional episodes. On the one hand, one has to organize one's teaching to deal with the

---

[1] Hübner: Medien und Pädagogik.
[2] Schachtner: Geistmaschine, S. 152 ff.
[3] Fuchs: Leib – Raum – Person, S. 162.
[4] Schultheis: Leiblichkeit – Kultur – Erziehung.

diminishing sense of coherence of bodily experience; on the other hand, one looks for ways to compensate for this decrease, or even to develop a new sense of coherence through instructional means. Hübner[5] views artistic activity as such a balancing counter-weight.

When, in what follows, we investigate the role of bodily learning in view of the rise of information networks, then we will be concerned not with explicit artistic activities but rather with cognitive teaching-learning processes; to be more precise, processes that can be traced back to a bodily foundation of spatial experience. This investigation is connected with further questions: How can the sense of coherence of bodily experiences be brought together with culturally-developed symbols? How is it possible to organize teaching-learning processes so that their discursive, symbolic content can be developed out of the feeling of bodily coherence? If one assumes such questions can be answered, then teachers face the task of becoming particularly sensitive to the link between the cultural existence of the human beings and their natural existence. The daily praxis of specialized teaching-learning processes, for example, in the fields of history, physics, and mathematics, would then possess the potential for pupils to use the chances presented by modern media, at the same time balancing their one-sidedness with a solid foundation in bodily experience. Such specialized learning processes would fulfill a particular task in today's world: promoting a cultural life for human beings that is based on their natural existence.

Simulation versus authenticity

The challenge of strengthening the sense of bodily coherence, in order to address the loss of the body through use of media, carries with it a hidden danger. It's all too easy to consider corporeal activities as a possibility for balancing out the decreasing sense of one's own body. These are then given the function of compensating for disintegrative tendencies in the existing cultural life. For example, one hopes that the stimulation of independent activity through instruction in practical arts might be particularly long-lasting and would have the potential to compensate for the passivity in students which is attributed to media consumption.

Similar lines of argument have been considered and discussed by Wulf/Zirfas in regard to the design of school spaces.[6] They establish that integrating the world in the classroom is seen as a pedagogical opportunity. However, they find that the simulation of adventure and nature (or alternatively of home and family) fulfills in many school spaces the "function of a melancholy mimicry of pre-modern worlds".[7] Göhlich/Zirfas recommend that such an opportunity be weighed against the risk that students will perceive the simulations as

---

[5] Hübner: Medien und Pädagogik, S. 258.
[6] Wulf / Zirfas: Performative Pädagogik, S. 27 f.
[7] Göhlich / Zirfas: Lernen, S. 104 f.

inauthentic and hence distant from real life, and will see through them, as a pedagogical-compensatory parallel universe.

Regarding this authenticity, Wulf/Zirfas raise the question, whether or not pedagogical spaces are experienced as natural, just when their separation from the natural environment is unabashed. Referring to Rousseau's model of a natural upbringing, they establish

> "that it is the natural art or the artificial nature that is active in pedagogy and no longer the nature of an imaginary state of nature. […] A completely artificial pedagogy in an absolutely artificial space is absolutely natural. Teaching and learning landscapes are really not natural but rather constructed, simulated environments. And this artificial 'natural'-ness of pedagogical spaces acts the more naturally, the greater the constructed or experienced separation from the environment is.[8]

In what follows, we want to thematize the role of bodily learning in cognitive teaching-learning processes precisely *not* as "melancholy mimicry of pre-modern worlds". Rather, spatial configurations will be explored, that serve as a world-affirming approach for weaving together the natural/bodily existence of human beings with their cultural existence.

The authenticity of these pedagogical spaces will then be investigated, to what degree or in which ways their artificial arrangement (or presentation) achieves its primordial effect in a performative way. To this end, we will make particular use of the work of Rora on bodily learning and presentative symbols, and of Fischer-Lichte on performativity. [9,10]

Presentative symbolism as a lens on bodily learning

Rora refers in her article "Bodily learning – presentative symbolism: An introduction with examples from music instruction" to the presentative symbolism developed by Langer, and uses it as a lens to look at bodily learning.[11,12]

She makes clear, that presentative symbolism is a feature that points "to the natural, bodily existence of the human being".[13] Pedagogy has to "connect its educational strivings to the emotional fullness of meaning of the bodily relationships to the world and to anchor its learning processes therein".[14] When by looking through this lens, "forms of teaching in their presentative symbolic content"[15] present themselves, their relation to bodily learning can be

---

[8] Wulf / Zirfas: Performative Pädagogik, S. 27 f.
[9] Rora: Leibliches Lernen.
[10] Fischer-Lichte: Performativität.
[11] Rora: Leibliches Lernen.
[12] Langer: Philosophie·
[13] Rora: Leibliches Lernen, S. 9.
[14] Ebd. S. 10.
[15] Ebd. S. 12.

made clear. The "corporality of learning"[16] reveals itself then in the various ritual and theatrical forms of instruction, in differing degrees and in specific modalities.

Under the heading "Bodily expression in transition to presentative symbolism"[17], Rora turns her attention to human expression (especially facial expression) as an interface, "at which the natural and cultural existence of the human being meet"[18] and thereby combines positions of Cassirer, Meuter, and Langer.[19,20]

If a hotel receptionist smiles at a guest, that may well be less the expression of an immediate sympathetic feeling between the two, than it is a form of bodily "staging" of the guest policy, that the hotel management has developed and agreed upon with the hotel employees. The more this policy has been prepared in advance and the less it has developed out of the personal attitude of the employee, the more abstract, conceptual, and representative is this smile. Its symbolic meaning can then be treated discursively and is a form of "objectivized" human consciousness.[21]

If, on the other hand, when the smile at the reception desk expresses a strongly experienced, perhaps more complex, impression that the arriving guest *qua* personality is not 'something', but rather 'someone', that as a human being may be interesting, warm-hearted, or refined, then the smile is less the *representative* form of a professional interaction, and much more shows itself as a *presentative* form arising out of the specific context of this human encounter. Here one is concerned less with an abstract meaning subject to discursive discussion, and much more with the immediacy of a specific (hence) presentative symbolic assertion.

The smile of a young child can be even more immediate. It is a sign that needs "no interpretation"; "the observer experiences the smiling face as a signal for approaching nearer, the smile draws an action immediately in its wake".[22]

The the sequence s*ign – presentative symbol – discursive symbol* reveals a process of transformation. The smile ceases to be simply an immediate expression of the body, it takes on many layers of possible significance, that are all latently present in it, until finally it achieves an abstract meaning, that can be separated from the actual smile and discussed discursively.

Both Langer and Rora present the line of thought, developed here with respect to smiling, in a double gesture, on the one hand as an expression from life, and on the other hand as the

---

[16] Ebd. S. 16.
[17] Ebd. S. 2.
[18] Ebd. S. 2.
[19] Meuter: Anthropologie des Ausdrucks.
[20] Langer: Philosophie.
[21] Rora: Leibliches Lernen, S. 1.
[22] Ebd. S. 3.

form of an expression. As the lived expression fades away in the sequence s*ign – presentative symbol – discursive symbol,* it becomes less and less a matter of the active deed of smiling and more and more, of its meaning. The meaning separates itself in the sequence more and more from the activity; it can take on an increasingly abstract connotation. Not this person, that here and now smiles in this way, but rather this smiling is handled as smiling in general. The focus shifts from the first person (personal attitude) to the third person (objective attitude).

If the ability to form symbols is considered a basic function of objectivized consciousness – and both Rora and Langer take this position – then one can identify presentative symbols not only as a phenomenon of human expression, but also as the form, for example, of a picture or of a school lesson. When one considers a picture or school lesson in regard to its presentative symbolism, then in this activity one "establishes a direct connection" between ones own symbolizing capacity "with the act of imagining, including this act's interaction with perception".[23] It makes accessible a simultaneous as well as holistic presentation in its totality. Its elements are to be understood in particular through the meaning of the whole.

Returning to the previous example of smiling, the imaginative activity is not exhausted in the expression of smiling; rather, it is transformed in such a way, that it acts formatively upon the perception; it objectivizes the perception itself through form-giving activity. For, the forms which arise out of this form-giving activity thereby accrue meaning.[24] – Presentative symbolism describes a transition situation: as the example of smiling shows, it is the transition from a personalistic to an objectivizing attitude. The step to non-personal perceptions of things brings about a *statu nascendi* in which the "objective" consciousness of things configures itself within human consciousness.

In what follows we want to investigate this transition situation in the context of phenomenological anthropology in order to grasp more specifically to what extent presentative symbolism is a criterion which reveals the "natural, bodily existence of the human being"[25].

Presentative symbolism in the context of phenomenological anthropology

The bodily foundation of the transition situation described above, moving from a personalistic to an objectivizing attitude, is a theme that is often discussed in the context of phenomenological anthropology, for example, by Fuchs.[26]

As embodied subject, who experiences his bodily sensations immediately in a personalistic mode, the human being acts – in the terminology of philosophical anthropology – in a *centric*

---

[23] Ebd. S. 4.
[24] Langer: Philosophie, S. 96.
[25] Rora: Leibliches Lernen, S. 9.
[26] Fuchs: Leib – Raum – Person. Fuchs: Das Gehirn.

position.[27] He grasps his elementary "life utterances" and his conscious experience together as *subjective body*.[28] This *body-as-subject* is "the nature, that we ourselves are",[29] while the *body-as-object* denotes "the nature, that we have". If the human being views himself as body-as-object, then he's focusing, via an objectivizing approach, on his naturally-given foundation. That is: in an *excentric* position, he looks at himself from a distance, at the physical aspect of his organism and his physiological processes.

> "Persons are those living beings that are in the position to form a relationship to their primary corporality. Hence, they can appear to themselves and to others as both body-as-subject *and* as body-as-object."[30]

Applied to the above example, the smile of a young child would be a sign of a subjective sensation or of a pure experience, while the routine smile at the hotel reception desk would represent an objective sign, a discursive symbol of a habitual behavior. Smiling as a presentative symbol would occupy the boundary between inner sensation and objective symbol; in the gaze of the loved one, inner sensation and objectivized symbol would build an immediate unity, were the gaze completely consistent with how it appears.

The human being can not only experience itself in the dual aspect of body-as-subject and body-as-object, but also other people in this way. The smile of a friend can be a living expression which the friend carries out here and now or it can come to consciousness as the form of an expression which characterizes the behavior of the friend. In the latter case he observes with an objectivizing attitude and considers the behavior of the friend from a "third-person perspective". The smile as living expression reveals itself in the perspective of phenomenological anthropology in a more differentiated way. What someone experiences in a personalistic way when he himself smiles and what reveals itself to him thereby in the inner first-person perspective can

> "also be experienced or perceived from the external, second-person perspective – the latter might also be called the participant- or 'you'-perspective, in which we perceive each other not by objectivizing, but as persons.""[31]

According to Fuchs, presentative symbols involving persons can arise out of transition situations, which characterize the boundary between first- and second-person perspective on

---

[27] Plessner: Die Stufen.
[28] He contrast between the German words "Leib" and "Körper" has no simple analog in English, where both correspond to "body". Since the discussion restricts itself here to the human body, we discuss it in that context. "Leib" then connotes the inner, subjective experience of corporality, while "Körper" connotes the body in its external, objectivized form – as a thing. Possible translations for "Leib", depending on context, include "body-as-subject", "subjective body", "sentient body", "body from the inner perspective", or "inner body", while "Körper" corresponds to "body-as-object", "body-as-thing", "objective body", or "body from the outer perspective". In cases where the juxtaposition between these two meanings is not essential, we use simply "body".
[29] Böhme: Natürlich Natur, S. 77.
[30] Fuchs: Das Gehirn, S. 107.
[31] Ebd. S. 108.

the one side and third-person perspective on the other. By non-personal perceptions of objects, they point to a *statu nascendi*, in which a personalistic attitude, which also carries the first- and second-person perspective, shifts over into an objectivizing attitude, to which the third-person perspective belongs.

The corporeal foundation of this transition situation is the duality of body-as-subject and body-as-object. Corresponding to these two conceptions of the person are two different mind-sets: one personalistic and one objectivizing. A fundamental level of our self-image as person is in this situation both subjective and objective, both personalistic and objectivizing. Presentative symbols point us to a situation in which we are "a being in transition". We recognize ourselves as someone that doesn't split into an either-or, but rather has to be grasped as a "this-as-well-as-that".[32]

The transition situation pointed to by presentative symbols remains permeable to the natural existence of the human being. Here one can try to grasp concretely the cultural existence of the human being where it comes into contact with his natural existence, right down to the bodily level in its dual aspect. Fuchs sums up this point-of-view – referring back to Straus – as follows: "Only in its relationship to bodily communication does perception constitute reality".[33] The body-as-subject becomes the foundation of learning.

In what follows, when embodied learning and in particular school lesson plans are observed through the lens of presentative symbolism, then pupils are called upon in the perspective opened by the teaching-learning process to re-invent themselves continually as persons in a pedagogically-framed encounter with the world. The lens of presentative symbolism opens – in the terminology of phenomenological anthropology – neither a purely subjective nor a purely objective field, but rather a subjective *as well as* an objective field.

Presentative symbolism and phenomenological anthropology as perspectives on teaching

When worlds are opened for pupils through pedagogical means, the pupils' bodily experiences – both from the inner as well as the outer perspective – preconfigure the learning process. With these experiences are associated differing mind-sets, one more personalistic, the other more objectivizing. Out of these mind-sets arise ways of dealing with the world. In the first mind-set "we build up an emotionally-colored relationship to our environment, we experience a sense of belonging and hence that life is worth living". In the second mind-set,

> "on the contrary, the world is alien to us. The freedom to think the spatial reality as empty space and time as objective is won at the cost of our ability to experience in the here and now.

---

[32] Fischer-Lichte: Ästhetik des Performativen, S. 362.
[33] Fuchs: Leib – Raum – Person, S. 61.

For pedagogy, it follows from the emotional fullness of the meanings of the bodily relationship to the world, that it [pedagogy], with its educational strivings, has to establish a connection with these meanings and anchor its learning processes there."[34]

Such connection points could be particular moments in the lesson that – figuratively speaking and in reference to the above discussion – reveal themselves, like the smile of a friend, as an immediate expression and only in the course of the lesson become the expression of *something*, that in a process of creation of meaning can be treated in a discursive way.

The immediate expression could for example be an experiment, during whose performance a phenomenon makes a strong impression on the senses and which, as phenomenon, is allowed to "speak for itself" without comment.

> "In a sequence of experiments, one begins by tapping a variety of tuning forks, so that a chord sounds. After one has "lived in" the experience of the sound with the students for a while, if one then grabs the prongs of tuning forks at the top, the tuning forks immediately stop sounding. Touching the base of the tuning fork has almost no effect, just as tapping the tuning fork on the top produces a clear tone, while the same on the base produces an unclear one.
>
> If one then taps a tuning fork once again, and then quickly submerges it into a glass bowl filled with water, the tone sounds deeper during the submersion and sprays water out – according to the position of the tuning fork, either just to the side (when one of the prongs meets the water surface face-on) or simultaneously to the side and energetically upwards (when both prongs are submerged parallel to each other). Finally, the students, in small groups or with partners, tap the tuning forks themselves and hold the vibrating ends against each others' noses (it tickles), or hold the base end against a series of objects (that sound along with the tuning fork).
>
> The set-up, execution, and observation of the experiment are to be recorded in a notebook. When this also includes what was exciting, what was unpleasant, what was surprising, etc., then what was experienced can live again in the memory of the pupil in an emotionally-accessible manner. In the school lesson a situation then arises in which the student can form a stronger emotional connection with what has been experienced.[35]

When the manner of performing the experiment reveals how the one appearance *here* (for example, the position of the tuning fork) is a condition for the other *there* (for example, the various ways that the water sprays out), so that the spatial arrangement in its mutual conditioning comes to light, then it can happen that the world thereby "smiles intensely" at the pupils. They would then feel themselves spoken to in the participant- or 'you'-perspective (see above) in a personalistic attitude, particularly so, when they can, with awake senses, turn their full attention to the course of the experiment and not be pulled out of this sensual presence by explanatory comments from the teacher. Then they would themselves be able,

---

[34] Rora: Leibliches Lernen, S. 10.
[35] Sommer: Zur Allgemeinen Didaktik, S. 65 f.

after a didactically-successful execution of the experiment, to complete the change into an objectivizing mind-set (for example, through the question, "What is the tuning fork doing, while it sounds?") The experiment reveals itself in presentative symbolism and at the same time opens a way into creation of meaning which contains forms of discursive symbols – in this case the oppositely-oriented transverse vibration of the two prongs.

The immediate expression might also be a series of calculations, for example, the assignment to calculate the fractions one-seventh, two-sevenths, etc. up to six-sevenths. The sequence of remainders obtained by the long division is to be recorded, as well as the periodic decimal expansion produced by the long division.

$$\frac{1}{7} = 1:7 = 0{,}142857 \qquad \text{Remainders}: 3,2,6,4,5,1$$

$$\frac{2}{7} = 2:7 = 0{,}285714 \qquad \text{Remainders}: 6,4,5,1,3,2$$

$$\frac{3}{7} = 3:7 = 0{,}428571 \qquad \text{Remainders}: 2,6,4,5,1,3$$

$$\frac{4}{7} = 4:7 = 0{,}571428 \qquad \text{Remainders}: 5,1,3,2,6,4$$

$$\frac{5}{7} = 5:7 = 0{,}714285 \qquad \text{Remainders}: 1,3,2,6,4,5$$

$$\frac{6}{7} = 6:7 = 0{,}857142 \qquad \text{Remainders}: 4,5,1,3,2,6$$

The world of numbers might smile at one or the other pupil, by expressing that all the remainders lie between the numbers 1 and 6, that the sequence then repeats itself cyclically, and that a similar periodicity appears in the sequence of digits of the decimal expansion of the fraction. This smiling arises out of the rhythm of the activity of calculating itself, in that by the divisions from 1:7 to 6:7 certain steps of the calculation indeed repeat themselves, but always at a different position in the course of the different divisions (1:7, 2:7, etc.). – For didactic reasons, the division is not to be carried out by the pupils using a calculator, since the point is to go through the steps of the division process themselves.

In the continuation of the lesson perhaps this smile and also the joy in the discovered lawfulness develops further, when it becomes visible that they are the expression of a meaningful connection: for example, the connection between the decimal periods all having 6 digits and the denominator 7 of all the fractions. This connection reveals itself directly when one brings the individual steps of the division that one has calculated into the focus of analytical, objectivizing scrutiny.

Last but not least, the immediate expression might also be an account – based on carefully-selected concrete details – of the waking ceremony of King Louis XVI in the midst of the Palace of Versailles complex. The plasticity of the story-telling might give rise to one or more smiles, as the world of absolutism smiles at one or more students. The spatial arrangement, filled with absolutistic life, would be present without mediation.

> When, on the basis of a teacher's concrete and "true-to-life" representation, students in a history lesson create for themselves a vivid image of a historic situation and proceed to live into it in an immediate way, then a "moment of encounter" occurs – comparable to a physics experiment – to the extent that also here a perspective arising from life stands in the foreground. In contrast to the physics experiment this doesn't take place as a process that can be immediately experienced by the senses in space, but rather comes about through active participation in the teacher's verbal description of the events.
>
> An encounter with French absolutism can for example arise through a graphic description, grounded on memorable details, of the ceremony for waking Louis XVI and the surrounding palace complex at Versailles. In this regard, detailed knowledge of the courtly behavior, the persons involved, as well as the spatial relationships in Versailles are important ingredients in order for the depiction to make participatory access possible, so that the described process can be imagined as an inner picture. At the beginning of historical knowledge stands the inner experience."[36]

The further course of the lesson leads possibly to the question, what does it say, that in the center of a palace complex there is no longer a church but rather a bedroom? Out of the presentative symbolism of absolutistic life emerge the secular, discursive symbols of power.

The conceptual approach of these examples is closely related to the archetypal method proposed by Klafki and also to the program of Wagenschein,[37, 38] to start out from "concrete, unique problems with a heightened 'reality-density'" that at the same time point to a general lawfulness. Corresponding to this, the teacher has to design the students' encounter with the world, with a reality, so that through the encounter itself a cognitive movement is set in motion. By pushing this cognitive movement through to its completion, it should be possible for the student themselves to arrive at a general truth or lawfulness.

The heightened "reality-density" of such concrete, single problems often can be traced back to the fact that in them different themes are layered together in complex ways and hence determine or constitute the density of the single situation: to begin with, one has to tap the tuning fork on the right spot, manage to submerge it in water in different ways, and finally let water dance on its prongs in an orderly way, in order to understand afterwards how one can derive, out of necessity, the motion of the prongs. What speaks in miniature through the

---

[36] Sommer: Zur Allgemeinen Didaktik, S. 65 f.
[37] Klafki: Das pädagogische Problem.
[38] Wagenschein: Verstehen lehren, S. 101.

complex interpenetration of intense sense impressions is later laid out side-by-side and treated discursively. The self-sufficiency of the strongly sense-perceptual encounter in the experiment is qualitatively different from the situation in which a presentative in-each-other becomes a discursive side-by-side.

One can safely assume that, just as the smile of a friend is bound to the bodily foundation of the experience, both subjective and objective, the examples given here of lesson plans build upon this dual foundation. What students meet on this ground appears in the instructional situation as a demand coming from outside to open oneself for expanded experience horizons and to create meaning: "To begin to see the things in a new light is an ongoing process in which being involved means an immediate embodied participation."[39] – Pupils are here bound up in a presentation, where something is at first an immediate expression, before it becomes the expression of *something*, through a process of "creation of meaning".

The staging of the instructional examples is carried out so that they build upon a foundation of bodily communication, also in those cases not centered on a strongly sense-perceptual experiment; for example, a sequence of calculations or an historical description. Nonetheless, the instructional experience demands a change of perspective: from body-as-subject to body-as-object, from the personalistic to the objectivizing mind-set, from presentative to discursive symbolism.

The subject of the learner is – according to the basic thesis presented here – called upon to make a change of perspective, in such a way as occurs when he as person forms a relationship to his primordial corporality and, observing himself from a distance, creates meaning. The presentation of the lesson then supports a feeling of bodily coherence and speaks to the dual foundation (body-as-subject *and* body-as-object) of our self-perception as person.

School lessons viewed through the lens of a performative pedagogy

The lesson outlines sketched above for physics, mathematics, and history are based on "the emotional fullness of the bodily relationships to the world" and can be characterized as a participatory experience,[40] at whose center stands the requirement to change one's own perspective. This change corresponds to the activity of persons when they form a connection to their primordial corporality. In this respect, it involves a personal, bodily (body-as-subject *and* body-as-object), participatory experience. At the same time such a participatory experience points to a way of integrating the body (in both aspects) as a basis for cognitive teaching-learning processes.

---

[39] Meyer-Drawe: Lernen als Erfahrung.
[40] Rora: Leibliches Lernen, S. 10.

Rora demonstrated bodily learning in two examples of introducing rhythm in music classes of different age groups, while there are corresponding examples for the model of the main lesson instruction in the Waldorf School.[41]

When an experiment is conducted or a piece of history is told in the indicated way, not only do students form a bodily relation to it, in fact the teacher usually develops at the same time a feeling for the specific bodily presence of the students in space. Additionally, an impression of the manner in which the experimental content 'right now' manifests itself and takes hold of the space, or of the atmosphere that develops in the space 'today' as a result of the historical story-telling. Atmospheric presence in space and the subjective presence of all the participants flow together.

The qualities of performative acting developed by Fischer-Lichte provide a framework for regarding this bodily co-presence of all participants in a specific spatiality.[42] The subject-object boundary between teacher and students destabilizes. It becomes a threshold, along which a 'space' of collective pedagogical activity is simultaneously entered and created. In the same way, the boundary destabilizes – the boundary that stands between the persons participating in the pedagogical process and the encounter (the one presented in the lesson) with the 'subject matter' or world. This boundary turns into a threshold, over which these persons enter and create a space. They immerse themselves in an atmosphere, they become "in a certain way a part of the atmosphere" and contribute "through their reactions to its strengthening, its weakening, or even to its disappearance – and so, if necessary, to bringing spatiality into being in a new and different way."[43] Space is then no longer simply a container for external processes, but rather as atmosphere it is "spatially poured out" and "without location" at the same time.[44]

The pedagogical activation of space which the students and the teacher together achieve here is at one and the same time the resonance space for the change of perspective that the students are pushed towards in the course of the lesson. This *inner space of bodily resonance* becomes, through the completion of the change of perspective, the *outer resonance body* of discursive symbolic meaning (the choice of words used here is borrowed from the terminology of phenomenological anthropology). When the space of bodily resonance sounds full of intensity, then one can expect that it at the same time presents a well-adapted resonance body. Then the pedagogically-activated space and the (subjective) bodily actions of all participants in the pedagogical process will be harmoniously tuned to one

---

[41] Sommer: Oberstufenunterricht. Sommer: Zur Allgemeinen Didaktik.
[42] Fischer-Lichte: Performativität, S. 53-60.
[43] Ebd. S. 60.
[44] Böhme: Atmosphäre.

another. Their inner-bodily as well as outer-bodily feeling of coherence takes hold together of the space.

In this way, the intensity of life in the classroom would not just be strong, it would be characterized by a specific property that Fischer-Lichte describes as follows:

> As living organisms endowed with a consciousness, as embodied mind, they can become themselves only by permanently bringing themselves forth anew, constantly transforming themselves, and continuing to cross thresholds. Performance allows, indeed, forces them to do so. In a way performance can be thought of both as life itself and as its model. It is life itself because it takes up the real time of the participants' lives and offers them the possibility to constantly bring themselves forth anew. It is life's model because these processes occur with a particular intensity and conspicuousness that focuses the participants' attention on them".[45]

Life processes take place in this performative context with particular intensity. On the plane on which the learning process fulfills itself, there arises with the same intensity the possibility of an inner- and outer-bodily participation in the world, leading to a cognitive participation. As it also serves as a model for life, one can establish the habit of taking hold of encounters with the world as a motivation to become someone else, to create oneself anew and thereby carry out the change of perspective described above. Educational processes become in this sense transformational processes. The boundary experiences become thresholds that, when crossed, lead a human being to the realization that he/she is also "a transitional being"[46], that he/she is also a self-transformer.

Authenticity and artifice

The participatory and transformational processes of instruction, described above, are characterized by a double gesture. On the one hand they present pedagogical themes via an (artificial) staging. On the other hand, the pattern of the presentation aims at an intensified bodily participation in its dual aspect. Students are asked to come into a relationship to intense bodily encounters in a pedagogically-activated space. These encounters can be – despite their artificiality – at the same time authentic. Students then form a connection to an authentic encounter and derive from it meaningful connections in the associated discursive symbolism.

Examples of such an encounter: some natural event is captured in an authentic way in an experiment, so that this event in its primordial form is present in a pedogically-activated space during the course of the experiment. Or, a historical description of life in the absolutist court or the social unrest on the eve of the French Revolution comes to life by capturing the mood and including poignant details – in a word, authentically. In mathematics, the divisions

---

[45] Fischer-Lichte: Ästhetik des Performativen, S. 359.
[46] Ebd. S. 362.

of one-seventh, two-sevenths, etc., that build upon one another, and which produce a well-ordered sequence of digits as result, are – figuratively speaking – a bodily and primordial meeting with number theory as an immediate experience (after all, in calculating activity the students are absorbed in their body-as-subject with a well-ordered mathematical content), while the insight that one-seventh (or more generally one-nth) leads to a decimal expansion with a period length of at most 6 digits (more generally (n-1) digits) is the aspect of body-as-object that explicitly establishes a meaningful connection (the students here look from a distance at their own calculating activity).

The hypothesis developed by Wulf and Zirfas,[47] that an absolutely artifical pedagogy in an absolutely artifical space can nevertheless be absolutely natural finds strong confirmation here. The sought-for bodily teaching-learning processes are the responsibility of teachers who make possible or present authentic encounters in instruction. A guiding theme of such efforts can be found in the wish to connect the cultural existence of the human beings with their natural one. For this, one has to build up a habit that supports the bodily feeling of coherence and which in turn is supported by the bodily feeling of coherence.

The hope thus arises that students will learn to use the possibilities of media in an independent manner. Forgetfulness of the body, to which the use of media with its virtual nature leads, is counteracted by a solid feeling of bodily coherence (in both subjective and objective aspects) which has been developed and made familiar through cognitive teaching-learning processes. Their bodily learning (in its double aspect) does not represent a "melancholy mimicry of pre-modern worlds",[48] but rather integrates itself within an authentic activation of pedagogical spaces. In terms of media pedagogy, this approach – and particularly its focus on bodily learning – does not work to compensate, but to integrate.

In a nutshell: May students integrate the over-abundance of information – which through media has brought them into a condition of body forgetfulness – with meaningful world encounters that have pregnantly smiled, are smiling, or will smile at them.

To develop cognitive teaching-learning processes didactically that fulfill the criteria developed here is a task to be carried out in the mirror of specialized subject matter and its didactics. This is a task for teaching education institutions. The goal is to connect the objective consciousness of human beings in their presentative and discursive symbolic forms with the change of perspective that occurs when the human being forms a relationship to its primary bodily experience. On this basis artificial pedagogical performances can still be authentic. The pedagogically-activated space becomes an authentic space.

---

[47] Wulf / Zirfas: Performative Pädagogik.
[48] Ebd.

Bibliography

Böhme, Gernot: Natürlich Natur. Über Natur im Zeitalter ihrer technischen Reproduzierbarkeit. Frankfurt am Main 1992.

Böhme, Gernot: Atmosphäre. Essays zur neuen Ästhetik. Frankfurt am Main 2013.

Fischer-Lichte, Erika: Ästhetik des Performativen. Frankfurt am Main 2004. English Translation: Fischer-Lichte, Erika: The transformative power of performance, a new Aesthetics, London, 2008, translated by Saskya Iris Jain.

Fischer-Lichte, Erika: Performativität. Eine Einführung. Bielefeld 2012.

Fuchs, Thomas: Leib – Raum – Person. Entwurf einer phänomenologischen Anthropologie. Stuttgart 2000.

Fuchs, Thomas: Das Gehirn – ein Beziehungsorgan. Eine phänomenologisch-ökologische Konzeption. Stuttgart 2008.

Göhlich, Michael/Zirfas, Jörg: Lernen. Ein pädagogischer Grundbegriff. Stuttgart 2007.

Hübner, Edwin: Medien und Pädagogik. Stuttgart 2015.

Klafki, Wolfgang: Das pädagogische Problem des Elementaren und die Theorie der kategorialen Bildung. Weinheim 1964.

Langer, Susanne K.: Philosophie auf neuem Wege. Frankfurt am Main 1987.

Meuter, Norbert: Anthropologie des Ausdrucks. Die Expressivität des Menschen zwischen Natur und Kultur. München 2006.

Meyer-Drawe, Käte: Lernen als Erfahrung. In: Zeitschrift für Erziehungswissenschaft, Jg. 6, 2003, H. 4, S. 505-514.

Plessner, Helmuth: Die Stufen des Organischen und der Mensch. Berlin 1975.

Rora, Constanze: Leibliches Lernen – Präsentative Symbolik. In: Zeitschrift Ästhetische Bildung, Jg. 2, 2010, H. 1, S. 1-20.

Schachtner, Christina: Geistmaschine. Faszination und Provokation am Computer. Frankfurt am Main 1993.

Schultheis, Klaudia: Leiblichkeit – Kultur – Erziehung. Zur Theorie der elementaren Erziehung. Weinheim 1998.

Sommer, Wilfried: Oberstufenunterricht an der Waldorfschule: Kognitive Herausforderungen für das verkörperte Selbst. In: Research on Steiner Education, Jg. 1, 2010, H. 1, S. 33-48 und Jg. 1, 2010, H. 2, S. 53-63. English Translation: Upper-School Teaching at Steiner

Waldorf Schools: Cognitive Challenges for The Embodied Self. In: Research on Steiner Education, Volume 1, 2010, Number 1, pp. 19-32 und Volume 1, 2010, Number 2, pp. 43-52.

Sommer, Wilfried: Zur Allgemeinen Didaktik der Waldorfpädagogik und Klafkis bildungstheoretischen Ansätzen – Bezüge und Trennlinien. In: Research on Steiner Education, Jg. 4, 2013, H. 1, S. 58-72. English Translation: The general didactics of Waldorf education and Klafki's approaches in educational theory – Connections and divisions. In: Research on Steiner Education, Volume 5, 2014, Number 1, pp. 48-61.

Wagenschein, Martin: Verstehen lehren. Weinheim 2008.

Wulf, Christoph/Zirfas, Jörg: Performative Pädagogik und performative Bildungstheorien. – Ein neuer Fokus erziehungswissenschaftlicher Forschung. In: Wulf / Zirfas (Hg.): Pädagogik des Performativen. Weinheim und Basel 2007.