On the Definition of Learning

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Contents

Articulating a base for the development of a concept of learning

Nina Bonderup Dohn

Introduction

As pointed out by Qvortrup, Wiberg, Christensen and Hansbøl in the introduction to this anthology, in contemporary educational and societal debates the term 'learning' is used in a variety of ways, not all of them compatible, to denote a range of phenomena, the relationship between which is unclear to say the least. 'Lifelong', 'cooperative', 'organizational', 'informal', 'inquiry-based', are just a few of the terms put in front of 'learning' in the literature; each of them implicating (rather divergent) units of analysis, entities of learning, and, more generally, epistemological and ontological assumptions about person, world, knowledge, and coming-to-know. Clarifications and development of the conceptions of learning involved in these uses are needed, as is the articulation of a (theoretically and empirically informed) concept of learning which may be used in the evaluation of the varying conceptions.

The aim of this article is to take a first step towards such an articulation. A seemingly reasonable way to start is to ask oneself what a theory of learning must be able to account *for*; what it must take *into* account in doing so; and how much of this must be taken into account in the very concept of learning utilized in developing the theory. Now, the question of how theories and concepts relate to one another is itself a complex one since concepts will be theory-informed, or even theory-loaded (Kuhn 1970; Lakatos 1980; Popper 1972). Suffice it here to say that some theoretical assumptions will be inherent in the concepts used in a theory, and that these theoretical assumptions will develop as the theory is developed, but that the theory in general will have a wider theoretical and empirical scope – it will say more about the world – than what is implied in its concepts alone.

Engeström has pointed out four questions that any theory of learning must be able to account *for*: 1) *Who* are the subjects of learning,

2) *Why* do they learn, 3) *What* do they learn, and 4) *How* do they learn (Engeström, 2001). Similarly, Lave and Packer claim that A) the relationship between subject and world, B) the telos of change, and C) the mechanisms whereby this change is accomplished are "the minimum components of any theory of learning worthy of the name" (Lave & Packer 2008). Here, some assumptions about *at least* Engeström's points 1 and 3 and Lave & Packer's point A will be inherent in the concept of learning employed in the theory: one will need an initial idea of who the subjects of learning are (and this idea will involve an idea of how the subjects and the world relate ontologically), and what the learning process may result in (a basic notion of the ontology of the result – is it skills, knowledge, identity, life, etc.; and what is the nature of these?) to even be able to identify instances of learning. Arguably, why subjects learn and how they do it (and similarly the telos and mechanisms of the process) will be more empirical questions to be answered through developing the theory in dialogue with empirical research. In the following I therefore concentrate on *the subjects of learning*, *their relationship to the world (including other subjects)*, and *the ontology of the result of learning*. I shall argue for 4 basic claims about these matters that must be taken into account, not only in developing the theory, but in developing its concept of learning itself. The claims are all philosophically and empirically corroborated. They are:

1. We need a concept of learning focused on the individual.
2. A focus on the individual does not imply neglecting sociality. The individual is a "person-in-the world", and the world has social aspects.
3. These 'social aspects' play different roles in learning (ranging from constitutive ones to contingent mediatory ones) at different analytical levels, in different content domains, and in different situations.
4. Knowledge fundamentally has tacit, actionable embodied aspects and acquires essential context-dependent content and form from its situated realization.

I should stress that my contention is not that these 4 claims exhaust all possible claims which must be taken into account in articulating a concept of learning. They are necessary aspects, but are probably not jointly sufficient. Other claims might be necessary to take into account,

too. There is for instance amble evidence that representations, both in the form of mental models and in the form of linguistic propositions, also play a role in learning (e.g. Gentner & Stevens 1983; Held, Knauff, & Vosgerau 2006; Johnson 1987; Lakoff & Johnson 1999; Magnani & Nersessian 2002). Even the starkest proponents of tacit knowledge accept this (Molander 1992, 1996; Wackerhausen 1991), at least for some stages of learning (Dreyfus 1979; Dreyfus & Dreyfus 1986) and perhaps building on tacit aspects (Polanyi 1962, 1966). I choose to focus on the proposed 4 claims because they form a middle ground between individualist cognitivist theories (which tend to neglect the significance of tacit knowledge as well as the constitutive role which social context plays for some domains in some situations) on the one hand and situated learning theories (which tend to neglect that sociality is not constitutive of learning in all domains, at all times, at all analytical levels) on the other. My aim is precisely to point out that this middle ground holds promise of being a viable position from which to articulate a concept of learning.

Line of argumentation – 'philosophizing with'

Before turning to the argument for the claims, however, a metaphilosophical comment about the line of argumentation – and especially about the way it integrates different philosophical and empirical perspectives – is in order. I shall undertake a kind of 'philosophizing with' (Hansson 2008) the academic field of learning; more specifically the kind of 'philosophizing with' where one is a 'dialogue partner with a voice of one's own' (Dohn 2009a, 2011b).

This role implies applying 'traditional' philosophical methods such as conceptual analysis, 'armchair intuitions', hermeneutical and phenomenological analysis, commonsense observations etc. to issues within the empirical sciences. Not in the manner of an a priori (and thereby final) arbiter of the meaningfulness of concepts and views as envisaged by e.g. the logical positivists (Ayer 1936; Carnap 1928) and practiced today by Bennett and Hacker (Bennett & Hacker 2003). Nor solely as 'conceptual clarifier' or 'interpreter of empirical results' on the platform of and within the limits set by present day empirical science such as e.g. Dennett, Jackson, and Searle do (in very different ways and with very different results) (Dennett 1991; Jackson 1998; Searle

1983). Instead, 'philosophizing with' as a dialogue partner amounts to utilizing input from 'traditional' philosophical methods together with all available empirical evidence to construct reasonable theories. The expectation is not that all pieces may be brought to fit nicely together – most often the philosophical input will be diverse as will empirical results, with contradictions within each type of input as well as between types. Nor do I accord more initial credibility to one form of input over the other: Armchair intuitions may be proven wrong empirically (the shortest distance between two points is not a straight line if space is curved, as it has turned out – against intuition – to be in our universe). Empirical observations may be shown to be based on untenable conceptual presuppositions and therefore to be misconstrued (as the presupposition of a clear-cut observer-phenomenon distinction led to problematic observations concerning the nature of light a hundred years ago). As others have argued, too, the goal is to reach 'reflective equilibrium' (Goodman 1955; Rawls 1971) where diverse forms of input are weighed against each other, some pieces are discarded (with explanation of why and of why they were formerly thought to be acceptable), others reinterpreted and the most reasonable account construed. Philosophy has a distinct voice of its own in this dialogue for 'reflective equilibrium' because it pursues normative and foundational issues beyond empirical investigations.

Utilizing this type of integrative and dialogically minded 'philosophizing with', I shall in the following formulate and provide evidence (philosophical and empirical) for the abovementioned 4 claims.

Claim 1:
A concept of learning must be focused on the individual

This claim is corroborated by a *philosophical argument*, more specifically by an example of 'armchair' *conceptual analysis* in the vein of Anglo-American analytical philosophy. The outset for the argument is Jackson's point that when a theory makes use of a term which is also used in everyday 'folk' parlance, then it is essential to accommodate the 'folk' understanding of the concept to which the term refers (Jackson 1998). This does not mean that a theory cannot define and articulate new concepts – on the contrary, this is a fully legitimate and often necessary move. It only means that when one does, one should not

choose words in use in folk parlance to denote these new concepts if they do not incorporate the concepts implied by the everyday usage of the words. Otherwise equivocations and misunderstandings will ensue, because one is not "addressing the subject we folk suppose is up for discussion", but will in point of fact have "changed the subject by stipulating new uses of the words" (Jackson 1998, p. 38, 42).

Now, learning is certainly a term in (wide) use in everyday folk parlance so Jackson's point is highly relevant here. Further, it is key to the pre-understanding of learning inherent in this folk usage that it takes its outset in the individual human being: Learning is seen as a phenomenon (process, state, disposition, etc.) which takes place in, happens to or is undertaken by the individual person. Therefore, in articulating a concept of learning, focus must be on the individual.

However, establishing this necessary focus does not imply that we cannot find – empirically, philosophically or both – that an individual's learning can only be fully understood with reference to the evolvement of a system (e.g. a system of interactions between people). Nor does it rule a priori against speaking of a system's learning as in 'learning organizations', 'group learning' or 'computer learning'. But it does mean that the relationship to individual human learning must be explicated. In the latter case (system's learning) by arguing for why the given system's learning is similar to individual human learning in ways significant enough to make it reasonable to use the same term. In the former case (dependency on a system) by explicating in detail (probably both empirically and philosophically) how the individual's learning comes about as part of the evolvement of the system.

Therefore, more specifically, claim 1 does imply that some theoretical uses of the term 'learning' are problematic as they stand. Talk of "learning as social practice" (translated subtitle of Nielsen & Kvale 1999) or "learning as an aspect of the activities in which persons are constituted by, and constitute themselves in participation in communities of practice" (Lave & Packer 2008, p. 33) is incomplete at best if no discussion is provided of how these ways of using the term relate to everyday conceptions of learning as an individual phenomenon. Similarly, talk of "learning as neuronal connecting" (as opposed to e.g. 'learning facilitated by neuronal connecting') compels an explication of exactly how the neuronal connecting 'is' the same process (or state, disposition, etc.) as the phenomenologically well-known situation of

for instance coming to know a new fact or becoming able to exercise a new skill.[1]

Claim 2: The individual is a 'person-in-the-world' which implies sociality

Claim 1 postulates a need for a focus on the individual. This might be understood as directing the concept of learning 'inwards', away from social interaction, into the mind (or brain) of the individual. The gist of claim 2 is to counter this interpretation by pointing out that the individual is a "person-in-the-world", not an entity in radical independent existence from the world. Focus on the individual therefore directs the concept of learning to the world and entails analysis of the significance of world for individual being. Further, the world has social aspects and for this reason a focus on the individual does not entail neglecting sociality. Claim 2 is substantiated by two types of *philosophical* argument – a Heidegger-Merleau-Pontian *phenomenological* analysis and a Hegelian *hermeneutic* one – and by a host of *empirical* corroborating examples from *sociocultural theory*, especially situated learning.

Firstly, as Heidegger and Merleau-Ponty argue, we are as humans always already in the world as acting beings, meeting and making use of the world in its *Zuhandenheit* for us (Heidegger 1986; Merleau-Ponty 1962), i.e. meeting the world as always-already a meaningfully structured place which we 'know our way around' in as we 'go about our business'. This 'being in the world' is prior to any distinction between subject and object – a distinction which does not in fact arise before a 'breakdown' of the *Zuhandenheit* (to use Dreyfus' expression, cf. Dreyfus 1991) into a *Vorhandenheit* of the things present. Breakdowns, on their part, happen when things perform in ways not anticipated in our 'going about our business', such as when a hammer breaks in use or the computer program crashes in the midst of writing.

Now, in and through our acting in the world, we have a pre-reflective understanding of it. It is precisely this pre-reflective understanding which is challenged in breakdowns – but which on the other hand is necessary for breakdowns to occur: It is our pre-reflective understanding which lets us have (unarticulated and non-reflected) anticipations that can be disappointed, thereby effecting the awareness

of self-and-anticipations as different from object-and-what-happened. Our pre-reflective understanding of the world is holistic and gestaltlike – aspects and traits are constituted *as* aspects/traits by the overall meaningfulness of the situation. They get their more specific meaning through their significance for the overall meaningfulness. A hammer is a hammer (as opposed to e.g. a metal block on a stick) in virtue of being used in human practices of building and joining things together; practices that take place in certain types of settings such as workshops, building sites etc. Actually, 'metal blocks on sticks' are metal blocks on sticks in virtue of human practices, too, e.g. the human scientifically inspired practice of attempting to define artefacts in 'neutral' terms.

Thus far, the argument establishes that the individual is a 'person-in-the-world'; which means that to understand the individual's learning, one has to understand its outset in human agency in the world and the pre-reflective understanding established in and through it. The further argument is that the human practices and settings in which meaningfulness is rooted are developed culturally and that people are 'initiated' into them through interaction with others. Therefore the world (as the meaningful whole that meets us and of which we always already have a pre-reflective understanding) has social aspects. For this reason, even though a concept of learning must focus on the individual's learning (to accommodate to claim 1), this does not imply neglecting sociality. The focus on the individual of itself leads to the requirement of taking sociality into account.

This phenomenological argument for the non-negligibility of sociality, even given the individual as outset and focus, may be supplemented with the hermeneutic analysis of Hegel and Marx concerning how man's 'nature' is constituted (an analysis which, it should be noted, at least in its Hegelian version to some extent was a source of inspiration for Heidegger): We become who we are through the interaction with others, and the interpretation and self-interpretation which this interaction allows us to make. With Hegel's example: The Master and Slave co-constitute each other's identities – the Master is as dependent on the Slave's recognition of him as Master to be, and understand himself to be, Master, as the Slave is of the Master's recognition of him as Slave to be (and understand himself to be) Slave. Both need the other and the other's recognition to be who and what they are (Hegel 1807/1952). Or with more modern examples: Teacher and students are mutually

dependent on each other's recognition of these identities to actually be teacher and students (and not just persons coincidentally happening to be simultaneously in the same room); employer and employees similarly depend on each other for their interpretation and self-interpretation of these identities. In this sense, too, the world has social aspects, and the person-in-the-world is a social being.

Empirically, the claim is corroborated by research within sociocultural theory, especially situated learning. Examples of more concrete ways in which 'the world has social aspects' abound, from Vygotsky, back to the theory's roots in Hegel and Marx (Packer & Goicoechea 2000), and onwards to phenomenologically inspired sociology and anthropology, with Bourdieu's investigations of 'habitus' and 'field' as an obvious focal point. To mention just a few of these:

- Vygotsky initially demonstrated the significance of internalization of cultural practices for the development of the "higher psychological processes" (Vygotsky 1978). He did this both with semi-empirical examples, supported by non-rigorous observation, of language acquisition, and with empirical investigations of how children develop cognitive functions and learn through guidance from others, within their 'zone of proximal development'.
- Vygotsky's Western heirs have supplied several detailed examples. These include Wertsch's analyses of individual action as tool-mediated (Wertsch 1998), Cole and Scribner's research on reasoning in different cultures (Cole & Scribner 1974; Scribner & Cole 1973) and Hedegaard's studies of classroom learning (Hedegaard 1995). Säljö (2000) provides a nice overview of empirical evidence within this field, as well as a developed theoretical argument for the socio-cultural approach.
- Holland, Lachicotte Jr, Skinner, and Cain report from a range of empirical cases, including studies of the lives of Nepalese and Japanese women, of 'initiation' into Anonymous Alcoholics, of views on women within a college world, and of the self-understanding of a man diagnosed with a mental disorder (Holland, Lachicotte Jr, Skinner, & Cain 1998). These cases all document that individuals acquire and improvise their identities as persons living in worlds which are already socially figured.
- Greeno and others have provided detailed studies of the significance of classroom interactions for creating (or withholding) opportunities

to learn for given students and for the resulting cognitive understandings which the students develop (Greeno & Gresalfi 2008; Greeno & van de Sande 2007; Gresalfi 2009; Hand 2010). These studies thus show how the individual's learning is dependent upon and inherently bound up with the individual's being in the world of social interaction.

- Lave and Wenger, building on Lave's empirical research, describe tailor apprentices' learning as a learning of "who is involved; what they do; what everyday life is like; how masters talk, walk, work, and generally conduct their lives..." (Lave & Wenger 1991, p. 95). This 'social' learning is an integral part, they argue, of developing the craftsmanship of tailoring. Individual 'skill acquisition' must be understood through the person's being in the world of social negotiation of tailor identity.
- Bourdieu's analyses of the habitus and field of both indigenous cultures and cultures within the Western world, notably the academic one(s), provide documentation for the immersion of the individual in a social world (Bourdieu 1977, 1990, 2000). These analyses provide the empirical analogue to Heidegger's philosophical claims about *das Man* that we always already are part of and think with, as well as to Merleau-Ponty's argument that we meet the world first and foremost as acting, bodily beings whose understandings of the world are incorporated in their doings.

Claim 3:
The role of 'social aspects' in learning depend on content domain and situation

Claim 2 posits that 'the world has social aspects'. However, claiming this does not necessarily imply that the world is socially mediated, constituted, or determined in the same way and to the same degree across different content domains and across diverse kinds of situation. It certainly doesn't imply a full-blown social constructivist ontology, i.e. that the world is fully constituted through social interaction, as (one might interpret) e.g. Barnes and Bloor (to) hold (Barnes & Bloor 1982). Jumping from the demonstration of 'social aspects' to the claim that the world is socially constituted and constructed, thus neglecting possible differences between domains and situations, amounts to

making an 'overgeneralization mistake'. Sociocultural theorists are prone to make this mistake because they take their outset in the 'system of social interaction', be this in terms of the 'social practice' (e.g. Lave & Wenger 1991; Nielsen & Kvale 1999), 'activity system' (Engeström 1987), 'communities of practice' (Wenger 1998) or the like. Such an outset makes it easy to overlook differences in social mediation between domains and situations because the investigating hereof involves questioning the dominance of sociality which to some extent is presupposed in their formulation of their outset.

Opposing this tendency, claim 3 states that the role of 'social aspects' in learning does in fact depend on content domain and situation. Corroboration of this claim is given through a philosophical analysis, in the vein of *analytical philosophy*. The analysis supplies a framework of analytical levels at which a given situation poses demands, possibilities, and restrictions on a person – what I term the 'requirement characteristics' of the situation. The plausibility of the framework is illustrated by indicating its applicability to *empirical examples*. In addition, reference is made to *empirical research* which independently of the framework documents that at least one of the levels (the domain-internal context level, cf. below) is not fully constituted by socially mediated or constituted requirements at the other levels.

The framework is inspired by Wedege's distinction between 'situation context' and 'problem context' (Wedege 1999), put forward to qualify the discussion of what is involved in knowing mathematics in different situations. The idea is to enable an analytical teasing out of different social, material, psychological, domain-specific etc. aspects that contribute in intertwinement to forming the situation's 'requirement characteristics'. At least five analytical levels at which a situation shows 'requirement characteristics' may be distinguished, and the degree of social mediation will vary between these levels. The levels are:

- The *domain-internal context level* (concerned with the domain, e.g. literary novels or set theory)
- The *activity-internal context level* (concerned with the activity itself, e.g. writing a wiki entry, reading a book, solving a math problem, buying groceries)
- The *activity-framing context level* (the setting in which the activity takes place, e.g. a classroom or a supermarket)

- The *activity-enabling structure level* (the general societal structuring of practices of a certain kind, e.g. the structuring of learning practices within schools)
- The *cultural practices level* (the very general level of cultural tools and ways of behaving which are prevalent in a culture across its practices; e.g. the manufacturing of stone into tools in the Stone Age; the practice of today of communicating extensively through information technology such as emails or websites).

The more general levels are culturally dependent and therefore socially mediated to a high degree. For the lower levels, the degree of social dependency varies across domains and settings. Thus, for example, the activity of mountaineering is much less socially constituted at the domain-internal and activity-internal context levels than is interior decorating. This is perhaps most easily seen by considering that what constitutes 'absolute failure' of meeting the requirement characteristics in the first case (falling to one's death) is not socially negotiable, but depends entirely on the lack of meeting certain physical requirement characteristics at the domain-internal level (e.g. demands concerning friction and balance) and at the activity-internal context level (the movement of one's body along the cliff side). In contrast, what constitutes 'absolute failure' in the case of interior decoration *is* socially negotiable, also at the domain-internal and activity-internal context levels, though not fully socially constituted, since there will also be requirement characteristics concerning material aspects and physical movement.

Despite this general difference between the domains of mountaineering and interior decoration, the former might in specific situations, such as a mountaineering contest, have quite a high degree of socially constituted requirement characteristics. The activity-framing context level may lead to socially constituted requirement characteristics at the lower levels as well, e.g. by setting rules for which equipment may be used and precisely how the feet may be placed. This situation might be contrasted with one where the activity-framing context is not one of mountaineering at all, but instead that of a person traversing a mountain because it is the quickest way to fetch a doctor on the other side. In this situation, 'anything goes' as concerns outfit, equipment, and 'styles of walking and climbing' – the only thing that matters is coming safely and quickly to the other side.

Extending this perspective to the field of learning, 'social aspects' play different roles in learning, depending on which analytical level, domain, and situation one is focusing on. Intuitively, physical reality constrains the building of a bridge more than it constrains reading, though of course the latter is (amongst others) dependent on light conditions and physical functioning of the perceptual system and of the brain (but so is building a bridge). Learning to undertake these two forms of activity in a competent way thus seemingly involves social mediation to different degrees.

Only few empirical examples have been analyzed with this framework. I have utilized the first three levels in an assessment of the validity of the claims put forward by the *Programme for International Student Assessment* (PISA) that they test students' 'knowledge and skills for life' (Dohn, 2007). I analyze test items to illustrate how requirement characteristics at the activity-framing context level (participating in an international test of individuals' skills and knowledge) influence requirement characteristics at the activity-internal context level (e.g. length restrictions and argumentation strategies acceptable in an essay-like answer) and at the domain-internal context level (e.g. characterizations of form and genre in the provided text). To give one example, a test item concerning two letters about graffiti includes the question "Regardless of which letter you agree with, in your opinion, which do you think is the better letter? Explain your answer by referring to *the way* one or both letters are written" (OECD, 2002, p. 45) According to PISA's scoring rules, the following two answers are adequate: A) "I like Helga's letter. She was quite dominant getting her opinion out." B) I think Helga's letter was the better one of the two. I thought Sophia's was a bit biased." But C) "Helga had a better argument" is deemed not to supply sufficient explanation and thus to be inadequate. Now, in most other situations than a PISA test (i.e. in most other activity-framing contexts), A), B) and C) would count as on a par at the domain-internal level. If for instance a quick impression of viewpoints in a class was needed to form discussion groups, all three responses would be adequate. If, on the other hand, the activity-setting context was one of writing an essay, A) and B) would be just as much in need of explanation as is C, i.e. they would all be inadequate. But the requirement characteristics of the special setting of a two-hour survey to assess skills put narrow limits on the length of writing

appropriate per test item, whilst still demanding *some* argumentation, and therefore in *this* specific situation the three answers are evaluated differently. The upshot of my analysis with the framework thus is that social mediation at higher levels frames and delimits requirement characteristics at lower levels without on the other hand fully determining or constituting them.

I have also used the framework to analyze the competence demands actually, implicitly, placed on students when web 2.0-mediated learning activities building on bottom-up, many-to-many interaction and user-generation of content are utilized within educational practices (Dohn 2009b, 2009c). Similarly, the framework would serve to explain results of research within situated learning and activity theory. For example, a study by Säljö and Wyndhamn shows students to have difficulties in solving an everyday problem of finding the right postage for a letter when this activity takes place in the formal school setting (Säljö & Wyndhamn 1993). My framework would help explain how requirement characteristics of the activity-setting context of school for the students (wrongly) frame applications of math (domain-internal context level) and postage considerations (activity-internal context level). Similar analyses could be made of Schoultz, Säljö, and Wyndhamn's study of students' understanding of TIMMS test items (Schoultz, Säljö, & Wyndhamn 2001), of Lave's example of math in the supermarket (Lave 1988) and of de la Rocha's example of math in the kitchen (de la Rocha 1985).

Finally, the empirical research of e.g. Yackel & Cobb and Greeno & collaborators shows the significance of the content domain in itself in establishing what counts as adequate reasoning within the domain (Greeno & Gresalfi 2008; Greeno & van de Sande 2007; Gresalfi 2009; Yackel & Cobb 1996). That is, their research shows the necessity of distinguishing requirement characteristics at the domain-internal context level and of attributing them weight in analysis of classroom interactions in addition to socially constituted requirement characteristics at higher levels. Arguably – though they do not have this focus themselves – their concrete examples also show that what constitutes the requirement characteristics at the domain-internal level is an interplay of socially mediated and non-socially mediated domain features which vary in degree of social mediation between domains.

Claim 4:
Knowledge has tacit, actionable, context-dependent, embodied aspects

The corroboration of Claim 4 combines *analytical philosophical arguments, phenomenological analysis,* and *empirical results* from *distributed cognition* and *situated learning theory*.

The analytical philosophical argument takes its outset in the rule-following considerations of Wittgenstein and Ryle (Ryle 1949; Wittgenstein 1984), especially in their Scandinavian reception (Johannessen & Rolf 1989; Josefson 1998; Molander 1992, 1996; Rolf 1991) which interprets them as focusing on the tacit understanding of practice which makes rule-following possible. Thus, according to this reception, to follow a rule is not a question of interpretation, at least not if 'interpretation' is understood as involving any kind of articulation, reflection or consideration. Instead, it involves a tacit, practical, embodied understanding present in the action itself – a 'feel for' the unique situation and for what amounts to 'following the rule' here. This explains the need for examples in learning how to follow a rule. It also explains why it is necessary for learners to work through examples themselves rather than just have them explained by a teacher: Only through doing applications of the rule – examples – can one acquire the practical 'feel for' the situation. This practical 'feel for' is the 'gut feeling' whereby we (in practice, not intellectually) evaluate the rule and sometimes find that an exception to it has to be made. I should stress that this practical feel for the situation is part of what I above with Heidegger described as our pre-reflective, non-articulated understanding of the world. My viewpoint here is in line with the Heidegger-inspired phenomenological descriptions of Merleau-Ponty and Dreyfus (Dreyfus 1979, 1991, 2002; Merleau-Ponty 1962), but part company with those followers of Heidegger who would claim that being in the world involves *interpretation* of it, rather than 'non-reflective understanding-in-acting'. Interpretation, on the other hand, to my mind, *is* involved, in our coming into being as *persons*, as I suggested above with Hegel.

Phenomenological analysis, drawing in particular on Merleau-Ponty (Merleau-Ponty 1962) and his reception by Dreyfus and Dreyfus (Dreyfus 1979, 2002; Dreyfus & Dreyfus 1986), enables a more positive characterization to be given of the tacit, practical, embodied understanding postulated by the analytical philosophical argumentation.

This characterization determines practical understanding as grounded in immediate (intuitive) recognition of the overall gestalt of the situation and "holistic pairing of new situations with associated responses produced by successful experiences in similar situations" (Dreyfus & Dreyfus 1986, p. 35). Gestalt recognition and response pairing are flexible forms of identification, i.e. they accommodate situational variations instead of grouping situations into rigid categories.

Empirical results from especially the fields of distributed cognition (Hutchins 1993, 1995; Hutchins & Klausen 1996) and situated learning (Lave 1988; Lave & Wenger 1991; Nielsen 1999; Nielsen & Kvale 1999; Wenger 1998) serve to flesh out knowledge and competence as relationships-in-action between the agent and the environment, including tools and people present. Thus, the detailed studies provided by these researchers of (among others) sailors maneuvering a ship to port, pilots navigating a plane in a plane simulator, people grocery shopping in the supermarket, claims processors processing insurance claims, all clearly illustrate how knowledge is always locally realized and negotiated with aspects of situational specificity which are essential to its realization and cannot be abstracted away.

As I stated in the beginning of the article, there is amble evidence that mental and linguistic representations play a role in learning. However, the combination of Wittgensteinian and phenomenological arguments throws serious doubt on the claim that knowledge is *constituted* by mental or linguistic representation. Instead, these approaches strongly suggest that the primary ontology of knowledge is situated realization in the action it enables. This suggestion is corroborated by the cited empirical research. But if this is so, representation will necessarily involve fundamental ontological reconstruction, i.e. change in ontology. Conversely, making use of mental models or propositions in action requires ontological transformation, too. Thinking and language quite obviously play large roles in human practices, but in general these are roles they have as part of *exercising* competence; they do not *constitute* competence. Thoughts and linguistic statements are important for expressing, articulating or redirecting understanding, but they are grounded in the tacit situational 'feel for' the situation; not the other way around.

In sum,[2] and taken together, these different arguments integrate to demonstrate the reasonableness of Claim 4: Knowledge fundamentally has tacit, actionable embodied aspects and acquires essential context-

dependent content and form from its situated realization. It is grounded in immediate recognition of and response pairing to the situation's gestalt. Thinking and communicating are phenomena of knowledge-in-doing and as such take their meaning in part from the situation in which they arise.

Concluding remarks

In this article I have utilized a form of integrative and dialogically minded 'philosophizing with' to argue for 4 basic claims concerning *the subjects of learning, their relationship to the world (including other subjects)*, and *the ontology of the result of learning*. These claims are:

1. We need a concept of learning focused on the individual
2. A focus on the individual does not imply neglecting sociality. The individual is a "person-in-the world", and the world has social aspects
3. These 'social aspects' play different roles in learning (ranging from constitutive ones to contingent mediatory ones) at different analytical levels, in different content domains, and in different situations
4. Knowledge fundamentally has tacit, actionable embodied aspects and acquires essential context-dependent content and form from its situated realization.

These claims must be taken into account in developing a theory's concept of learning. This means, at the very least, that a concept of learning should be consistent with them. Furthermore, it will count as a point in favor of a proposed concept of learning if it not only complies with the four claims in the negative sense of not contradicting them, but actually builds positively on them. A strong case will be made for a concept of learning if it not only builds positively on the four claims, but even supplies a platform on which they can be further nuanced and developed. This is so, because such a platform will itself supply new possibilities of the kind of 'philosophizing with' which I have been contending-through-use in this article: It will allow the development of a set of arguments integrating philosophy with other theoretical and empirical disciplines to the end of helping us better understand what learning is.

Notes

1 This last comment corresponds to the well-known criticism of mind-brain-identity theories that it is not clear precisely what it means to postulate e.g. that a thought is identical to neuronal firing.

2 More elaborate versions of the argument may be found in (Dohn 2005, 2011a, 2013, 2014).

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