

Knowing how and knowing that: a tale of two ontologies.

John Quay

Abstract

Outdoor education has traditionally dealt with sources of knowledge that originate within the experience itself. This situated source exists in tension with more traditional modes of institutionalized learning which emphasize knowledge as an objectified curriculum content. Two types of knowing emerge: one reflected in a more practical knowing how, the other in a more theoretical knowing that. These two types of knowing also reflect different understandings of teaching. Central in this debate is the grounding ontology. A situated knowing can be grounded within a Heideggerian ontology. A dualistic knowing (subject-object) is grounded in a Cartesian ontology. This paper explores the tensions embedded within these two different ways of knowing and their underpinning ontologies.

Themes and doubles

It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to Heaven, we were all going direct the other way

(Dickens, 1859/2000, p. 5).

Thus begins Charles Dickens' novel *A Tale of Two Cities*, highlighting the dread allied with hope that existed during this most tumultuous of times. Dickens' novel was set between 1775 and 1793 when the two cities, London and Paris, were at the heart of revolution around the globe: the Industrial Revolution, the French Revolution, the American Revolution and the claiming of the Great South Land, Australia, by England; all of these events were occurring during this time. Revolution is the backdrop for much of *A Tale of Two Cities* and functions as the context within which the prominent theme of the novel plays itself out: the possibility of resurrection and transformation. Revolutions, as Kuhn points out in relation to science, "are those non-cumulative developmental episodes in which an older paradigm is replaced in whole or part by an incompatible new one" (Kuhn, 1996, p. 92). Transformation occurs as paradigms shift.

I decided to make use of an adaptation of Dickens' title for two main reasons. Firstly, *A Tale of Two Cities* is centred on this process of transformation and change, a process intimately entwined with knowing and learning. Secondly, in approaching this theme of resurrection and transformation Dickens makes conscious use of *doubles* as a motif. The two cities are doubled as opposites: London as orderly and business-like, private and serene, Paris as ruled by a mob mentality, with the public gaze foremost in people's minds. The two main female characters, Lucie Manette and Madame Defarge, are very different people: Lucie Manette is a loving and nurturing person while Madame Defarge is full of hate and anger, and thirsts for revenge.

While creating opposites may seem simple enough, Dickens uses this technique of doubling to move beyond a purely binary opposition and to highlight the specific and complex

interplay between the two entities involved in the double. Different ways of living in London and Paris are not left as separate and unchanging but inform and influence each other via numerous visits and exchanges across the Channel. The two main male characters, Charles Darnay and Sydney Carton, both in love with Lucie Manette, are initially presented as competing suitors thus highlighting their differences. From this beginning, however, a complex relationship emerges between the two men, revolving around the love that they share for Lucie, that eventually sees Carton sacrifice his own life to save Darnay's. So while things may appear as opposites on the surface, deeper analysis reveals that the two entities comprising the double are involved in a relation that is a necessary part of the evolving identity of each.

Knowing how and knowing that

My aim in this paper, my theme if you like, is to highlight the structure of experiential learning. We informally define experiential learning as “learning by doing combined with reflection” (Priest & Gass, 1997, p. 136). Dewey, whose educational philosophy is often placed at the heart of theories of experiential learning, situates reflective thought at one end of a continuum of understanding of thinking, the other end being “everything that, as we say, is ‘in our heads’ or that ‘goes through our minds’.” (Dewey, 1910/1997, p. 2). Dewey defines reflective thought as “*active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it, and the further conclusions to which it tends*” (Dewey, 1910/1997, p. 6). Reflection, for Dewey, is thus a focused form of thinking that attempts to take into consideration all aspects of a situation, going beyond what is immediately present there: the supporting factors of belief as well as the conclusions or consequences. Experiential learning combines this reflective way of thinking with doing. Importantly, Dewey views reflective thinking as being motivated through problems:

Thinking begins in what may fairly enough be called a *forked-road* situation, a situation which is ambiguous, which presents a dilemma, which proposes alternatives. As long as our activity glides smoothly along from one thing to another, or as long as we permit our imagination to entertain fancies at pleasure, there is no call for reflection.

(Dewey, 1910/1997, p. 11)

As problems arise we engage in thinking. This is evident in Dewey's account of learning:

[F]irst that the pupil have a genuine situation of experience – that there be a continuous activity in which he is interested for its own sake; secondly, that a genuine problem develop within this situation as a stimulus to thought; third, that he possess the information and make the observations needed to deal with it; fourth, that suggested solutions occur to him which he shall be responsible for developing in an orderly way; fifth, that he have opportunity and occasion to test his ideas by application, to make their meaning clear and to discover for himself their validity.

(Dewey, 1916/1944, p. 163)

Reflective thinking is employed in an effort to resolve a problem. The solution arrived at is then applied. Problem solving is thus a central aspect of experiential learning and the point of relation between doing and thinking. Dewey's conception of a problem is however, very broad, being “whatever – no matter how slight or commonplace in character – perplexes and

challenges the mind so that it makes belief at all uncertain” (Dewey, 1910/1997, p. 9). This conception of a problem leaves open a range of ways of understanding the relation between doing and reflection.

Doing and reflection, for my intents and purposes, function as a Dickens’ double. The relation between them, in some way motivated by problem solving according to Dewey, is the immediate focus. In order to gain further access to this relation I shall bring to the fore a number of similar Dickens’ doubles, beginning with two ways of knowing that Ryle (1949) draws attention to: knowing *how* and knowing *that*. Knowing *how* to do something is a practical, everyday way of knowing. Walking, talking, reading, eating, playing chess, using a computer; knowing how to perform tasks, actual doing, is described as a knowing *how*. Knowing *that* something is the case is a more theoretical, even scientific way of knowing. The world is round, my name is John, chickens lay eggs, it is a windy day; knowledge of this or that truth is described as a knowing *that*. Experiential learning functions seemingly at the interface between knowing *how* and knowing *that*, holding them in a relation that is described as combined, but the intimate nature of which is relatively undisclosed. Is one more important than the other?

Two ontologies provide two divergent foundations for this relation. The first is that of Descartes who constructed an ontology which makes a sharp distinction between a mental and a physical world. Knowing *how* and knowing *that* are assimilated with Descartes’ distinction between body and mind, another Dickens’ double. The second of these systems is that of Heidegger whose ontology distinguishes between two different ways of looking at things: a scientific ‘staring’ that looks *at* the world, allied with knowing *that*, or a more everyday ‘circumspection’ that looks *from* a world, aligned with knowing *how*. The term world here has two different meanings associated with knowing *that* and knowing *how*. Heidegger thus creates two further Dickens’ doubles: ways of looking and different conceptions of world, that will shed more light on this relation.

The central difference between these two ontologies is the manoeuvring of one of knowing *how* (emergent from doing) or knowing *that* (emergent from reflective thinking) to being the foundational way of knowing. Descartes’ ontology underpins knowing *that* as the foundational way of knowing, providing the knowledge which knowing *how* applies in everyday doing. In Heidegger’s ontology, on the other hand, knowing *how* is the foundation for knowing *that*. Doing provides the basic structures which support the meaning of any particular knowing *that*.

Knowing that as fundamental; knowing how as derivative

In his investigations of the relation between knowing *how* and knowing *that* Ryle (1949, p. 11) implicates the ontology of Descartes. Descartes’ ontology provides a particular foundation for this relation through the separation, the dualism, of mind and body. Descartes claims that “knowledge of the truth about such things [things located outside us] seems to belong to the mind alone, not to the combination of mind and body” (Descartes, 1640/1996, p. 57). Mind and body are, in Descartes’ ontology, separate substances, each of which has “one principal property which constitutes its nature and essence” (Descartes 1644/1985, p. 210). The essence of mind is thought, while the essence of body is its extension in space: length, breadth and depth (Descartes 1644/1985, p. 210).

Descartes arrived at this separation by beginning with the belief that truth is a matter of conceptual clarity, “that the things which we conceive very clearly and distinctly are all true - remembering, however, that there is some difficulty in ascertaining which are those that we distinctly conceived” (Descartes 1637/1996, p. 22). Conceiving something distinctly is thus the major determinant of truth, and Descartes believed that mathematics provides the best way for doing just this: “For whether I am awake or asleep, two and three added together are five, and a square has no more than four sides. It seems impossible that such transparent truths should incur any suspicion of being false” (Descartes, 1640/1996, p. 14). Descartes applied this interpretation of truth to all of his beliefs. Accepting nothing at face value, he began a search for clarity and distinction in everything that he knew:

I will suppose then that everything I see is spurious. I will believe that my memory tells me lies, and that none of the things that it reports ever happened. I have no senses. Body, shape, extension, movement and place are chimeras. So what remains true? Perhaps just the one fact that nothing is certain.

(Descartes, 1640/1996, p. 16).

From this position Descartes discovered that one thing remained without doubt: while he was thinking he could be sure that he existed. Descartes expressed this through his famous phrase “*I think, therefore I am*” (Descartes 1637/1996, p. 21), conceiving of himself as a purely thinking thing. This understanding required a division, an abyss, to be created between mind and body:

And then, examining attentively that which I was, I saw that I could conceive that I had no body, and that there was no world or place where I might be; but yet that I could not for all that conceive that I was not . . . From that I knew that I was a substance the whole essence or nature of which is to think, and that for existence there is no need of any place, nor does it depend on any material thing; so that this ‘me’, that is to say, the soul by which I am what I am, is entirely distinct from my body, and is even more easy to know than the latter; and even if body were not, the soul would not cease to be what it is.

(Descartes 1637/1996, p. 21).

Descartes’ method of doubting and then applying mathematics as the only foundation for certainty in truth enabled him to construct an ontology that encompassed a mind separate from body and world. Descartes viewed the universe as a machine, a mechanical thing, as Gaukroger attests:

Descartes argues that the only kind of physical world whose existence I can intelligibly inquire about is one I can conceive clearly and distinctly, and that the only way in which we can satisfy this criterion is by thinking about the world in quantitative terms - that is in terms of inert matter whose only property is spatial extension – and characterising it in a purely geometrical way. We thereby arrive at a mechanistic account of the universe as the only possible option.

(Gaukroger, 2002, p. 70)

Knowing for Descartes is a function of mind, and knowing *that*, construed as a theoretical type of knowing, represents this. Knowing *how* must therefore be premised on knowing *that*. It is subordinate to knowing *that*. Thinking is the font of all knowledge and doing is a result of particular ways of thinking. In attempting to characterize this conception of knowing as

mind dependent, Ryle coined the phrase “ghost in the machine” (Ryle, 1949, p. 32) to emphasise the separation. The mind acts as the non-physical ghost, controlling the machine, the physical body. The ghost and machine metaphors exemplify the non-mechanical, spiritual existence of the mind which *thinks*, and the mechanical existence of the body which *does*.

Conceiving the relationship between knowing *how* and knowing *that* as a dependent one is identified by Ryle (1949, p. 29) as the “intellectualist legend,”:

Champions of this legend are apt to try to reassimilate knowing *how* to knowing *that* by arguing that intelligent performance involves the observance of rules, or the application of criteria ... To do something thinking what one is doing is, according to this legend, always to do two things; namely to consider certain appropriate propositions or prescriptions, and to put into practice what these propositions or prescriptions enjoin. It is to do a bit of theory and then to do a bit of practice.

(Ryle, 1949, p. 29)

Ryle continues, saying that “the absurd assumption made by the intellectualist legend is this, that a performance of any sort inherits all its title to intelligence from some anterior internal operation of planning what to do” (Ryle, 1949, p. 31). The issue here, according to Ryle, is the creation of a two step process out of one, single process. The central claim of Ryle’s thesis is that knowing *how* is not dependent on an antecedent knowing *that* rather they are one and the same thing. “When I do something intelligently ... I am doing *one thing* and not two” (Ryle, 1949, p. 32, italics added).

Ryle’s conception of knowing *how* construes it as somehow merged with knowing *that*. “Overt intelligent performances are not clues to the workings of minds; they are those workings” (Ryle, 1949, p. 58). In other words knowing *how* is not founded in a knowing *that*, rather it is somehow the same thing. Ryle disappointingly offers no real alternative to the intellectualist legend (Polanyi, 1969, p. 222). For another possibility I turn to Heidegger, whose critique of the ontology of Descartes was part of the justification for an ontology of a very different kind.

Knowing how as fundamental; knowing that as derivative

Descartes method reveals a particular way of looking *at* the world. This way of looking is a specialised *staring* that focuses on things, isolating them in an effort to achieve clarity and distinctness, as well as stability in knowing. Philosophically, looking is not simply a visual acuity, it is rather an example of the metaphorical use of a range of terms connected with seeing that aim to encompass how we are attending to something.

Heidegger claims that this “looking *at* is always a way of assuming a definite direction toward something, a glimpse of what is objectively present” (Heidegger, 1927/1996, p. 57). Looking *at* the world reveals things as objects that are present, here, before us, now. Looking *at* does not involve our use of those things in an everyday sense, being rather “the refusal of every manipulation and use” (Heidegger, 1927/1996, p. 58). Objects made present before us by way of a staring looking *at* are not connected with our everyday doing but are isolated, disconnected entities, “for in our natural comportment towards things we never think a *single* thing, and whenever we seize upon it expressly for itself we are taking it *out* of a contexture to which it belongs in its real content” (Heidegger, 1975/1982, p. 162).

There must therefore be another way of looking that encompasses how we see things in our everyday doing, in context. Heidegger, approaching philosophy through the window of lived experience, utilised the method of phenomenology in order to gain access to this experience, contemplating not things in isolation but rather things as embedded within the acts of living:

Phenomenology is thus a distinctive *how of research*. Objects are taken just as they show themselves in themselves, i.e., just as they are encountered by a *definite manner of looking toward them and seeing them*. This seeing arises out of and on the basis of a being-oriented regarding the objects, an already-being familiar with these beings.

(Heidegger, 1988/1999, p. 58-59)

Phenomenology, as a method, involves a certain way of looking at the world that aims to gain access to our more practical everyday understanding. Heidegger believed that the everyday is how we are “*initially and for the most part*” (Heidegger, 1927/1996, p. 15) and is thus a more fundamental way of being for us. And in our everyday doing Heidegger discovered a more practical way of seeing:

‘Practical’ behavior is not ‘atheoretical’ in the sense of a lack of seeing, and the difference between it and theoretical behavior lies not only in the fact that on one hand we observe and on the other we *act*, and that action must apply theoretical cognition if it is not to remain blind. Rather, observation is a kind of taking care just as primordially as action has *its own* kind of seeing.

(Heidegger, 1927/1996, p. 65)

In other words, seeing is not only a theoretical event; practice, too, has its way of seeing. Heidegger describes this way of seeing as “circumspection” (Heidegger, 1927/1996, p. 65) which he portrays as “completely unobtrusive and unthought” (Heidegger, 1975/1982, p. 163). In other words “it is not thematically apprehended for deliberate thinking about things; instead, in circumspection, we find our bearings in regard to them” (Heidegger, 1975/1982, p. 163). Circumspection is not a staring but a looking connected with doing, with using things, that orients us. Circumspection uncovers things, through our doing, as handy. Things when being used have a *handiness*, as Heidegger explains employing the example of a hammer:

The less we just stare at the thing called hammer, the more actively we use it, the more original our relation to it becomes and the more undisguisedly it is encountered as what it is, as a useful thing. The act of hammering itself discovers the specific ‘handiness’ of the hammer ... When we just look at things ‘theoretically,’ we lack an understanding of handiness. But association which makes use of things is not blind, it has its own way of seeing which guides our operations and gives them their specific thingly quality.

(Heidegger, 1927/1996, p. 65)

Circumspection does not see individual things but rather sees things by way of their context. Heidegger makes use of the lecture theatre as a further example:

When we enter here through the door, we do not apprehend the seats as such, and the same holds for the doorknob. Nevertheless, they are there in this peculiar way: we go by them circumspectly, avoid them circumspectly, stumble against them, and the like.

Stairs, corridors, windows, chair and bench, blackboard, and much more are not given thematically.

(Heidegger, 1975/1982, p. 163)

This way of looking, through our doing, reveals things as being *for* something. Things have a certain function and meaning connected with what we are involved in doing. This context is a “functionality whole” (Heidegger, 1975/182, p. 164) that connects things together in a web of reference forming an enviroing world, a surrounding world:

The functionality whole, narrower or broader – room, house, neighborhood, town, city – is the prius, within which specific beings, as beings of this or that character, are as they are and exhibit themselves correspondingly ... A specific functionality whole is *pre-understood*.

(Heidegger, 1975/1982, p. 164)

We are, in fact, “always already in an *enviroing world*” (Heidegger, 1975/1982, p. 164). Being in a world is not something that we decide to do; we are *always already* there. The functionality whole, the world that we are always already in, is structured by the purposes underpinning our actions. Heidegger identifies our purposes as themselves structured within a significance whole that begins at its most basic with what he calls a ‘for-the-sake-of-which’. We do things for the sake of something, some purpose, the ultimate purpose being for-the-sake-of our own well-being. This ultimate purpose is most often in the background and is not something we bring to the fore in every instance as a justification for what we are doing. The for-the-sake-of-which, as the basis, is in practice enacted through more specific purposes, what Heidegger refers to as the in-order-to and the what-for. These purposes are connected in a significance whole that structures the functionality whole. The “for-the-sake-of-which signifies an in-order-to, the in-order-to signifies a what-for, the what-for signifies a what-in of letting something be relevant, and the latter a what-with of relevance. These relations are interlocked among themselves as a primordial totality” (Heidegger, 1927/1997, p. 81). The what-in of letting something be relevant is the functionality whole, and the what-with describes the relations, the references, between things in this functionality whole. These are dependent, however, on a what-for, the significance for which is provided by an in-order-to, the significance for which is then provided by a for-the-sake-of.

The world can thus be understood in two ways, another Dickens’ double. The most common way that we conceive of the world is as the things around us, or the things that exist. We think primarily here of things, of beings. Heidegger wants us to focus on another way of conceiving the world. World for Heidegger, in a philosophical sense, is the horizon or the frame through which we see things, the functionality whole structured by our purposes, which provides the basis on which things have a certain meaning for us.

Nature – even if we take it in the sense of the whole cosmos as that which we also call, in ordinary discourse, the universe, the whole world – all these entities taken together, animals, plants, and humans too, are not the world, viewed philosophically ... World is not something subsequent that we calculate as a result from the sum of all beings. The world comes not afterward but beforehand, in the strict sense of the word ... The world as already unveiled in advance is such that we do not in fact specifically occupy ourselves with it, or apprehend it, but instead it is so self-evident, so much a matter of course, that we are completely oblivious of it.

(Heidegger, 1975/1982, p. 165)

Our purposes structure what we do, they are the meaning behind what we are doing, and what we are doing provides the basis on which things around us are what they are. This is our world. We interpret what things are from the perspective of what we are doing. They are part of a functionality whole, such as a room, house, neighborhood, town, or city; all different horizons, different frames of reference, providing us with different views of things.

Knowing, for Heidegger, is a process of interpreting what things around us are, by way of our being in a world. By preserving this knowledge we subtly change our understanding of the functionality whole that we are in, thus providing us with a new horizon, a new world. Knowing is “nothing but a mode of being-in-the-world, a way which is always possible only on the basis of a non-cognitive comportment” (Heidegger, 1979/1985, p. 164). Our knowing, for Heidegger, is embedded in our doing.

Heidegger conceives knowing as a process occurring over time, a process which we usually acknowledge specifically as learning:

The first phase in the temporalization of knowing is ... the specific comportment of taking up a direction toward something; but this already on the basis of being-in-the-world. The second phase is *dwelling-with* ... The directing-itself-toward is not put out of play at the phase of dwelling with an entity but persists throughout, anticipating all other modes of comportment and determining them. Here directing-itself-toward means *taking a view*, conceiving as, the ‘from which’ of viewing. On the basis of the second phase, that of dwelling with an already given entity, now comes [third] the actual *apprehending*, *laying apart*, *laying out* or *interpreting* in a specific sense. Such a perceiving as a having apprehended is itself cultivated, fourth, to the level of preservation of what is apprehended. In its entirety, the process of knowledge would then look like this: *the knowing directing itself toward as dwelling with and apprehending* tends toward the *apprehended* so as to *preserve* it, so that knowing in having apprehended, that is, in acquired knowledge, has the known even when it does not actually stand in relation to it; it *preserves* knowledge as a possession ... Fifth, the preserving retention of what is known is itself nothing but a new mode of in-being, that is, of the relationship of being to the entity which is known; the in-being characterized under the first point is now modified by knowledge.

(Heidegger, 1979/1985, p. 163)

Heidegger grounds knowing in a world *from which* things are viewed. Descartes’ truth, his knowing *that*, his understanding of mind as separate from physical body and physical world, can therefore be understood as grounded in a world that prioritises the importance of mathematics. He looked from the world of mathematics. This is a legitimate perspective from which to look, but it is not the *everyday* perspective understood by Heidegger as most foundational to human being. The dualism between mind and body can thus be understood as a product of Descartes’ construing the mathematical world as the everyday world. In the everyday world, as a world of doing, we do not perceive a separation between mind and body. Heidegger does not even mention it (Zimmerman, 1990, pp. 244-247).

For Heidegger, knowing is not premised on a looking *at*, it is not centred on the ability to see clearly and distinctly so important to Descartes; truth is not connected with our clarity of vision, meant as the bridge between a separated mind and world. Human being understood as being in a world reveals knowing as acknowledging the world *from which* we see. Looking is

no longer primarily a looking *at* but also a looking *from*. Truth is therefore to understand something as it is revealed in this looking *from*, the world in which one currently stands:

But to know means: to be able to stand in the truth. Truth is the manifestness of the essent [the being, the thing]. To know is accordingly the ability to stand in the manifestness of the essent, to endure it. Merely to have information, however abundant, is not to know. Even if curricula and examination requirements concentrate this information into what is of the greatest practical importance, it still does not amount to knowledge. Even if this information, pruned down to the most indispensable needs, is ‘close to life,’ its possession is not knowledge. The man who possesses such information and has learned a few practical tricks, will still be perplexed in the presence of real reality, which is always different from what the philistine means by down-to-earth; he will always be a bungler, for to know means *to be able to learn*.

(Heidegger, 1935/1987, p. 21)

What Heidegger means here is that knowing is founded in our being in a world. In knowing we interpret the being of things around us, what they are, and this process of interpretation is founded in our purposes, our doing and the functionality whole emergent from these. These are intrinsic to knowing. Formal education has its own purposes, its own way of doing things, its own functionality whole. Here the connection to worlds beyond school is attempted via the provision of information about these worlds. However this is never enough. To be able to learn about worlds beyond school, a student must be situated in that world, not the school world.

Knowing something, the truth of something, is related to a particular world. It is situated. The doing is part of the knowing, or as Heidegger is more apt to put it: “the perceiving is no less involved than what is perceived in perceiving” (Heidegger, 1988/2002, p. 52). This is a far cry from Descartes general rule “that whatever I perceive very clearly and distinctly is true” (Descartes, 1640/1996, p. 24). Heidegger’s main critique of Descartes is the way “his interpretation and their foundations led him to *pass over* the phenomenon of world” (Heidegger, 1927/1996, p. 88). In Heidegger’s understanding of truth, revealing and concealing are interconnected. A world reveals but it also conceals. Knowing something in one world does not mean that this knowing is the same in another world. Knowing *how*, our doing, is foundational to our knowing *that*, our thinking.

Revolution

Experiential learning, the Dickens’ double of doing and reflection, can thus be understood as representative of a range of other doubles: knowing *that* and knowing *how*, mind and body, looking at and looking from, theory and practice, world as things and world as horizon of being. I began with doing and learning, moving then to Ryle’s knowing *how* and knowing *that*, and from there to highlighting the doubles emerging from the ontologies of Descartes and Heidegger. Descartes’ ontology presented thinking, knowing *that*, as the fundamental way of knowing. Ryle questioned Descartes’ foundation in mind, separating it from body, but could only suggest a merger between the two as an improvement. Heidegger’s ontology, on the other hand, supports Dewey’s account of learning and provides an even firmer ground on which to found the learning process. Heidegger grounds knowing in doing because doing gives us a world, a world which we are always already involved with, and from which we

perceive everything around us. Knowing *how*, our doing, is the foundational sense of knowing and is the basis for our knowing *that*.

Heidegger's model of learning, his temporalization of knowing, is not specifically focused on problem solving, the main connection between doing and thinking for Dewey. The third phase is the closest that he comes to thinking and reflection and Heidegger is here focused on what Dewey would perhaps perceive as a relatively minor problem, what something *is* for us. 'What is it?' is a question asked from a world. Heidegger does, however, in another discussion, focus on problems of a larger nature that actually compel us to reflect on our world itself: 'What occurs when a thing that we are using or hoping to use becomes unavailable because it is broken or missing?'. Heidegger does not directly associate this description of a problem situation with learning in an everyday sense, however Heidegger does describe the process which occurs when we are faced with this problem.

Heidegger begins by describing the thing as being 'unhandy'. While previously being an inconspicuous part of the functionality whole, this thing is now conspicuous, obtrusive and possibly obstinate. The problem initially comes to light through "a *breach* in the context of references discovered in our circumspection" (Heidegger, 1927/1996, p. 70). The problem emerges from within what we are doing. Heidegger refers to this as a "*disruption of reference*" (Heidegger, 1927/1996, p. 70). And further to this disruption of reference in the functionality whole, the world, there is a disturbance in the structure of the world, between the in-order-to and the what-for. Our purpose has come into question as well. In this instance "this circumspect noticing of the reference to the particular what-for makes the what-for visible and with it the context of the work, the whole 'workshop'" (Heidegger, 1927/1996, p. 70). In other words, the emergence of a problem motivates us to reflect on our world, in the sense of both the references between things in the functionality whole, as well as the significances structuring the whole. We question our purposes which raises issues about the ways that things around us are interconnected and refer to each other.

At an individual level, this type of reflection, intimately embedded in our doing, can result in a form of revolution, similar to that explored by Kuhn (1996) in relation to science, where "scientific revolutions are those non-cumulative developmental episodes in which an older paradigm is replaced in whole or part by an incompatible new one" (Kuhn, 1996, p. 92). Heidegger's temporalization of knowing from within a world that results in subtle adjustments to our world as we interpret the being of things around us, is a cumulative process. These problems can be managed basically within the current world and do not require our world, its structure, our purposes, to be scrutinised. Larger problems, such as when something is missing or broken, require us to reflect on our world itself. These may require a relatively large rearrangement in the structure of our world. Our in-order-to and our what-for may need to be changed if something we require for a particular task is unavailable.

Conclusion

The structure of experiential learning, doing combined with reflection, is a much more intricate arrangement than we often recognize. Doing and reflection are of themselves concepts of immense complexity that we apply every day as if they are simple and straightforward. Problem solving, Dewey's connection between doing and thinking, is also simple and yet multifaceted. Some problems require revolutionary solutions, whereas others help us to cope with the world as it is.

I am very aware that the conceptions of doing and thinking that I have employed in this paper have basically been constrained to individuals. There is much more that can be said, and has been said, about doing, thinking and problem solving that involve our relations with other people. Heidegger, for example, places much emphasis on another type of problem, that of the distance we perceive between ourselves as individuals, and others, as the social group (Heidegger, 1927/1996, p. 118). Kuhn highlights the social as well, commenting that “a paradigm governs, in the first instance, not a subject matter, but rather a group of practitioners” (Kuhn, 1996, p. 180). The distinction between the individual and the social, in terms of experiential learning, is another Dickens’ double awaiting a bit of reflective thinking.

References

- Descartes, R. (1637/1996). Discourse on the method of rightly conducting the reasons and seeking for truth in the sciences. (E. Haldane & G. Ross, Trans.). In D. Weissman (Ed.). *Discourse on the method and meditations on first philosophy*. London, UK: Yale University Press.
- Descartes, R. (1640/1996). *Meditations on first philosophy: with selections from the objections and replies*. (J. Cottingham, Ed. & Trans.). Cambridge, UK: Cambridge University Press.
- Descartes, R. (1644/1985). Principles of philosophy. In J. Cottingham, R. Stoothoff, & D. Murdoch. (Trans.). *The philosophical writings of Descartes. Vol. 1*. Cambridge, UK: Cambridge University Press.
- Dewey, J. (1910/1997). *How we think*. Mineola, NY: Dover Publications.
- Dewey, J. (1916/1944). *Democracy and education: an introduction to the philosophy of education*. New York, NY: The Free Press.
- Dickens, C. (1859/2000). *A tale of two cities*. Camberwell, AUS: Penguin Books.
- Gaukroger, S. (2002). *Descartes’ system of natural philosophy*. Cambridge, UK: Cambridge University Press.
- Heidegger, M. (1927/1997). *Being and time*. (J Stambaugh, Trans.). Albany, NY: State University of New York Press.
- Heidegger, M. (1935/1987). *An introduction to metaphysics*. (R. Manheim, Trans.). New Haven, CT: Yale University Press.
- Heidegger, M. (1975/1982). *The basic problems of phenomenology*. (Revised edn.). (A. Hofstadter, Trans.). Bloomington, IN: Indiana University Press.
- Heidegger, M. (1979/1985). *History of the concept of time: prolegomena*. (T. Kisiel, Trans.). Bloomington, IN: Indiana University Press.

Heidegger, M. (1988/1999). *Ontology: the hermeneutics of facticity*. (J. van Buren, Trans.). Bloomington, IN: Indiana University Press.

Kuhn, T. (1962/1996). *The structure of scientific revolutions*. (3rd edn.). Chicago, IL: The University of Chicago Press.

Polanyi, M. (1969). *Knowing and being*. Chicago, IL: the University of Chicago Press.

Priest, S., & Gass, M. (1997). *Effective leadership in adventure programming*. Champaign, IL: Human Kinetics.

Zimmerman, M. (1990). *Heidegger's confrontation with modernity*. Bloomington, IN: Indiana University Press.

About the author

BEd, Grad Dip Ed. Admin, PGrad Dip Ed Studies (Student Welfare), MEd

John Quay is a Lecturer in Physical Education and Outdoor Education at the University of Melbourne. He worked teaching outdoor education at the secondary school level for ten years and is currently completing his doctoral studies, focusing on an examination of the two worlds of school and school camp and the way they interact. John spends most of his spare time reading while sitting in coffee shops; a long way from the bush he admits, but the next best thing in the heart of the city.

Email: jquay@unimelb.edu.au