

***What is educationally worthwhile knowledge? Revisiting the case for powerful knowledge.***

Abstract

For all the talk of ‘the Knowledge Age’ the nature of knowledge in the context of formal education remains a neglected area. Michael Young is one of few sociologists who responds to this neglect and puts the question of knowledge squarely back into discussions of why formal education matters. In the context of ongoing disputes around the curriculum, concerned with factual knowledge and access to multiple ways of meaning making as means for individual realisation, attention to the question of knowledge is ever more urgent. Young asks “What is educationally worthwhile knowledge?” His response goes to the heart of what is distinctive about humans. Drawing on the work of Durkheim and Vygotsky, Young provides a rich account of ‘powerful knowledge’. This chapter combines his insights with developments in contemporary philosophy. It aims to respond to misconstrued readings of Young’s work which takes his emphasis on ‘powerful knowledge’ to be at odds with a concern for pedagogy and human flourishing.

In the context of formal education, the nature of knowledge is a neglected issue. Michael Young is one of few sociologists who has responded to this oversight, and put the question of knowledge back into discussions of why formal education matters. The course he has followed from the 1970s provides a compelling example of the integral nature of theory and practice, and it is a concern with the integral nature of this which underlies arguments put forward in this chapter.

Given concerns in the 1970s to establish the right of all to an education that is both meaningful and unsegregated by class or accessibility, it is little wonder that *Knowledge and Control*, by questioning established forms of knowledge constitution and production, emerged as a book of its time. While the targets of criticism were clear – unequal access and the ‘knowledge of the powerful’ – the way forward was problematic not least because the criticisms suffered the same defects as that which was being criticized. The striking experience of post-apartheid South Africa’s response to the racist curricula of white oppressors moved Young’s thinking on. It brought to light serious issues about curricula and the need to distinguish *knowledge of the powerful* from *powerful knowledge*. These issues are

not simply about which forms or types of knowledge should comprise the curriculum. They demand attention to the distinction between formal knowledge and knowledge gained through everyday activities, a distinction too often ignored in popular commentaries on what is wrong with contemporary education. This failure to give the necessary attention due to a disregard of the conceptual complexity of formal knowledge is also a consequence of a presupposed distinction between mind and world that leads to unanswerable questions of how one can be in touch with the other. By bringing the question of knowledge back in to discussions, Young demonstrates the need for a reconsideration of these issues.

Despite the rich development of his thinking about these issues, Young is often associated with the knowledge of the powerful, and this is the real target of criticism underlying demands for curricula change. This criticism, which all too often takes the shape of a contrast between old and new forms of knowledge, is well illustrated by Claxton who fails to distinguish the power of knowledge from knowledge of the powerful and caricatures the form of knowledge he opposes by ‘drawing on the monastic metaphor... [where] knowledge was seen as something that had either been handed down by unimpeachable Authority ... mined and purified, once upon a time, by men (mostly) who were much cleverer than both the students and the teacher, usually in places called universities’ (Claxton, 2008, p. 74). It is precisely this characterisation of knowledge that figures in pleas for the reform of education. However, criticism is directed at particular bodies of knowledge which occupy key positions in curricula dominance and insufficient attention is given to the structure and form of knowledge and the resulting pedagogic issues involved in epistemic access. Issues are seldom spelt out in popular works and, as a result, the conjunction of unworked out claims in combination with a superficial characterisation of knowledge divert attention from the difference between knowledge and opinion. A corollary of this is also the failure to distinguish what constitutes different forms of knowledge. Claxton attaches great importance to students viewing knowledge as provisional and changeable. He reports:

‘In one recent experiment, two Greek psychologists checked to see if fifteen-year-olds’ attitudes to “knowledge” influenced how they went about learning Newton’s Laws of Motion. Somewhat to their surprise, they found that the students who saw knowledge as a provisional, human construction, constantly open to question and change, showed a deeper and

more accurate understanding of Newton than did their peers who believed that Science was Eternal Truth'. (*Ibid.*, p. 76)

However, the interpretation of results in terms of the students' perspective on knowledge as 'a provisional, human construction' fails to attend to the detail of what students are, in fact, accessing. What successful students are accessing is meaning which is internal to a system as concepts as these derive their meaning from the role that they play in the system to which they belong. Far from Newton's laws being 'constantly open to question', it is necessary for the students to become familiar with the constraints that determine the role of concepts involved. The contrast, as Claxton makes it, between 'certain' and 'provisional' ignores the structure and form of the knowledge domain. A proper understanding of Newton's laws involves appreciating how they function within the set of axioms that define the domain in which they operate. Failure to provide 'criteria for assessment' and to direct attention to what the use of a particular concept commits one to and what those commitments entail in relation to limits on the application of the concept, deny the learner full access to knowledge. In this connection Nutbrown has shown, 'Claxton's account of knowledge opens the door not only to a form of relativism but also to subjectivism' (Nutbrown, 2016, p.20).

Of course, students' orientation to what they study is crucially important. If they have come to think of knowledge only as direct and simple representation of the world they will not develop their concepts in a way that allows them to grasp Newton's laws. However, if it is thought that their orientation should lead students to believe that all knowledge needs to be continually challenged something has gone badly wrong. Statements such as; 'That's how knowledge is ... it is always provisional and always up for reappraisal' require careful judgment – is it Newton's laws, within the context of their specification, that are provisional and should be challenged by the student? The authors of the research cited by Claxton note that 'conceptual understanding in physics is the product of a gradual, complex process that takes a lot of time to accomplish' (Stathopoulou and Vosnaidou, 2007, p. 259). Interestingly Claxton states that knowledge 'is made up by people' and while he would undoubtedly accept that what he assumes to be 'made up' is modified by 'the empirical' his position is significantly different from that which understands the structure of thought as connected to the conditions in which it emerges. These conditions are not the superficial ones where opinion goes in place of knowledge but the fine-grained context, of constraints and articulation, in which meaning is both established and developed. It is to this fine-grained context that students need access, for

without it, anything goes and there can be no substantial knowledge. The difficulty here is that the appropriate argument that students should not be treated as empty vessels to be filled becomes, in popular polemics, entwined with a call to see knowledge as provisional without specifying any of the conditions required for it to be modified. The failure to appreciate fully and to take account of the implications of the fact that knowledge relies on constraints, i.e. that the meaning of any one concept is determined by its connection with other concepts, leads to the wrong target for critique. Arguments focus on the particular form of knowledge, 'mined and purified [in] universities' rather than the structure and form of that knowledge as it is taught in schools. How concepts are constituted within a particular domain is crucial.

A line of criticism similar to that of Claxton is made by Ken Robinson who writes of the short comings of 'an intellectual model of the mind, which was essentially the enlightenment view of intelligence; ... real intelligence consists in this capacity for a certain type of deductive reasoning and a knowledge of the classics originally, what we come to think of as academic ability' (Robinson, 2008). Robinson shares with many this questionable characterisation of an enlightenment knowledge whose adoption he sees as 'trying to meet the future by doing what they did in the past'. While Young appreciates the reasons that lead to a concern with 'the knowledge of the powerful' he rejects this line of criticism. Instead, he has addressed the question which the critics of the 'knowledge of powerful' have ignored, namely what constitutes knowledge?

This reaction against traditional forms of knowledge is not particularly surprising in the context of a general anxiety about knowledge that can be found in a broader literature (Cowen, 2000; Wells, 2017). However, as we see below, it is by considering the genesis of knowledge and the social articulation of concepts, that distinctions can be drawn between impoverished and rich content regardless of the particular content proposed for the curriculum.

The idea that forms of knowledge should be challenged in principle, without regard to the specific conditions which constitute them, goes hand in hand and is as equally questionable as the belief that the constitution of these forms can be understood in terms of the particular interests. At issue here is the attempt to enliven educational processes by claiming to recognise individuals as unique beings; however to the extent that it is associated with a reductive politics of interest, this attempt is doomed to fail.

Responding to the importance attached to the grounding of knowledge in interest, Young asks ‘[H]ow do we rebut the conclusion of the mainstream tradition of the sociology of knowledge that knowledge is always an expression of circumscribed activities and interests, and that therefore it makes no sense to enquire as to whether there is objectively “better” knowledge?’ (Young and Muller, 2015, p. 6). His response draws upon resources which go beyond the contemporary debates about aims and deals with knowledge as an emergent historical and social process. Like Bernstein, he is concerned with the construction of symbolic systems and their social base. It is important to stress that the sociality of knowledge does not, contra constructivism, undermine its objectivity; on the contrary, the possibility of truth- falsity distinctions is a precondition for it. His line of argument here, which goes to the heart of what is distinctive about humans, concerns the symbols and artefacts and practices via which we build our world. Drawing on the work of Durkheim, Vygotsky and Cassirer, Young (2008) has provided a rich account of what he has termed ‘powerful knowledge’ and this chapter connects this account with the educational implications of developments in contemporary philosophy, addressing the social articulation at the heart of knowledge. In doing so it aims to respond to the misconstrued readings of Young’s work that claim his emphasis on knowledge is at odds with a concern for pedagogy and human flourishing, thereby ignoring the very purpose of his project.

It is helpful to start with what is distinctive about formal education, for this begins to open up the question of knowledge and at the same time leads to an appreciation of its power. Young draws on Vygotsky’s distinction between scientific (i.e. academic) concepts and those that emerge as generalisations in everyday experience. Scientific concepts are characterised by their systematic connections with others belonging to the relevant field. Since the systematic connection between concepts is a result of the development of a knowledge field, which in its turn expresses new insights, this is no accident. The form and structure of scientific concepts permit a degree of voluntary control not available with everyday concepts. Scientific concepts have a systematic relation to one another and it is this, rather than simple reference to the world, that is crucial to the constitution of their meaning. Concepts can only acquire their meaning as elements in a system of concepts and from this it follows that if, for one reason or another, an individual concept is modified at least some of the other concepts must also change. This systematic characteristic also provides a sound basis on which thought can develop.

Due to the nature of their abstractness, scientific concepts - for Vygotsky, academic concepts in general - are not fully accessible through everyday experience but instead can only be properly accessed through initiation into the relevant domain. The instruction that facilitates such initiation bears little relation to the instruction intimated by Claxton and Robinson, rather it involves an interaction between teacher and students that enables concepts to be situated in the relevant domain in order to be realised as meaningful. It is through this interaction that teachers actualise the student's capacity to make appropriate connection. This interaction, when properly effected, enables concepts to be calibrated and made meaningful within their particular domains of study.

The fact that scientific concepts are systematically connected is not accidental; connections are the result of a long history of human activity. Concepts, in this sense of activity in thought, are not abstract at all, in the conventional usage of the term; on the contrary, they are deeply entrenched, as moments in the contexts from which they emerge. Vygotsky puts it powerfully when he writes: 'In contrast to contemplation, to direct knowledge of an object, a concept is filled with definitions of the object; it is the result of rational processing of our existence and it is mediated knowledge of the object. To think of some object with the help of a concept means to include the given object in a complex system of mediating connection and relations disclosed in determinations of the concept' (Vygotsky, 1998, p. 53). The contrast between this approach and a version of abstraction as merely a matter of generalisation is striking, and Vygotsky remarks that if we think that 'the process of generalising is a direct abstraction of traits, then we will inevitably come to the conclusion that thinking abstractly is removed from reality' (Vygotsky, 1998, p. 53). However, it is widely believed that abstract concepts by virtue of being abstract are removed from reality, and this lends weight to the idea that a form of knowledge that involves systematic relations between concepts can be replaced by a less rigorous one on the grounds that it is more in touch with the reality of students' lives. Yet it is precisely the particular character of what Vygotsky terms scientific concepts that requires them to be taught in a formal context rather than to be learnt through everyday activity. Although scientific concepts have been developed over centuries of accumulated activity, once developed they can be communicated effectively and understood formally in comparatively short periods of time. When we turn to consider how scientific concepts *function* in particular fields of knowledge we see a different picture. Instead of a 'direct abstraction of traits' we see that concepts are formed and function according to the

particular relations involved in the ‘determinations of ...concept [s]’. Contrary to the idea that concepts have a direct representational connection to what they represent we see that their power to represent arises in the connections they have with each other i.e. that they function within a system of concepts.

Lenny Moss (2003), in his excavation of the history of the most basic biological concepts, demonstrates this characteristic of concepts when he shows that there is no one clear concept of a gene; rather the gene concept undergoes transformation as it is deployed in research. He argues that ‘the term ‘gene’ figures in two distinct explanatory games in molecular biology. Each of these two sets of inferences motivated by the gene concept is legitimate in its appropriate context, but conflating them leads to fallacious inferences and an inappropriate version of genetic determinism’ (Brigandt, 2010). Lack of attention to these differences and what determines them leads not only to a misunderstanding of what genes are but also to what constitutes knowledge and therefore what an understanding of genetics requires. Excavating the history of a concept brings out its indissoluble entanglement with the systematic connections that constitute it. When the two versions of a concept (one ‘the heir to preformationism and the other the heir to genesis’) are conflated their productive power is lost. The meaning of the concept ‘gene’ is constituted by the particular system of connections of which it is part and without initiation into this system the student will only learn by rote and fail to gain mastery of the concepts involved. However, without the respective ‘system’ students will fail to be initiated and to develop the responsiveness to the particular constraints that establish the meaning of ‘gene’ in the first place.

This example from the field of genetics is a contemporary illustration of the life of a concept, its application and modification. It illustrates what Vygotsky called ‘the rational processing of our existence’ and the ‘complex system of mediating connections and relations’ functioning in the ‘determination the concept’. The concept is not an abstraction applied to the world; rather it bears its genesis and development within a particular system of application, i.e. its history is inextricably involved in its application and result which in turn determines its successive shapes as both tool and idea. According to Rouse (2011), we need to understand experimental practice as integral to conceptual articulation as opposed to mere support of it. The existence of a concept as a living idea rather than a dead representation results from the normative constraints within which it is articulated, i.e. the norms that govern its correct application. When the constraints are ignored and a concept in one explanatory game is

conflated with another in a different explanatory game then problems arise and lead, according to Moss, to the unwarranted but popular idea that genes are blueprints for organisms.

Significantly, the constitution of knowledge is not a simple matter of applying individual concepts; rather, it requires a whole system of concepts in which individual ones may each function in a particular way. The limits posed by the systematic relations between concepts have consequences for the expression of concept meaning. When limits change the concept develops: 'The establishment of new experimental systems opened new possibilities for conceptual articulation.' (Rouse, 2011, p. 246). Rouse, like Moss, also refers to genetics to show how new experimental systems can lead to the development of new concepts:

'Experimental systems are novel rearrangements of the world that allow some features that are not ordinarily manifest and intelligible to show themselves clearly and evidently' (ibid.). He explains that 'the *Drosophilla* system ...allow[ed] a much more extensive inferential articulation of the concept of a gene' (ibid). While Rouse's examples are limited to the practice of science he is well aware that these advances in the understanding of the sciences have implications for philosophy of mind and for epistemology. Although his example of stabilising aspects of the world in order to constitute an experimental system refers to scientific endeavours, his argument applies more broadly and has implications for the conceptualisation of knowledge as such.

In simple terms, we may think of any body of knowledge as finite in the sense of having limits which constitute its meaning. The degree of precision involved in the constitution of meaning depends upon the system of relations in which a concept is being used and in its turn that 'system', i.e. the limits and normative constraints involved, depend on the practices in which the knowledge is applied. For instance, 'When we say a landscape is flat we refer to a different margin of precision than when we talk about the floor or a monitor screen' (Stekeler-Weithofer, 2011, p. 93). Norm governed limits are not automatically explicit; rather, we become responsive to them by participating in particular practices. And it is by being responsive to them that we have the possibility of both acquiring and changing meaning. The possibility of changing meaning arises once the systematic constraints on meaning are made visible. It is not a matter of wilful attribution: it is only within the constraints of a system that meaning can be articulated and these constraints arise in determined activity in the world. As Stekeler-Weithofer puts it 'conceptual analysis can never abstract away from Experience'



(ibid.) From which it follows, we need to see ‘knowledge...in the context of performing actions and actualising forms properly, that is according to the leading norms governing our actions empirically– as far as they are not yet made, in addition, explicit by rule, labels or sentences’ (ibid.). This way of thinking about concepts in the context of education may, at first sight, appear rigid imposing severe constraints on what we may think, but quite the contrary it is the very constraints that give us the freedom to both grasp and modify concepts. This approach to knowledge properly reflects ‘Man [as] a species (Lebewesen) with a particular lifeform (Lebensform)’ (ibid.). Humans are responsive to reasons and not simply bound by causes, and due to this they are a distinctive form of life.

For students, initiation into domains of knowledge creates the space for their concepts to be actualised in new ways. It is through this initiation that they can learn to think systematically. Michael Young’s ‘powerful knowledge’ or the power of knowledge domains cannot be reduced to the interest of specific groups. Rather it needs to be understood as an integral element of history itself. This is perfectly in-keeping with Young’s concern for truth and truthfulness (Young and Muller, 2015). What appears irrelevant to the needs and interests of learners is not the alien nature of knowledge as the property of the powerful, as commonly believed, but a result of learners having been introduced to concepts by inappropriate pedagogy which fails to pay due attention to the inferential nature of the knowledge domain. It is the lack of appreciation for the central role of the connection between concepts that impoverishes classroom practice.

The pedagogic decisions required to provide access to a knowledge domain require respect for the integrity of the domain. For example the teacher who introduces students to the Bible in an RE lesson by encouraging them to make their own bibles (e.g. a ‘fashion bible’, a ‘car bible’) abandons the opportunity to teach the actuality of the Bible as variously a religious, literary or historical document. The teacher who ‘facilitates’ a dialogue about preferences for works of art without any discussion of the reasons for them not only loses the chance to encourage learners to reason. In doing so, they substitute the opportunity for engaging with the question of what art is with the voicing of unchallenged opinion (Derry, 2016). These pedagogic decisions, although encouraged by a worthy intention to provide access to learners and allow them to construct their meaning based on their supposed interests, raises the very concerns that led Young to ask what is educationally worthwhile knowledge?

The epistemological presuppositions associated with learner interest which inform contemporary political challenges to the curriculum fail to recognise the integral connection between knowledge forms and the human condition. As a result, choices about ‘what knowledge’, as though knowledge came in packets, can take an arbitrary form where one area (interest of the students) can replace another (historically generated forms). The lack of a fine-grained account of what knowledge consists allows a form of knowledge in one area to slide into another without respect for the integrity of the knowledge domain. Vygotsky criticises the conflation of concepts in one knowledge domain with concepts in another as illegitimate. Referring to the different psychological approaches to personality of Stern, Bekhterev, Wertheimer and Freud, he argues: ‘Each of these four ideas are extremely rich, full of meaning and sense, full of value and fruitful in its own place. But elevated to the rank of universal laws, they are worthy of each other, they are absolutely equal to each other, like round and empty zeros ... to try and explain everything means to explain nothing’ (Vygotsky, 1997, pp. 245-246).

An appreciation of why licentiousness with regard to knowledge is illegitimate requires a more profound sense not only of the significance of human sociality but also of the integral nature of thought and world. This is precisely what Young’s sources, Cassirer and Durkheim, attend to in emphasising the distinctiveness of humans, i.e. that we mediate existence.

Rouse’s discussion of recent advances in philosophical understanding showing *how* concepts function in the practice of sciences, and ‘acquire content in relation to experience’ (Rouse, 2011, p. 244), is a different way of thinking about mind and world. Instead of one where conceptual articulation is solely a linguistic activity responding to but not integral to worldly activity, conceptual articulation is an integral part of activity itself.

A mode of understanding which attempts to do justice to the distinctiveness of the relation of mind and world features in one of Young’s sources, that of Ernst Cassirer. For Young and his co-author Muller, Cassirer offers the resources for providing a more fine-grained account of objectivity. According to Young ‘rather than classifying different knowledge structures, Cassirer classifies different types of objectivity, according to the relationship that concepts of *knowledge form* [my italics] have to their object’ (Young and Muller, 2015, p. 32). Cassirer rejects the natural sciences as the standard to which other disciplines should conform in favour of an approach which emphasises the specific relation of the knowledge form to its

object. Since the relation of knowledge to its object is established by concrete activity in the world and not by revelation, understanding knowledge and objectivity requires investigation of the sociological and its philosophical dimension. Relevant to this activity is what Habermas calls 'The liberating power of symbols'. Unlike the particular immediate relation to the world of animals, symbols allow humans to have 'a thoughtful, reflectively controlled reaction to the world' (Habermas, 2001, p. 7). The use of the term symbol here is broad and includes complex formations. Young and Muller see this role of symbols as significant: 'ideas and institutions are expressive; that is, they are part of social action that is both of the objective world but suffused by subjective meanings which frequently push at the bounds of objective categories' (Young 2008, p. 204).

Where Young's use of Cassirer helps us to appreciate knowledge as a result of self-determining human practices as opposed to animal sentience, Durkheim provides the basis for a sociological account of knowledge rooted in material human activities. The advantage of this, for Young, is to avoid the pitfalls which, because of the importance attached to 'interest groups or relations of power', fail to recognise the 'power of knowledge'.

An important theme in the work of Durkheim, Bernstein and Young is that the nature of the interconnectedness of things does not arise arbitrarily but rather arises from the social order that constitutes them and in turn is constituted by them. The grounding of modes of thought in the practices which mediate human relations with nature lies at the heart of the sociological approach which seeks to establish that knowledge itself is a part of the 'material' world. In rejecting criticisms of his own position on knowledge, Young turns to Durkheim's criticism of the pragmatism of his time for its approach to knowledge that lacked any 'external, constraining, obligatory' force (Young, 2008, p. 21). For Durkheim, understanding the social is never simply a matter of attributing power to perceived social forces; rather, the social is the foundation not only of the form of what we know but also the very basis of our powers of reasoning.

Durkheim is important for Young because he searched for an understanding of thought that went beyond interests to the material conditions of existence (*the Lebensform*). The primitive distinction between the sacred and the profane plays a critical role in the formation of classification and logic, according to Durkheim. In addition, it was in this primitive distinction that he perceived the origins of systematicity in thought. His study of the forms of

religious life led him to argue that: ‘Men owe to religion not only the content of their knowledge, in significant part, but also the form in which that knowledge is elaborated’ (Durkheim, 1995, p. 8). Giving priority to the material conditions of existence, Durkheim argued that ‘[it is not] that the social relations of men are based on the logical relations between things, in reality, it is the former which have provided the prototype for the latter (Durkheim and Mauss, 1970, p. 82). For Young what is significant here is that ‘[t]he power of logic had to refer to factors that were a priori and external to any specific human activity. In other words, to restate a key Durkheimian point, the compelling power of logic, and hence of knowledge, had to come from society as a reality sui generis’ (Young, 2008, p. 70). It follows from seeing forms of knowledge in these terms that is not adequate to explain them simply in terms of the interest of particular individuals, defined social groups or power relations. It is the insights gained from this approach that give Young the resources to distinguish forms of knowledge so as to provide a basis for what knowledge curricula should be designed to include.

Young sees parallels between Vygotsky’s distinction between scientific and everyday concepts and Durkheim’s distinction between the ‘sacred’ and the ‘profane’: ‘Both the ‘sacred’ and ‘theoretical’ concepts are expressed in terms of systematic relationships between concepts that are independent of specific contexts’ (Young, 2007, p. 52). The systematic character of the relationship between concepts has significant implications both for education practice and the understanding of knowledge. In respect to the latter, Rouse’s account of the inseparability of activity and thought is especially important.

It is important to recognise Durkheim’s argument that systematic thought is a distinctive and essential characteristic of human activity. As he puts it:

... to explain is to connect things to other things; it is to establish relationships between things that make them appear to us as functions of one another.... and as vibrating sympathetically in accordance with an internal law that is rooted in their nature. When I learn that A regularly precedes B, my knowledge is enriched with a new piece of knowledge but my intelligence is in no way satisfied by an observation that does not carry a reason with it. I begin to *understand* only if it is possible for me to conceive of B in some way that makes it appear to me as not foreign to A but united

with A in a relation of kinship. The great service that religions have rendered to thought is to have constructed a first representation of what the relations of kinship between things might be. (Durkheim, 1995, p. 239)

For Durkheim, thinking and knowing are moments of human activity in the world. The notion of the social articulation of thought is crucial here. It is only in the context of this appreciation of the indissoluble connectedness of mind with world that the nature of knowledge can be fully appreciated.

Problems arise due to the presuppositions that inform our conceptions of knowledge. Even these presuppositions are not free of the inextricably link between the movement of thought and the organisation of practices. This was noted by Bernstein when he bemoaned the contemporary context in which thinking about knowledge takes place. Moore (2012) explains that Bernstein's concerns were prompted by the marketization and managerialism that infuses contemporary education with, 'the domination of the intrinsic by the extrinsic, the sacred by the profane' (Moore, 2012, p. 188):

Of fundamental significance, there is a new concept of knowledge and of its relation to those who create it and use it. This new concept is a truly secular concept. Knowledge should flow like money to wherever it can create advantage and profit. Indeed knowledge is not like money, it *is* money. Knowledge is divorced from persons, their commitments, their personal dedications. These become impediments, restrictions on the flow of knowledge, and introduce deformations in the working of the symbolic market. Moving knowledge about, or even creating it, should not be more difficult than moving and regulating money. Knowledge, after nearly a thousand years, is divorced from inwardness and literarily dehumanised. Once knowledge is separated from inwardness, from commitment, from personal dedication, from the deep structure of the self, then people may be moved about, substituted for each other and excluded from the market. (Bernstein cited in Moore, 2012, p. 188)

The anxiety about knowledge, marked out so clearly by Young, arises in the context of a detached notion of knowledge which effectually sees thought in terms of 'justified true

belief'. What critics of Young do not give priority to is the life activity of humans, i.e. the social articulation of thought. In order to recognise the indissoluble connection of thought and world it is necessary to give interaction in the world priority. Rouse confirms this priority when he writes that:

The primary phenomenon to understand ... is not the content, justification, and truth of beliefs but instead the opening and sustaining of a "space of reasons" in which there could be conceptually articulated meaning and justification at all ... This "space of reasons" is an ongoing pattern of interaction among ourselves and with our partially shared surroundings.  
(Rouse, 2015, p. 17)

The Space of Reasons refers here to the normative space we inhabit (Testa, 2009). In Durkheim's study of religions, for example, the possibilities of classifying arises by virtue of the norms governing the distinction between sacred and profane. In the gene concept, norms legitimate its use in one context and not in another.

Recognising the influence of Brandom (1996, 2000), Rouse argues that we ought to think of the process by which knowledge itself develops as one of inferential articulation (Rouse, 2011). Crucially he argues that the inferential articulation of scientific concepts must incorporate the systematic development of a domain of phenomena within which objects can manifest the appropriate conceptual differences. The experimental practices that open such a domain thereby make it possible to form judgements about entities and features within that domain, but the practices themselves already articulate 'judgeable contents' prior to the explicit articulation of judgements'. Like Durkheim, for Rouse, it is social practices that intervene to organise the world in particular ways that offers the possibility of intelligibility in the form of 'judgeable contents'.

By attending to the integral connection between the thought and world it becomes possible to appreciate the significance of domains of knowledge but at the same time to be wary of the genericism that are all too popular in contemporary education (Young, 2007). This is precisely what Vygotsky warned against when he criticised the conflation of concepts from different domains. On the contrary, following Vygotsky, it is necessary to consider the

integrity of domains of knowledge in terms of the way in which particular concepts are articulated within the constraints of that domain.

If teachers are to assist students, in gaining epistemic access to a domain of study, attention to the systematic character of the knowledge domain is vital. Teachers need to give students access to the systematic constraints on concept use within a particular knowledge domain in order that they (the students) may come to appreciate how particular ideas function and therefore access their meaning. Attention to the *structure* of knowledge is necessary; indeed, it is important to understand that concepts exist in definite relations dependent upon the domain in which they function.

Under the rubric of criticism such as ‘the handing down of unimpeachable authority’, it is not the ‘enlightenment view of intelligence’ nor an excessive emphasis on ‘deductive reasoning’ that is being criticised but the very concept of knowledge domains themselves. What is neglected in these criticisms is precisely the issue that Young attends to, i.e. the structure and form of knowledge. When this is understood in terms of inferential articulation, a knowledge domain need no longer be seen as the provenance of dead white men but recognised as a dynamic tool honed over centuries that can provide students with the power of knowledge.

A significant point arising from the line of inquiry pursued by Young is that passing on of knowledge from one generation to the next must be understood as initiation into the lifeworld rather than a simple transfer of revealed truths. Particular forms of knowledge are not matters simply of group interest. Any equation of ruling ideas with the ruling class or of powerful knowledge with the knowledge of the powerful begs the questions that Young has addressed.

When Marx, in a manuscript that he consigned to the mice, pointed out that ‘It has not occurred to any one of these philosophers to inquire into the connection of German philosophy with German reality, the relation of their criticism to their own material surroundings’ (Marx and Engels, 1987, p.41) his target was the abstract idealism pervading the thought of his contemporaries. He bemoaned the detachment of thought from what later became called the lifeworld in which it emerges, and he insisted on starting with the conditions which humans produce by their own activity. The thin characterisation of knowledge informing debates about curricula, coupled with the desire to replace one content with another, fails to attend to the structure, form and genesis of knowledge which are at the

heart of Young's project. The failure to recognise how knowledge has really developed in history, leaving students without access to 'powerful knowledge', ends up by serving the interests of the powerful more effectively than the propagation of ruling ideas could ever achieve.

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