

The end of powerful knowledge?

John White* – UCL Institute of Education, UK

Abstract

This is a response to two discussions of my article 'The Weakness of "Powerful Knowledge"' featuring in 2018 in the *London Review of Education* 16 (2), the first by Johan Muller and Michael Young and the second by Jim Hordern. It also makes brief comments on pieces on powerful knowledge in the *London Review of Education* Special Issue 16 (3). The question I focus on here, as in 2018, is 'What *is* powerful knowledge?' I raise doubts about Muller and Young's new answer to this question as well as about Hordern's defence of Young's position more generally. I suggest in conclusion that it would be helpful to abandon the term 'powerful knowledge' and use language more suitable to impartial scholarly investigations.

Keywords: knowledge, curriculum, schools, subjects, power

My article 'The Weakness of "Powerful Knowledge"', published in this journal in July 2018, has seen two replies in print in 2019: one by Johan Muller and Michael Young in *The Curriculum Journal* and the other by Jim Hordern in the *London Review of Education* 17 (1). David Lambert has also commented on it in the 2018 *London Review of Education* Special Issue 16 (3) on Knowledge and Subject-specialist Teaching. Here I look at the two major replies in turn, considering points arising from the *London Review of Education* Special Issue as I go.

Muller and Young's arguments

White (2018) is a many-sided critique of Michael Young's now celebrated notion of powerful knowledge (PK). One of its main concerns is to explore why he calls the kind of knowledge he is interested in 'powerful'. This knowledge is said to be found in school subjects such as maths, science, history, geography, English and the arts, given that they are taught according to the canons of their parent disciplines as studied in higher education, for instance, and reinforced by school subject associations. Insofar as these are all types of knowledge, what makes them 'powerful'?

My 2018 article shows the attention that Young's claim that PK should be at the heart of the school curriculum has received in the educational world among academics, heads of schools and policymakers, in the United Kingdom and more broadly. In the short time since the article's publication, this has become even more evident. Those connected with academies, perhaps not surprisingly given the responsibility these have to construct their own curricula, seem especially attracted. In a September 2018 speech, schools minister Nick Gibb used the phrase four times, saying among other things that 'we must ensure that pupils are equipped with both powerful knowledge and the skills needed for this century' (Gibb, 2018). A month later, PK was a central topic in Peter Wilby's *Guardian* profile of Michael Young (Wilby, 2018).

What is powerful about 'powerful knowledge'?

Answer 1: Systematically related concepts

So what is it that puts the power in powerful knowledge? This is the question I want to take further now. As I wrote in 2018, to call a kind of knowledge 'powerful' suggests, but does not state, that it is preferable to other kinds. Its emotional impact is of something positive, something well worth having. This certainly helps to explain PK's popularity. The issue is: is there anything more in the term than this? Are there distinctive PK features that throw light on why this adjective is used?

Young (2005) has been sensitive to this appeal and tried to satisfy it:

powerful knowledge is systematic. Its concepts are systematically related to one another and shared in groups, such as subject or disciplinary associations. It is not, like common sense, rooted in the specific contexts of our experience. This means that powerful knowledge can be the basis for generalisations and thinking beyond particular contexts or cases ... Powerful knowledge is specialised. In other words, it has been developed by clearly distinguishable groups with a well-defined focus and relatively fixed boundaries, separating different forms of expertise.

As I state:

This quotation well articulates the two main features of PK, epistemological and social: (1) it has to do with bodies of knowledge built around their own, *sui generis* systems of interrelated concepts; and (2) it is the province of distinct specialised groups. (White, 2018: 326)

A plausible case can be made that each of these features in a way manifests powerfulness of a sort. Take (1). Mathematics is a clear-cut example of a kind of knowledge with its own distinctive system of interrelated concepts. If we compare it with the knowledge one might have of facts about the physical neighbourhood where one lives – the types of houses and flats, for instance, its greenery, its local shops – there are grounds for saying that mathematical knowledge is *stronger and more solid* since all its parts hang together in tightly interconnected conceptual webs. This is not true of knowledge of one's neighbourhood: whereas what stands out for Peter are types of houses and green spaces, Petra focuses on car parking problems and bus transport. There is a contingency about this kind of knowledge that is absent in a systematic area such as mathematics.

As for (2), the fact that subjects such as geography and English have longestablished subject associations and university departments in their hinterland gives them a clout not found in knowledge of one's neighbourhood – or even in a school curriculum activity such as Personal and Social Education, whose professional association was created only in 2007 and has no university subject behind it.

In White (2018) I outline a problem I have with (1). History and geography are routinely included among the strongholds of PK, but – unlike maths or physics – neither has its own specialized system of interrelated concepts. History, for instance, makes use, for the most part, of everyday concepts; terms such as 'scutage' that can easily be explained in non-technical language; and occasionally concepts from other disciplines such as economics.

Young now agrees with the general point I made. His article with Johan Muller states that the Humanities and the Arts are

not in the first instance marked out by hierarchical structures of concepts in the same way as [are] the sciences, or even by concepts systematically related to one another (Young, 2015), one of Young's criteria for PK, as White (2018) points out. (Muller and Young, 2019: 3)

But since history, geography and literature are still in the PK pantheon, why is this? On what criterion? Young's second feature of PK – being the province of a distinct specialized group – still holds. These school subjects all have robust professional associations that draw their life-blood from the work of their counterparts in higher education.

Is this, then, all that PK means: knowledge that has its home in one or other of these specialized groups? If so, why call it 'powerful'? Could it be that it refers to the *influence* that these associations have in curriculum policymaking? Is it just their clout?

That is not the route that Muller and Young take. This is understandable, given that Young in particular has always emphasized that PK is not to be confused with the 'knowledge of the powerful' that was the target of his well-known collection *Knowledge and Control* (Young, 1971). (I realise that in 1971 he had in mind elite social groups, not academic entities.)

Answer 2: Potentia

To come back to the meaning of PK. Why call the knowledge associated with specialist academic groups 'powerful'? If it is not systematic interrelatedness of concepts or influence in curriculum policy that makes it so, what is it? Muller and Young acknowledge the force of the question. Following a line of thought in Stephen Lukes's (2005) discussion of power, they now seek an answer in a distinction that Lukes takes from Spinoza, between *potestas* and *potentia*. Whereas – in their words – '*potestas* is ... "power over"' other people, *potentia* is '"power to" or the ability and capacity to do something' (Muller and Young, 2019: 6).

It is *potentia* that in their view throws light on the 'power' of PK. Although they do not give us a fully articulated account of how this is the case, they clearly hold that the reason why geographical, scientific and other kinds of discipline-based knowledge are 'powerful' resides in their *potentia*. And one can see something of the link they want to make between the two in their claim that

Potestas is always deformative, it withdraws, excludes or deprives, it places X in Y's power, constraining X's choices, securing X's compliance; *potentia* is productive or creative, it extends horizons, it imagines new futures ... involves the capacity to achieve something of value. In this sense, highly specialised knowledge as produced by universities confers a very specialised capacity to its holders. (Muller and Young, 2019: 201–2)

This is an ingenious attempt to explain why we would be right to call disciplinary knowledge 'powerful'. In invoking *potentia*, they make a *direct* link between PK and the notion of 'power' – a link not found in their earlier attempt to define PK in terms of systems of related concepts. And one can also accept that being creative, having extended horizons, achieving something of value and so on are at least necessary conditions of engaging with disciplinary knowledge at its highest levels, even though they are not sufficient ones.

Despite these points, the new argument is flawed. The quotation just presented is about a contrast between the defining features of *potestas* and those of *potentia*. While I have no issue with the former, the latter are problematic. *Potentia*, we remember, is the power or capacity to do something. But not all instances of the concept, by any means, involve the capacity to be creative, have extended horizons, imagine new futures or achieve something of value. Having the capacity to do something is a far more all-encompassing notion. I have the power or capacity both to close my eyes and to eat solid food. It makes no sense to call either of these activities 'being creative'. They do not 'extend horizons, or imagine new frontiers'. As for 'achieve something of value', this does not apply to my power or capacity to kill my pet cat for fun or to domineer over others. Note in this connection Lukes's (2005: 74, emphasis in original) comment that *potestas* is 'the ability to have another or others *in your power*' is itself a kind of *potentia*.

If this is an accurate account of Muller and Young's new attempt to explain what is powerful about PK, it is thus no more successful than their earlier one. We are still left with the same verdict as before – that all that PK means is that it is the knowledge pursued and taught by specialized disciplinary groups such as mathematicians, biologists, geographers, historians and experts in literature.

Answer 3: Generating new ideas

Whether this *is* an accurate account, as suggested in the previous paragraph, is a further question. Despite the last quotation, there are indications elsewhere in Muller and Young's article that in stating that *potentia* is 'productive or creative, it extends horizons, it imagines new futures' and so on, they are not giving defining features of the concept but indicating the *kind* of *potentia* that disciplinary knowledge embraces. This is most apparent towards the end of their article, where they say that there are at least *three* senses of 'powerful knowledge' (Muller and Young, 2019: 14). In the three corresponding sub-sections they argue that

- 1. Academic disciplines contain 'meaning that is generative'; 'disciplinary discourse creates the possibility of meaning extending to other contexts'; 'disciplines are potent because people with access to them can generate unpredictable possibilities'.
- 2. School subjects should deepen students' grasp of the epistemological demands of their parent disciplines. 'The curriculum must first provide signposts to the structure of the subject before adepts are empowered to generate new ideas.'
- 3. This is headed: 'Power as generative capacity: the power to generate new ideas. Teachers of school subjects must be 'sure guide(s) to the deep structure of the subject'. When they are successful, 'the pupils become empowered in a range of ways: in the quality of their discernment and judgement; in their appreciation of the range and reach of the substantive and conceptual fields of the subject; and in their appreciation that the substantive detail they have learnt is only part of what the hinterland of the subject has to offer. They are able to make new connections, gain new insights, generate new ideas'.

I do not grasp how this shows that there are (at least) three senses of PK. There is, rather, as the quotations show, just *one* sense to do with the capacity to extend horizons/ generate new possibilities or ideas. The three subsections are about how this single kind of capacity is nurtured in different contexts.

A problem about Answer 3

There is still the question why the term 'powerful' is being used in this new account. The notion of 'power' as *potentia* is about a capacity to do something. Not all such capacities can sensibly be called 'powerful'. *Potentia* is not necessarily something powerful. There is nothing powerful about being able to wiggle one's ears or wash the dishes.

If one has the capacity to generate new ideas (for example), one has a power, certainly; but need it be a 'powerful' one? Someone mildly paranoic may be able to spin out all sorts of new ideas about the enemies surrounding him, extend his horizons in the process, imagine new futures, generate unpredictable possibilities. A mediocre thinker who fancies her prospects in the advertising world may come up with all sorts of new ideas to sell bird food, but they are all non-starters. What is 'powerful' about these examples?

In their 2019 article Young and Muller try to find a definition of PK that is more accurate than the earlier one about systematic relationships between concepts. They claim to have found this in the notion of a capacity to generate new ideas (for example). But although this is a power (or *potentia*), it is not in itself a *powerful* power. They need to go further than the definition they propose. We are still no further forward in discovering what makes the subject knowledge in which Young and his colleagues are interested *powerful* knowledge.

Two further problems

Muller and Young also have views on how school subjects should be taught, specifically about progression within subjects. They think this should be about leading students increasingly into the ways of thinking of their parent disciplines:

How should the content be sequenced and paced so as to represent the deep structure of a body of knowledge in its increasing complexity? The structural order differs between the different disciplines ... In History, the material must be sequenced so as to deepen the appreciation of claims, evidence and argument, so that the inferential reach of learners is progressively deepened. (Muller and Young, 2019: 15)

But the injunction in the last sentence is contentious. There is more than one direction that history teaching can take. Progression in the subject is not limited to plumbing further depths. I am not at all denying the importance of this, but my point is that history teachers also move horizontally, as it were, as well as vertically. For part of their course, they may want, for instance, to help students towards a fuller picture of what was happening in Britain during its Industrial Revolution by looking at such interconnected things as the growth of urban life, the contrast between North and South, and changes in political parties. This may not provide depth, but it does provide breadth. History is not the only subject to which this general point applies. To go back for a moment to my problems with 'Answer 3', Muller and Young's account of progression seems to support Zongyi Deng's view in his contribution to the *LRE* Special Issue (Deng, 2018) that Young's and his associates' focus is inward-looking, to do with acquiring knowledge for its own sake at the expense of other aims.

With an exclusive focus on the internal properties and explanatory power of knowledge, they take knowledge as being an end in itself, rather than as a means to some larger purpose of education. They seem to be concerned with, borrowing from David Hamilton, the immediate, present question of 'what should they [students] know?', rather than the futureoriented question of 'what should they [students] become?' (Hamilton, 1999: 136). (Deng, 2018: 273) This almost concludes what I have to say about PK in Muller and Young's article. There is just one more point to make. Muller and Young include 'the arts' among the areas producing PK. But there is a problem about such subjects as literature or music, dance or painting. Take literature. In what sense is literature a type of *knowledge*? A-level and university-level courses that deal with literary analysis are certainly knowledge-rich. But a love of literature, like a love of music and other arts, has arguably more to do with sensuous, imagined and other forms of aesthetic enjoyment than this or any other kind of literary knowledge. To what extent schools should prioritize such delights over academic knowledge is a further question.

Jim Hordern's arguments

As I wrote in White (2018: 326) and have explained more fully earlier in this article in my discussion of 'Answer 1',

the first part of the article focuses on the definitional connection that Young makes between 'powerful knowledge' and systematic relationships between concepts. It argues that most of the school subjects that Young sees as providing 'powerful knowledge' fall short on this requirement.

Hordern (2019: 27) writes:

For White (2018: 326), there are 'two main features of PK, epistemological and social', with the epistemological 'to do with bodies of knowledge built around their own, sui generis systems of interrelated concepts' and the social that 'is the province of distinct specialised groups'. While this interpretation could be read from the quote used from Young, it arguably misconstrues the understanding of knowledge that underpins the development of Young's work on PK, namely that *the epistemic is inextricable from the social, and vice versa*. The two features that White separates for his analysis are seen as mutually constitutive by Young and his collaborators. Their approach is 'socio-epistemic'...

and

He focuses mainly on the first feature (namely his interpretation of the epistemology of PK) while offering no substantive discussion of the second (the social). This suggests an attempt to drag into epistemology an argument about knowledge that has developed within sociology.

Hordern misunderstands me. It is true that I say little about social aspects of knowledge, but that is not because I think that 'questions of knowledge are purely the province of (pure, analytic) epistemology' (Hordern, 2019: 28). From the 1980s onwards, philosophers such as Alasdair MacIntyre (1981), Charles Taylor (1989) and Bernard Williams (1985) (the last of whom Hordern mentions in this connection) rightly opened our eyes to the genealogy of our concepts of morality, self-understanding and truth. I willingly accept that, at least in this sense, 'the epistemic is inextricable from the social'. I also recognize that sociologists have had a legitimate interest in empirical questions about how knowledge is socially organized and have generated their own theories about this. I do not 'wilfully ignore' this sociological hinterland (Hordern, 2019: 34).

Hordern seems to be assuming that if 'the epistemic is inextricable from the social' this means that it is illegitimate to focus on the former (for example, the

conceptual adequacy of an account of knowledge) without 'substantive discussion' of the latter (for example, the role of distinct specialized groups in organizing and transmitting knowledge). Hordern gives no reason for this claim, and it is indeed hard to imagine what a good reason would be. Sometimes someone interested in exploring conceptual points about knowledge may find it helpful to go into empirical material about how knowledge is academically organized or into related historical sociological theorizing, for example by Durkheim or Bernstein; but sometimes they may *not* find this relevant to the purpose they have in mind. There is no *obligation* on them to engage substantively with such sociological concerns. It all depends on their aims. England is in a sense inextricable from the counties that make it up. But someone writing a book on Nottinghamshire pubs does not *have* to – although she might – include material on England as a whole.

The reason why I focused on the epistemological feature of PK 'to do with bodies of knowledge built around their own, sui generis systems of interrelated concepts' is that my concern in that 2018 article – as in this one – was to explore how far Young and his colleagues have good reasons to use the term 'powerful' to label the knowledge taught and acquired in a range of school subjects. I explored the epistemological feature mentioned because Young used it as a criterion of the powerfulness of PK. As we saw earlier in the present article, Young himself has no problems about my focusing on this criterion (even though my point is a conceptual one and does not take us into sociological theory or empirical investigations). Indeed, he *accepts* my main criticism of his criterion and suggests an alternative.

Underlying my concern about the use of the term PK has been to discover whether it means anything more than 'the kind(s) of knowledge we find in subjects such as maths, science, history, geography and so on'. If there is some good reason for its use, what is this reason? If there is no good reason, are we left only with the emotive charge of the word 'powerful' of which Hordern and many others are aware? We are all familiar with the attraction the term holds for advertisers: of the loo cleaner Harpic, for instance, which now has inscribed on its label 'Most powerful cleaner – Harpic Power Plus Max'. Is the word 'powerful' used in sociology of knowledge and curriculum circles to *promote* certain fields of knowledge and/or to *shore up their position* against competitors? Or are there good grounds for its use? Does it label something objective about certain types of knowledge and not others (everyday knowledge, for instance)?

So I do not see myself as locked inside epistemological pursuits, or, as David Lambert says in his Editorial to the *LRE* Special Issue, as engaging in 'a kind of navelgazing that is centred on challenging philosophical debates about the meaning of knowledge' (Lambert, 2018: 357). As Hordern is the first to agree, the term 'powerful knowledge' is now widely used in the wider educational world among school leaders and policymakers. It is a matter of public interest to know how far this is solidly based, and how far such people latch on to the phrase because they want to promote a curriculum that matches their political agenda, for instance, or are simply, perhaps, adopting a fashionable term.

Hordern is as concerned as I am about how the notion of PK has been 'put to use for political purposes' in 'policy [and practice] communities' (Hordern, 2019: 31). He sees these as using it 'for reasons that have little to do with the original notion' (ibid.: 31) as worked out by Young and his associates within sociology. Relating this back to his critique of my article, he says that 'White's arguments can therefore be seen as part of a necessary response and challenge to the PK intervention in curriculum debates,' and that 'White's (2018: 333–4) criticism that debates about PK lack "careful exposition and close argumentation" holds true only for the intervention in curriculum discussions' (ibid.: 34).

But my critique of PK is more centrally about Young's position than it is about the term's popularity in parts of the educational world, important though that is. Unless Young's and others' use of the phrase in their academic arguments is solidly based – that is, gives us clear and telling reasons why a certain sort of knowledge is rightly to be called 'powerful' – we should conclude that *academia itself*, not the world of school policy, is the home of the term's use in a non-rational, emotive way – that is, a way that suggests but does not show that something is desirable.

This is true above all of writings by Young and his colleagues. It was Young, after all, following the use of the term in an article by Neesa Wheelahan (2007), who introduced the notion of PK to the world of educational theory in Young (2011) and has elaborated his ideas about it in many publications since that time. *LRE's* Special Issue is further evidence, should it be needed, of the attractiveness of the term for academics. All of its eight articles are on the theme of 'Knowledge and Subject-specialist Teaching' and all of them discuss this in a way that highlights PK. Even though some of these pieces raise difficulties, about, for instance, Young's 'distinction between curriculum and pedagogy' (Gericke *et al.*, 2018), or as I have already mentioned, his alleged view of 'knowledge as being an end in itself, rather than as a means to some larger purpose of education' (Deng, 2018), none of them, as far as I can see, is unwilling to use the term PK in their positive curriculum proposals.

Farewell to powerful knowledge?

Hordern writes in his conclusion that 'it may be important to continue this academic work to further develop PK or related ideas such as specialized knowledge (a term that has less of the emotional resonance of PK)' (Hordern, 2019: 34). I am sympathetic to the idea of using the term 'specialized knowledge' (SK) rather than PK for the reason Hordern gives. It more accurately describes the kind of knowledge that mathematicians and historians have and that the person in the street may lack. It carries no in-built assumption that it is a good thing.

It would also be a more useful term than PK in discussions about what the school curriculum should contain. PK has tended to be associated with a small range of subjects – most usually with maths, science, history and geography. Its positive charge has been used to validate or shore up the place of these subjects in the standard school curriculum without subjecting their claims to more rigorous discussion.

Geography in particular, or, as it is sometimes termed, 'Powerful Geography' (http://powerfulgeography.org), has probably benefited most from this. While the disciplinary status of maths and the natural sciences has long been secure, geography, straddling as it does material about human cultures and science-based subjectmatter, has always been a more controversial area, as David Livingstone (Hoyler *et al.*, 2002) has pointed out. In its early years as an examined secondary school subject, it was lumped together with other subjects in the revised matriculation regulations of 1858 (Harte, 1986: 105) which required proficiency in Latin, mathematics, English with English history and modern geography, two branches of natural science, Greek (until 1874) and either French or German (Board of Education, 1938: 39). In the twentieth century its position became increasingly secure, owing partly to support received from its parent body the Geographical Association, founded in 1893. But some insecurity has persisted. Older readers of this article may remember the distress caused to some geography educators in the 1960s and 1970s by their subject's being labelled in Paul Hirst's influential theory of the 'forms of knowledge' a 'field (of knowledge)' rather than a 'form' (such as maths). And even today, 'history or geography' jointly constitute one of the EBacc subjects in English secondary education, while none of the others – English language and literature, maths, the sciences and a language – have to share their place with an alternative.

Using the term SK rather than PK, as Hordern suggests, opens the way to more rigorous discussion of curriculum content. It enables us to review the claims of different sorts of SK to be included. Latin has its own kind of specialized knowledge, but not every kind of SK merits a place in a compulsory curriculum and most would agree that Latin does not. On the other hand, the topic of climate change also requires its own SK, and many would like to see it having a more established place in the curriculum. Their view, as expressed in the *Guardian* on 21 February 2019, is that 'there is currently no requirement for children to be taught about the climate crisis so it is treated at best as a peripheral subtopic of subjects like geography and science' (Watts, 2019).

This example underlines a drawback of the PK approach, insofar as it focuses on school subjects as entities to be treated in an all-or-nothing way: vitally important knowledge may slip through the net.

Abandoning PK and replacing it with SK would thus enable us to discuss what *kinds* of SK should be taught in schools. This would mean cracking open subjects as 'block entities' (as David Hamlyn (1967: 26ff) described the way in which some may be inclined to see them) and assessing the types of specialized knowledge among them to see what claims they should have on curricular space. In history, for instance, how should one weigh SK about medieval Britain against SK about world history since 1900? (Those more familiar than me with maths and science may be able to make comparable points in their own disciplines). All this reinforces the claim that answering the question 'What should go into the school curriculum?' should begin with a discussion of educational aims and not seek to bypass this, as Young does (White, 2018).

One final point about Young's and his colleagues' attachment to PK as 'the prime object of schooling' (Muller and Young, 2019: 12). There is something odd about this. They have written about PK for ten years so it is reasonable to assume that over this time they must have had a tolerably clear understanding of what is powerful about PK. One could not fault them if over time they had refined their account of this. But in place of refinement there has been a radical shift. Young's original definition in terms of systematic relations between concepts has given way to one in terms of potentia. Rather than refining or jettisoning the former account when it has come under pressure, Muller and Young have turned to an entirely new way of understanding the term 'powerful', based on a distinction in Latin. The descriptive meaning they have attached to the word has totally altered. What has not changed is its salience in their writing. This suggests that they must have some reason for holding on to it even though they have not, until recent critical probing, seriously got to grips with clarifying what descriptive meaning, if any, underlies their use of the term. This reinforces the suspicion that, consciously or unconsciously, they have been attracted from the start by the non-descriptive, emotive connotation of the term PK as something unquestionably worth having.

If so, this is all the more reason for everyone seriously concerned about the place of knowledge in the curriculum to *abandon* the phrase PK and, following Hordern's suggestion, to use terminology appropriate to impartial scholarly investigation rather than language more at home in the world of product promotion.

Notes on the contributor

John White is Emeritus Professor of Philosophy of Education at UCL Institute of Education. His interests are in the mind of the learner, and in educational aims and curricula. Recent books include What Schools are For and Why (2007), Exploring Wellbeing in Schools (2011), The Invention of the Secondary Curriculum (2011), An Aimsbased Curriculum (with Michael Reiss) (2013), Who Needs Examinations? (2014), and What's Wrong with Private Education? (2015).

References

- Board of Education (1938) Report of the Consultative Committee on Secondary Education with Special Reference to Grammar Schools and Technical High Schools. London: HMSO.
- Deng, Z. (2018) 'Rethinking teaching and teachers: Bringing content back into conversation'. London Review of Education, 16 (3), 371–83.

Gericke, N., Hudson, B., Olin-Scheller, C. and Stolare, M. (2018) 'Powerful knowledge, transformations and the need for empirical studies across school subjects'. *London Review of Education*, 16 (3), 428–44.

Gibb, N. (2018) 'Speech: School Standards Minister at ResearchED'. Online. https://tinyurl.com/y66p4se6 (accessed 20 July 2019).

Hamilton, D. (1999) 'The pedagogic paradox (or why no didactics in England?)'. *Pedagogy, Culture and Society*, 7 (1), 135–52.

Hamlyn, D.W. (1967) 'The logical and psychological aspects of learning'. In Peters, R.S. (ed.) *The Concept of Education*. London: Routledge and Kegan Paul, 24–43.

Harte, N. (1986) The University of London, 1836–1986: An illustrated history. London: Athlone Press.

Hordern, J. (2019) 'Exercise and intervention: On the sociology of powerful knowledge'. London Review of Education, 17 (1), 26–37.

Hoyler, M., Freytag, T. and Jöns, H. (2002) 'Geographical traditions, science studies, and biography: A conversation with David N. Livingstone'. In Livingstone, D.N. Science, Space and Hermeneutics: Hettner-Lecture 2001. Heidelberg: Department of Geography, University of Heidelberg, 77–98.

- Lambert, D. (2018) 'Editorial: Teaching as a research-engaged profession: Uncovering a blind spot and revealing new possibilities'. *London Review of Education*, 16 (3), 357–70.
- Lukes, S. (2005) Power: A radical view. 2nd ed. Basingstoke: Palgrave Macmillan.
- MacIntyre, A. (1981) After Virtue: A study in moral theory. London: Duckworth.

Muller, J. and Young, M. (2019) 'Knowledge, power and powerful knowledge re-visited'. *Curriculum Journal*, 30 (2), 196–214.

Taylor, C. (1989) Sources of the Self: The making of the modern identity. Cambridge, MA: Harvard University Press.

Watts, J. (2019) 'Teachers to join climate protests to demand curriculum reform'. *The Guardian*, 21 February. Online. https://tinyurl.com/y6lcu4tr (accessed 20 July 2019).

Wheelahan, L. (2007) 'How competency-based training locks the working class out of powerful knowledge: A modified Bernsteinian analysis'. British Journal of Sociology of Education, 28 (5), 637–51.

White, J. (2018) 'The weakness of "powerful knowledge"'. London Review of Education, 16 (2), 325–35.

Wilby, P. (2018) 'The counterculture class warrior who turned to Gove'. *The Guardian*, 9 October. Online. https://tinyurl.com/ybt3a4q8 (accessed 20 July 2019).

Williams, B. (1985) Ethics and the Limits of Philosophy. London: Fontana.

Young, M.F.D. (ed.) (1971) Knowledge and Control: New directions for the sociology of education. London: Collier-Macmillan.

- Young, M. (2011) 'What are schools for?' Educação, Sociedade & Culturas, 32, 145–55.
- Young, M. (2015) 'Unleashing the power of knowledge for all'. *Spiked*, 1 September. Online. https://tinyurl.com/y3agj3lh (accessed 20 July 2019).