
Research article

Disciplinary knowledge for what ends? The values dimension of curriculum research in the Anthropocene

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Abstract

This article makes the case for repositioning values and ethics as central to understanding how curriculum knowledge can be educationally powerful. Disciplinary knowledge can help individuals make sense of the present, explore alternative futures and participate in society, making ethical choices about how to live. This, however, depends on particular relationships between curriculum, disciplinary knowledge, values and ethical perspectives. We argue that the recent research agenda exploring disciplinary knowledge underplays the values dimension in how curriculum knowledge is constructed and used. First, we give an overview of the recent thrust of curriculum debates in subject education communities, placing this in some historical context. Here, we recognise the need to make a robust case for school subjects and their important relationship with disciplines. We go on to examine some arguments around the role of knowledge in curriculum. Taking the concept of the Anthropocene (the human epoch of the planet) and from our perspectives as geography and religious education educators, we propose a focus on ethical disposition and interdisciplinarity to make the values dimensions of curriculum knowledge more visible.

Keywords powerful knowledge; Anthropocene; sustainability; curriculum; ethics; values; geography; religious education; disciplines; interdisciplinarity

Introduction: shining a light on values in curriculum knowledge

Our aim in this article is to explore values and the ethical in curriculum knowledge. In doing so, we hope to encourage further debate and research into how school subject knowledge is conceived in a time of increasingly stark environmental and social challenges. We are concerned that recent research into subject disciplinary knowledge power has hidden the central role of values and ethics for curriculum knowledge to be powerful. We are not calling for an 'ethical turn' which neglects disciplinary knowledge in school subjects in favour of education for 'good causes' as Marsden (1997) and Standish (2009) justifiably criticise. Rather, we attempt to move away from seeing school curricula as a choice between an ethical emphasis and a knowledge emphasis. We suggest a new ethical turn is possible, if we acknowledge the values and ethical assumptions implicit in discussions around 'powerful' disciplinary knowledge. Contrary to the idea that focusing on the ethical will dilute or hollow out school subjects, we suggest it could in fact strengthen them by encouraging a deep engagement with subject knowledge as 'revisable', in response to changing needs and changing times (see Hordern, 2021).

Subject disciplines are school subjects which are a version of the academic discipline. They draw on, and have a relationship with, the discipline, even as the discipline evolves. This relationship is complex and not unidirectional, with many actors involved. For example, academics, teachers, students and wider networks play a role in the recontextualisation of geography and religious education (RE) as subject disciplines (see Fargher et al., 2021; Kueh, 2020). We see subject disciplines as powerful educational resources, which can prepare young people for the social and environmental challenges of the decades ahead. To paraphrase Young and Lambert (2014), disciplinary knowledge is part of the unrealised, but possible, future school. Our intention is to show that a subject disciplinary knowledge focus in educational research will be strengthened by attending to the values dimension of knowledge. A 'business as usual' mindset, meanwhile, is likely to extend the trend in schools toward performativity, rather than thinking about how a curriculum may lead to a better future. A radical abandonment of subject disciplines, however, in favour of a curriculum that addresses issues without subject boundaries could equally be a missed opportunity to envision the future in new ways (see Young and Muller, 2010).

We acknowledge the claim that disciplinary knowledge has, to an extent, its own emancipatory worth through a commitment to truth. We broadly subscribe to a liberal humanist educational philosophy in which education should enable individual freedom to think and act as each person has reason to value. This requires children's access to a curriculum that develops their capabilities – to participate, to relate to others, to have empathy and so forth (see Sen, 1999). However, at the end of a liberal humanist education, values will influence the form of one's knowledge, how it is used and, therefore, the choices made. Education cannot and should not set out to mould a person's entire value system. But curriculum knowledge undeniably plays a formative role. Here, we offer some ways to recognise and explore the values dimension of disciplinary knowledge. We see this not in opposition to, but strengthening the case for, subject disciplinary knowledge in a curriculum that acknowledges the implications of life in the Anthropocene.

Values in curriculum emerge at different stages of knowledge production and reproduction. Disciplines have a genealogy, forming and evolving in value-laden social, economic and political structures. Goodson (1998) challenges the assumption that the university discipline holds power over the school subject, arguing that the school–society relationship is dialectical. Indeed, in nineteenth-century England, school geography pre-dated university geography through the purpose of inducting children into an imperialist mindset of Britain's relationship to the world. In England, the school subject drove the establishment of geography as a university discipline, rather than vice versa (Goodson, 1998). At the classroom level, knowledge is recontextualised and constructed as curriculum by teachers as they plan lessons and longer units of work, with their students' needs in mind, but also with further value-laden influences shaping the taught curriculum (such as exam pressures and whole-school policies). In this article, we unpack the complex emergence of values in shaping knowledge power, explaining our

reasoning with particular attention to theories of recontextualisation, curriculum ideologies, subject didactics and powerful disciplinary knowledge.

We first clarify what we mean by values, the ethical dimension and the Anthropocene, before locating our argument in a historical context of why 'knowledge' has become so prominent in curriculum discourses. We identify a gap in the research and suggest ways to bring the values dimension into the curriculum-knowledge field. Finally, we draw on a framework for revisability (Hordern, 2021) to propose ways that values dimensions of disciplinary knowledge in curriculum can be explored through RE and geography in the context of the Anthropocene.

Values, ethics and the Anthropocene

Education faces urgent, ethical and values-based questions if it is to respond to the challenges posed by the Anthropocene. To establish the normative ethical contexts for disciplinary knowledge, we begin by drawing on conceptual, psychological and sociological values in the literature, followed by the statutory ethical frameworks that are required of all schools in England. We conclude that values and ethics are helpful, if loose, framings for critical curriculum research, rather than settled principles or definitions. Later, we argue against a rigid normativity which limits agency, and we suggest an alternative which promotes agency and capability. This, we propose, requires a critical ethical disposition in light of the plurality of values and ethics.

Rokeach's (1973) and Schwartz's (1996) theorisations of values are useful conceptual and psychological starting points for our argument, the former being 'an enduring belief that a specific mode of conduct or end state of existence is personally or socially preferable to an opposite mode' (Rokeach, 1973: 5). Schwartz (1996) presents a psychological perspective of 'human values' conceived as four broad groups: openness to change, self-transcendence, self-enhancement and conservation. Schwartz's empirical work leads to his claims that values evolve from self- to community-oriented perspectives as life advances. Schwartz notes that the most common variables are social and economic situations which dictate the extent of one's ability to enact values.

More recently, sociologist of religion Linda Woodhead conducted a multidisciplinary empirical study from corporate branding to undergraduates' testimony. She identifies values as 'the new religion' and an expression of a post-religious society that moves from an ethic of 'give your life' to 'live your life' (Woodhead, 2021). A shift away from normative values of organised religions and institutions, this autonomy allows the individual to enact what the individual values. This is caveated by the significance of freedom of identity, which leads the individual to support the community with which he or she identifies (Woodhead, 2021). Values within subjects and curriculum will be discussed in due course, but for the purposes of our argument, we briefly acknowledge the requirement of English schools to promote 'Fundamental British Values', as they are the normative values that underpin the life of the school. These values are identified by the English Department for Education (DfE, 2014a: 5) as 'democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs'. There is considerable literature that criticises the Fundamental British Values statutory framework as a covert home security campaign that began with the Prevent strategy to address a perceived threat of extremism in schools (see Miah, 2017). An examination of the relationships between security and values is beyond the scope of this article; however, it is worth noting tensions between normative notions of democratic values and alternative discourses on democracy prompted by the Anthropocene. For example, ecological and environmental democracies prioritise 'environmental values and expanding participatory governance ... [which constitute a] fundamental critique of neoliberal environmentalism' (Pickering et al., 2020: 2). Such discourses lay blame on normative educational values for their inability to address the current environmental situation. Even the prized Deweyan principle of 'autonomy' is not immune to value bias when framed by a value-laden education system or curriculum.

Values education can also be considered more widely in movements such as 'character education', 'values-based education' and 'virtues education', which have influenced existing schools and formed foundations of new schools (see Arweck and Nesbitt, 2004). Reiss and White (2013) propose an 'aims based curriculum' in which values lead the formation and structure of the curriculum, rather than 'adding-on' values to existing curricula. This may be more effective in meeting students' needs and desires during and beyond school, being a holistic moral formation associated with *Bildung*, rather than an 'atomistic approach to curriculum' (Reiss and White, 2013: 21). To consider an illustration of this as

praxis, we point to the recent school climate strikes by young people who reject the curriculum offered, calling for climate justice values to structure a new curriculum.

A comprehensive discussion of ethics is not possible here; rather, we highlight the challenges of plural ethical perspectives due to the inextricable connection with ontology. We posit that the Anthropocene calls for school education to enable a critical ethical disposition that can respond to the existential, socio-economic and political nature of this epoch. Broadly speaking, normative ethics from theistic, dharmic and philosophical traditions can be considered in terms of three categories: (1) virtue ethics concerning the development of virtuous characteristics; (2) ethical rules or principles applied to actions (deontology); and (3) consequentialist ethics in which one considers the outcomes of one's decision. In turn, these relate to existential beliefs regarding the fruits of an ethical life, whether dependent on beliefs in life after death or not. The condition of not being attached to the outcome of ethical choices exists in religious and secular systems, and this conundrum is perhaps best known in debates surrounding the contested authenticity of altruism (see Churchill and Street, 2002). Two further and useful categories for our discussion of ethics are anthropocentric (human-focused) and biocentric (all living forms-focused). The point we make here is that values and ethical perspectives are diverse, intersectional and context driven. We suggest that the Anthropocene calls for a considered and informed ethical approach that reflects its super-complexity.

The Anthropocene, or the current 'human epoch', identifies human impact as the significant factor affecting carbon deposits in the geological strata across the world. This epoch draws attention to humans' impact on geology and the concurrent human responsibility for rapid global warming. The time when the Anthropocene began is contested, ranging from the beginning of agriculture around ten thousand years ago, to twentieth-century technological accelerations after the Second World War. Most commonly, the invention and proliferation of steam power in the eighteenth and nineteenth centuries is cited. Despite this variety, the Anthropocene's meanings in environmental, social, political and philosophical terms have come to characterise the challenges of the contemporary period and have significant implications for values, ethics and disciplinary attentions. The Anthropocene captures a challenge to power structures in disciplinary norms while subsuming left-wing, anti-colonial and green politics (Monastersky, 2015).

Primacy of reason, logic and rational judgement permeates the structures of school subjects and desirable skills such as critical thinking and evaluation (see DfE, 2014b; OECD, 2019). But the sociopolitical zeitgeist of the Anthropocene calls these philosophical and educational norms into question. Indeed, eighteenth-century European philosophical underpinnings in the school curriculum make implicit connections to the philosophies of human 'progress' dependent upon utilitarian, exhaustive and extractive processes. Meanwhile, values based in biocentric and reciprocal worldviews (and their related knowledge) remain on the margins of mainstream culture and curriculum development. We posit that separation of the economic, existential and ethical has led to an epistemic and values crisis. Knowledge traditions structured around recognition of the sacredness of nature, animist ontologies and human responsibility within these systems (for example, Indigenous knowledge, ecological spirituality or 'green' religions), suffer their own epistemic silence through threats to the survival of Indigenous lands, communities, languages and traditions.

Geography and RE have a part to play in addressing this crisis due to the scope of their knowledge traditions. They are both subjects with an interdisciplinary basis, and each has a collection of 'parent' academic disciplines. Both subjects are typically structured around ways of seeing and being in the world that are dichotomised as human/physical (geography) and insider/outsider (RE). Our discussion seeks to problematise these dichotomies and proposes a dialogue between the subjects through a critical approach to ethics, values and knowledge.

Powerful knowledge distortion and values as a hidden dimension in recent curriculum research

We will first clarify what we consider has become hidden. To do so, it is helpful to look at how Young and Muller's (2010) notion of 'powerful disciplinary knowledge' is grounded in a careful consideration of values and moral questions. Young and Muller (2007) reject the postmodernist argument that a curriculum based on established disciplinary knowledge is merely one set of subjective stories and that there can be no objective truth. However, they also accept that society, and the meanings of human experience

in it, changes over time, and a notion of a fixed reality informing curriculum is equally unhelpful. They show how ‘the distinction between “constructivists” and “realists” is inevitably an over-simplification’ (Young and Muller, 2007: 178), and so their social realist theory of powerful disciplinary knowledge was developed (Young, 2008; Young and Muller, 2010).

The key point here is that Young and Muller’s (2007) attention to the values and morality of a curriculum based on truth and truthfulness underpins their argument for powerful disciplinary knowledge. They draw on Williams’s notion of ‘a “commitment to truthfulness” as a central tendency in current social thought that can be traced back to the Enlightenment’ (Williams, 2002, as cited in Young and Muller, 2007: 174). This commitment ‘lies in identifying the corruption of the powerful’ with ‘an eagerness to see through appearances to the real structures and motives that lie behind them’ (Young and Muller, 2007: 174). A moral dimension here is both personal and collective, relating to academic and professional identities through what Bernstein describes as ‘inwardness and inner dedication’ and a ‘humane relationship to knowledge’ (Bernstein, 2000, as cited in Beck and Young, 2005: 184). Marketisation and managerialism has amounted to an ‘assault on the professions’, argue Beck and Young (2005: 184), and commitment to truth has ‘faced unprecedented challenges to ... the validity of any ethical view of their calling’.

Young and Muller’s (2010) powerful disciplinary knowledge thus comes from a viewpoint that certain kinds of commitment to (specialised) knowledge are vulnerable to being corrupted, and they draw on an ethical case for commitment to truth. We acknowledge this, but while disciplinary knowledge has been the focus of curriculum studies research in the past decade or so, we argue that the values and ethical dimension to curriculum knowledge has become obscured. Further, we suggest a new ethical turn may be coming. We now explain why this is, by looking at a changed economic and political landscape.

After the 2008 global financial crash, UK government policy attempted to build ‘cultural literacy’ through a rigorous and ‘knowledge-rich’ curriculum, intended to make English education more competitive globally, and to put distance from the New Labour government’s emphasis on flexible skills over subject knowledge (see DfE, 2010; Mitchell and Lambert, 2015). Although welcomed in some quarters as bolstering subject knowledge in schooling, this Hirsch-inspired policy stirred up a renewed debate about what (knowledge) should be included in curricula and the teacher’s role in these decisions. From both government and subject communities, this ‘knowledge turn’ was a response to a perceived emptying of knowledge from curriculum (Mitchell and Lambert, 2015; Mitchell, 2020). We suggest that it is this provocation and opportunity to revisit subject knowledge that has been a catalyst for the focus on knowledge curriculum research.

At this point, it is helpful to acknowledge the breadth of what is included as subject knowledge. The Geographical Association’s curriculum framework (Geographical Association, forthcoming), led by Eleanor Rawling, grapples with this. In the draft framework, geography subject knowledge includes disciplinary knowledge (broken into geographical concepts, practice and application) and substantive knowledge (the full range of contextual and specific knowledge of the world around us). The existing national guidance for RE and the proposed ‘Religion and Worldviews’ curriculum (see DfE, 2010; Religious Education Council, 2018) include substantive knowledge in relation to the six major (and some minor) faiths in the United Kingdom, non-religious perspectives, philosophy and ethics, the role of composite worldviews at a personal and institutional level, and disciplinary approaches that include theology, philosophy, history and social sciences. We consider that all these aspects of subject knowledge have a relationship with values and ethical dimensions to curriculum. The breadth also includes the levels from early years to pre-university students. Our argument for bringing values and the ethical to light in considering disciplinary knowledge in curricula is relevant to the full age range.

Powerful knowledge is now an established term, and indeed it has been applied so widely that its original meaning may be distorted or appropriated. Powerful disciplinary knowledge originates in the argument that the specialised knowledge of disciplines, recontextualised into school subjects, allows children to come to know the world in ways they would not through everyday knowledge by inducting them into structured systems of thought (Young, 2008; Young and Muller, 2010). This argument was picked up in subject educational research, and in geography in particular, as the GeoCapabilities project illustrates (see Young and Lambert, 2014; Lambert et al., 2015; www.geocapabilities.org). More widely across school subjects, recent research interest in knowledge and curriculum has focused particularly on knowledge recontextualisation, epistemic quality, pedagogical content knowledge, *Bildung*-centred *Didaktik*, powerful disciplinary knowledge and a capabilities approach (see Deng, 2018). There has been attention to the transformation of disciplinary knowledge between and within educational networks to

reach the child in the classroom (Hudson et al., 2022), and a call to better understand the teacher's role in knowledge construction (Deng, 2021; Hordern et al., 2021).

At around the same time as Young and Muller were offering a notion of powerful knowledge as social-realist and progressive knowledge in subject disciplines, a more reactionary argument for knowledge in education was being put forward. Furedi (2009) and Ecclestone and Hayes (2009) were arguing that education had become therapeutic, undermining adult authority. Their case for a knowledge-based education saw the problem as one of moral confusion, as had Marsden (1997: 241), who neatly described the risk of geographical knowledge being diluted by 'education for a good cause', and also Standish (2009) in his critique of global perspectives. Standish (2009) argued that an ethical turn had taken place, with school subjects being used for the ethically motivated causes of environmentalism and social justice. He saw this as a form of moral authoritarianism, and at odds with a liberal humanist education, which should allow the individual to make up their own mind about ethical issues. We recognise this risk, but we do not see a new ethical turn as necessarily undermining disciplinary knowledge that can empower young people to think freely. Rather, we suggest that ethics and values can be more explicitly recognised from a critical perspective within the current debate about curriculum knowledge for a liberal humanist education and an Anthropocene-informed perspective.

Meanwhile, in RE, a recent disciplinary turn for the subject to leave behind confessional and pastoral legacies, and explicit prioritisation of theology, philosophy and social sciences, has embraced a 'worldviews perspective'. This has brought a selection of the academic parent disciplines, namely, theology, philosophy, humanities, and social and human sciences, as new lenses through which one can study a worldview (Ofsted, 2021). These endeavours have shed light on what is meant by subject knowledge, how it can be evaluated and how it is formed or recontextualised. A significant impact of this work has been to show that the subject teacher is pivotal in constructing knowledge and 'curriculum making' (Mitchell and Lambert, 2015; Hudson et al., 2022). What seems to us to be neglected, however, is directly addressing the values dimension in knowledge formation, knowledge recontextualisation (for and in the classroom) and application of that knowledge once the young person has left school. In all these examples of powerful disciplinary knowledge, power is placed in the disciplinary knowledge, and less explicitly on the values in relation to ethical perspectives.

Bernstein's (2000) recontextualisation of knowledge between academic disciplines and school curricula has been re-examined recently, including through the lens of epistemic quality (see Hudson et al., 2022) and through an in-depth examination of the case of geography (Fargher et al., 2021). This work is wide-ranging, but nowhere does it ask a direct question of whether or not a liberal humanist purpose to education is settled. We do not think it is settled, and we see this as significant because at the heart of powerful disciplinary knowledge the question should be asked: powerful for what ends? Inequalities, injustice and instability (highlighted recently by the COVID-19 pandemic, Black Lives Matter, climate strikes and geopolitical tension and wars) bring an ethical urgency to the present moment. Radical curriculum purposes for social change in an age of political polarisation need to be taken seriously, as well as examining if a liberal humanist education can or should exist in schools today. We also note that the recent draft government policy on climate change and sustainability (DfE, 2021: 12) explicitly states that teachers cannot encourage pupils to 'engage with specific political activity, such as protests'. The strategy's focus on science, geography and citizenship, limits it to particular approaches to knowledge. The absence of RE as a space to consider climate change and sustainability, and the lack of values consideration in the draft strategy, is a concern.

When social contexts change, a renewed examination of the purposes of schooling and curriculum tends to follow. The 'great debate' followed Prime Minister James Callaghan's 1976 speech, questioning if schooling and curriculum was fit for purpose after economic crisis and deep social change in Britain in the late 1970s and 1980s. This ultimately led to a prescribed national curriculum for England, a new level of accountability of schools and a curriculum rationale for economic competitiveness. Through the 1990s and 2000s, a competitive, neoliberal culture of examination result 'league tables', performativity and teaching to the test became established, with serious curriculum thinking and development pushed well down most schools' agendas.

New times may be heralding a watershed moment for schooling in England, and potentially worldwide, in terms of rethinking curriculum purpose. Just as the 1970s debate reimagined the English school system as accountable to government (with the prime purpose being national economic growth), so the 2020s may reimagine schools and curriculum with the prime purpose of human survival and well-being, from an ecological and biocentric imperative, linked more to conservation, economic stability,

health and equality, than to perpetual economic growth (see UNESCO, 2021). Three linked crises are occurring at once – crises of capitalism, ecology and globalisation. The first crisis is shown by increasing difficulties for capital to circulate effectively and to accumulate through profits (as the crash of 2008 illuminated). Second, there is a general ecological awakening, with increasing recognition that we are in the Anthropocene and must act as a matter of emergency for the survival of species and threatened environments. Third, globalisation has acquired a more real meaning with the COVID-19 pandemic, its spread across borders and our vulnerability, as well as our need to cooperate as a global community. These three elements or crises are interconnected and are likely to resurface severely in any ‘business as usual’ future, so they cannot be ignored (see Klein, 2015).

Challenging times for society raise debate in educational philosophy (and therefore in curriculum and knowledge), and can reveal alternative possibilities. The 1980s saw radical education briefly flourishing in geography education, with a sense of real hope that a curriculum for a fairer and greener society was possible. Neoliberal dominance in education then suppressed the idea that any other way is realistic in the 1990s and 2000s, but voices in geography education for hope are again emerging (see Hicks, 2018), and the prominent curriculum question may be shifting from ‘how can curriculum support economic growth?’ to ‘how can curriculum change the world for the better?’

Perhaps comparably, the pioneering Birmingham syllabus in 1975 was a watershed moment for RE when legislation caught up with evolving practice led by RE teachers. Previously a subject solely structured around Christianity, RE teachers developed a new curriculum that reflected the religiously and non-religiously plural adherents of their classrooms (see Parker and Freathy, 2011). More recently, the Cantel Report (2001), following social tensions in urban communities, produced the notion of ‘community cohesion’, which was subsequently absorbed into the ‘canon’ of aims and purposes of RE due to its religiously plural curriculum.

There are always alternative ‘curriculum ideologies’, and these rise to the surface in times of economic, political and social crisis (Schiro, 2008; Mitchell, 2020). The realisation that we are in the Anthropocene, and specifically the climate emergency, ‘changes everything’, in Klein’s (2015) words. The UNESCO (2021: 6) International Commission on the Futures of Education is also unequivocal: ‘at present, the ways we organize education and structure opportunity across the world do not do enough to ensure peaceful societies, a liveable planet, and shared progress that benefits all’.

This throws down a challenge to educationists to justify why and how subject disciplines are (still) the best basis for curricula. We are not trying to make a case for any particular curriculum ideology being superior to another here. We do acknowledge our leaning toward a social-reconstructionist position (education for a better world), blended with a liberal humanist belief in the individual’s agency and knowledge-power. Our point is that value systems imbue curriculum thinking at all levels, from government policy to teacher enactment, and therefore they must be given due consideration if disciplinary knowledge for educational purposes is to be better understood. Knowledge, however necessary, is only part of an education, and it must be accompanied by an education in and of values and ethics to be meaningful and lead to agency (see White and Reiss, 2013).

In the next section, we identify where there is a need for attention to values and ethics in some of the key areas of current research in knowledge and curriculum.

Addressing the hidden dimension in subject knowledge: some ways to consider values and ethics in curriculum

We agree that attention to the teacher, the child and the subject is needed for considering the ‘what’ of curriculum (as well as the ‘how’ of learning and measuring performance, which has come to dominate education). Further, Deng (2021) shows that *Didaktik*, *Bildung*, Schwab’s (1973) ‘the practical’ and Klafki’s (1995) concept of significance bring in subjective matters relating curriculum content to that which is good, leading to improvement for the child or the community, personal growth and freedom. However, we see in the debate around curriculum knowledge a relative neglect of making explicit how ethics and values are crucial to making sense of curriculum, and we find this question helpful: what (powerful) knowledge for what ends? This applies to curriculum as theory, practice and potential.

Perhaps in the current knowledge-focused landscape in both curriculum policy and research, values and ethics have become eclipsed by the enthusiasm for a renaissance of disciplines through powerful disciplinary knowledge. Deng (2018: 180) draws on Schwab (1973) to highlight the potential of the

curriculum to develop ‘intellectual and moral powers (understanding, dispositions, capacities)’. Deng (2018: 163) argues that it is not enough for teachers to understand subject knowledge through their discipline, but that they need to consider its educational potential: ‘What do teachers need to know and be able to do [with the curriculum] ... for the purpose of developing powers or capabilities?’

In answer to Deng’s (2018) question, we suggest that the teacher needs to know how the vague concept of ‘powerful’ disciplinary knowledge breaks down into more accessible conceptual tools that the learner can put to some explicit use. One example of such tools is the five-fold typology of powerful disciplinary knowledge produced by Maude (2018: 180–1) for geography, which conveys the essence of powerful disciplinary knowledge in geography as an enabling power: ‘[Powerful disciplinary knowledge] enables young people to discover new ways of thinking, to better explain and understand the natural and social worlds, think about alternative futures and what they could do to influence them.’

But alongside this breaking down of powerful disciplinary knowledge into something more practical, the teacher needs to hold an ethically defensible curriculum value position, so that they know what they are trying to do with curriculum knowledge. Or to put it in Schiro’s (2008) terms, they need a curriculum ideology and the opportunity to develop it (see Standish and Mitchell, 2022).

Deng (2018) draws particular attention to the capabilities approach and *Bildung*-centred *Didaktik*. These are both futures-oriented ways to view subject knowledge. Capabilities, because it emphasises educational potential as an enabling power or freedom for the individual to make choices, and subject *Didaktik*, because it considers the future significance of knowledge for the learner (Klafki, 1995). Emphasising the future steers the gaze of both educational researcher and teacher toward the ethics and values around curriculum knowledge. The effect of doing so is to ask (whether tacitly or explicitly) what good will knowing this do (for the learner/for society)? Although it seems instrumentalist, this (inconvenient) ever-present question should not be ignored. Both powerful disciplinary knowledge and a knowledge capabilities approach invite it.

Further, we might usefully ask, what values and ethical requirements must be fulfilled for the knowledge in subject disciplines to have ‘power’ as an educational resource? Lambert and Morgan (2010) argue that a capability perspective on geography in education can contribute to young people’s propensity and disposition to think about alternative social, economic and environmental futures – their freedom to think through access to subject disciplinary knowledge. Knowledge is not enough, however, unless accompanied by some set of ethical criteria, by which the individual can apply that knowledge to making choices. This puts the knowledge–ethics/values relationship sharply into the spotlight. Yet there is insufficient attention to this relationship in the knowledge debate, as Bladh (2020: 216) points out: ‘a more developed philosophical position in relation to the “powerful knowledge” discussion is desirable in questions of judgement rationality (Moore, 2013). A geography curriculum for the Anthropocene will have many “wicked problems” to handle, which need a more grounded position on ethics’.

Theories of Future 3 curriculum (F3) and powerful disciplinary knowledge invite an exploration with an ethics lens. There has been some attention in subject research communities to deconstructing these theories, which draws attention to engagement and potential action. One example, in geography education, is Maude’s (2018) typology, as we have mentioned. But, again, we suggest that there is a hidden question implicit here – what ethical or values judgements are involved in the learner thinking about the alternatives which the powerful disciplinary knowledge opens up – and how will she develop these? To help answer this, we suggest that, first, powerful disciplinary knowledge itself is imbued with ethical and values dimensions that can help make sense of alternative positions – much as Slater (1996: 200) described the geography curriculum as ‘shot through with values’. The disciplines themselves are not neutral, but are human constructions formed in political-power contexts. Second, students need separate conceptual tools and reference points in order to make the ethical, values and moral judgements for the sort of thinking Maude (2018) describes. We see a curriculum role in developing these conceptual tools in a values education, in ways that have been emphasised in geography by Slater (1996) and Roberts (2013).

Curriculum discussions within RE are considerably less developed in terms of powerful knowledge and powerful disciplinary knowledge than previously described in geography. This is perhaps due to the contested natures of knowledge and disciplinary aspects of the subject. RE is far from settled in its epistemological nature: questions of how one might ‘know’ religious phenomena yield different results, according to the disciplinary lens and pedagogical approach. For example, a religious doctrine, philosophical ethical dilemma and the experience of being in a place of worship are all very different kinds of curriculum knowledge, and yet all form part of the RE curriculum. The unique position of

RE as outside of the (English) National Curriculum affords schools curricular autonomy. The national variety within the subject is also explained by the subject's structure around the variously interpreted aims and purposes of the subject, ranging from, but not limited to, moral development, community cohesion, critical assessment of truth claims and religious literacy. A source of frustration for its critics, Chater (2020) identifies three challenges, all of which relate directly to powerful knowledge and powerful disciplinary knowledge. These challenges are for the subject to: (1) create a credible academic rationale; (2) be liberated from political and economic control of faith groups and exam boards; and (3) represent the religious and non-religious pluralism of the classroom and global populations. The overlaps of all three challenges might reveal RE's current incapacity to meet the needs of an Anthropocene-informed curriculum. In more optimistic terms, an ethical and academic RE curriculum has the potential to meet the needs of marginalised concerns for ecological citizenship that might be seen in terms of powerful knowledge.

There is an emerging interest in some corners of the RE community in what powerful knowledge in RE could be. Kueh (2020: 144) calls for a balancing of: (1) the disciplinary epistemologies; and (2) the 'knower', and laments this 'under-theorised dimension of the knowledge debate'. Kueh is referring to what Young (2008) has called 'everyday knowledge', and this area is certainly where personal values and ethical dispositions exist. Indeed, the fertile relationships between expert and everyday knowledge are expounded in notions of 'epistemic literacy', whereby literacy is a capability to navigate different 'knowledges' in the curriculum and enacted curriculum (Pearce et al., 2021; Stones and Fraser-Pearce, 2022).

We hope we have shown a need and some perspectives for revisiting how values and the ethical relate to knowledge and curriculum. We now move on to look more closely at the key role of ethical disposition in exploring curriculum knowledge for the Anthropocene.

Discussion and recommendations: ethical disposition, interdisciplinarity, values and knowledge

Giroux (2020) warns of the pedagogical effects of neoliberal culture with profound moral and political contradiction at its core, the rewards of anti-intellectualism through celebrity, and the effects of dehumanisation and self-reliance that result in political retreat. Curriculum has the potential to subvert this trend, but only if a critical ethical disposition is central to its formation, and is nurtured in teachers and learners as a result. Geography and RE are not currently meeting the needs of an Anthropocene-informed perspective, and yet they have the potential to do so in collaboration. We propose that a possible approach to reform lies in reinvigorating the social realist foundation of Young's (2008) powerful knowledge, intended to subvert the knowledge of the powerful and for the unimagined to be imaginable.

The problem we seek to address is that academic disciplines and school subjects are rooted in the questions, concerns and structures of eighteenth-century Europe – namely, positivism underpinned by extractive mercantilism and imperialism (see White, 2007). The Anthropocene is an indictment on these enacted values and priorities which has implications for the nature and knowledge structure of subject disciplines. Our intention here is to evoke the social realism of the current knowledge and ethical issues surrounding the Anthropocene, in an effort to construct an appropriate subject-based curriculum.

Hordern's (2021) examination of the sociological origins of powerful knowledge reveals that specialised knowledge is powerful when it can be revised in response to emerging needs in ways that resonate with the knowledge community. Such needs have historically included calls for technical efficiency, defence, production and expansion, and paradigm shifts known in public life through the revisability of language, technology, health and science. Although not a school curriculum scholar, Hordern's (2021) insights have significant implications for school curriculum reform and our claim that powerful disciplinary knowledge can offer a curriculum response to the complexities of the Anthropocene.

We recognise that demands for change depend on subjective perceptions of the nature and purposes of subjects, and education in general, all of which raise issues of power (im)balance. Hordern highlights this problem in his identification of the tendency of subject communities to maintain imbalanced power structures 'that can suppress radical new ideas' (Hordern, 2021: 6) due to disciplinary communities' "'internal rules of solidarity, hierarchy, and truth norms" ... [expressed as] "this is what

we do" represented by the differing "internal material cultures" (Young and Muller, 2010, as cited in Hordern, 2021: 7). Bernstein (1999) spotlights the boundaries of subjects as a clear manifestation of these rules: they maintain authority over what is 'in' or 'out', pertinent or irrelevant, or suited to another subject. Hordern's (2021) identification of Young and Muller's understandings of specialist subject knowledge being the capacity to adapt and be revised is pertinent for the structural boundaries between geography and RE, in order to address the Anthropocene.

The Anthropocene is super-complex, and we hope to make the case that, in disciplinary terms, it requires an understanding of its geographic, historical, geological, sociological, cultural, economic, social, philosophical and religious dimensions. On a personal level, the existential impacts of contemplating the epoch might be felt in one's philosophical, spiritual, ethical, moral or political outlook (see Monastersky, 2015). This potential disruption could affect the religious and non-religious person, and it needs to be considered by the educator as a duty of care. It is not difficult to see that to leave out the role of affect, or the existential impact of studying the Anthropocene, continues a scientific materialist ontology and individualist philosophy that has, arguably, led to an extractive, exploitative and capitalist drive considered to have contributed to the Anthropocene.

There is a regrettable irony in studying the Anthropocene and excluding the emergent, ethical and existential dimensions. An antidote to this could be to learn about the Anthropocene through an investigation of the notion of ecological interconnectedness in such a way that the boundaries between geography and RE are problematised. This has pedagogical and ethical potential through the inclusion of religious and non-religious themes of karma, stewardship, animism, responsibility and social justice, which relate to curriculum areas of human and physical geography, as well as to RE. This example highlights how an ethical approach to teaching the Anthropocene leads to a revision of the subject boundaries of geography and RE, which in turn redefines their respective powerful disciplinary knowledge in relation to each other.

So how can powerful knowledge lead us to values? One might reject such a project as moral authoritarianism, or make accusations of instrumentalisation of subjects, which is why we stress the importance of a critical ethical disposition to avoid normativity. This is analogous to an ethical literacy (Lovet, as cited in Arweck and Nesbitt, 2004) which mitigates normative approaches to values, and points more to the capabilities and agency of the student. Furthermore, it is teachers' agency, grounded in their critical ethical disposition, which will guide their curriculum choices. This would allow them to question the traditional boundaries of subjects (what is 'in' and 'out') and to reveal the unasked questions and silenced perspectives that emerge from a critical ethical disposition.

Interdisciplinary freedom informed by values might be understood as praxis for the teacher. If the mechanisms of the formation of the subject and its boundaries, and the educational values at play, are made visible, then the teacher's and student's agency is enacted through their interrogation therein (Stones and Fraser-Pearce, 2022). For example, the teacher might make the provenance or socio-epistemic culture of the knowledge in the curriculum explicit to students. A pertinent example would be to introduce Indigenous knowledge and critical race theory in an interdisciplinary account of the Anthropocene when studying scientific and religious understandings of creation, or trade and agricultural methods. The student's agency is to critically engage with the values at work within settled concepts such as 'progress'. Students would have agency in their interrogation of these concepts and the 'story' being curated by different knowledge structures and subject delineations.

We realise that this is uncharted territory in disciplinary terms, and yet there is resonance with the proposals of a Future 3 curriculum (Young and Muller, 2010) in which the contestability of subject boundaries is what makes knowledge powerful. Perhaps there is curriculum potential for hybrid disciplines such as geopolitics or eco-science as examples of recent human agency to create more holistic and revised forms of knowledge to respond to new contexts. Too rigid subject boundaries can reinforce the knowledge of the powerful, while limiting agency, as Young and Muller (2010) articulate through the Future 1 heuristic. Powerful knowledge requires new lines of thinking. Perhaps the dialectical relationships between critically ethical, values-literate, intergenerational and interdisciplinary perspectives have the potential to meet the urgent problems of the present and future in ways that have not yet been imagined.

We insist on not throwing the baby out with the bathwater in a critical purge of powerful disciplinary knowledge; rather, we argue that recent research focus on disciplinary knowledge in education, while important, has underplayed the values dimension. We suggest that a focus on critical ethical disposition and interdisciplinarity can draw attention to how powerful disciplinary knowledge is connected to values.

This attention can inform further examination of how disciplinary knowledge has potential in an age of environmental and social crises (and how it might be put to use in future).

This is a political matter, of course, and an education for social justice, of the sort called for by Young and Lambert (2014) in the knowledge-oriented 'future school', is not one of indoctrination, but of opening new ways of seeing for participation in the debates of the day. We agree with a principle of knowledge as power. This can be to make better meaning of everyday life, as well as the complex issues faced by society. But the question remains, with an education rich in powerful disciplinary knowledge, what choices will the individual make? And, alongside this, what is needed, both in curriculum and wider society for powerful disciplinary knowledge to give the individual real choice, agency and the capability to act ethically? In light of the challenges of sustainability and social justice in the Anthropocene becoming ever more real, we consider these questions to be urgent for educational researchers.

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Research ethics statement

Not applicable to this article.

Consent for publication statement

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Conflicts of interest statement

The authors declare no conflict of interest with this work. All efforts to sufficiently anonymise the authors during peer review of this article have been made. The authors declare no further conflicts with this article.

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