

International Research in Geographical and Environmental Education

ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/rgee20>

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To cite this article: David Mitchell (2022): GeoCapabilities 3—knowledge and values in education for the Anthropocene, International Research in Geographical and Environmental Education, DOI: [10.1080/10382046.2022.2133353](https://doi.org/10.1080/10382046.2022.2133353)

To link to this article: <https://doi.org/10.1080/10382046.2022.2133353>



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Published online: 14 Oct 2022.



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GeoCapabilities 3—knowledge and values in education for the Anthropocene

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ABSTRACT

The GeoCapabilities project asks how powerful geographical knowledge can be brought into a curriculum to enhance students' capabilities to be free to make choices for a life they value. This paper reports on the GeoCapabilities phase 3 project which explored the social justice dimension of GeoCapabilities by working with teachers and students in challenging schools. The capabilities lens, made practical through tools for curriculum making and evaluation, shows how geographical knowledge (of migration in this case) can enhance a person's capabilities to make real choices about how to live. It also shows that the affective dimension is strongly connected to geographical knowledge including feelings, moral standpoints and values. The inequalities, injustices, fears and hopes raised when students engage with migration geography, open a space for thinking about problems, causes and alternative futures, inviting a critical lens to how political economy shapes the world. The literature and the project of GeoCapabilities have focussed on powerful disciplinary knowledge. Whilst geographical knowledge is a crucial component, I argue that an exclusive attention to disciplinary knowledge may be misleading and the concept of geographical capabilities should broaden to attend to how knowledge across disciplines, feelings, attitudes and values operate together for futures-oriented capabilities.

KEYWORDS

GeoCapabilities;
Anthropocene;
education; knowledge;
values

Introduction

This paper reports on some of the findings of the latest phase (phase 3) of the GeoCapabilities project (GeoCapabilities 3) and particularly on how the ideas and practices of a capabilities approach can develop further towards an educational aim of everyone living and thriving in the future. GeoCapabilities is the positioning of the discipline (geography) within a human capabilities framework of education. It means exploring how geographical knowledge can contribute to the capabilities young people need both to live a life that they themselves value, and which does not threaten the flourishing of others' lives in the future.

My main argument in this paper is that GeoCapabilities (understood as geographical knowledge used to develop human capabilities for living together in the

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Anthropocene era) is served by engagement with emotions and values as well as disciplinary knowledge. This combined engagement opens the door to critical thinking for young people, which can reveal hidden structures—a deeply “powerful” knowledge for school geography (Huckle, 2019). This is not to downplay the importance of disciplinary knowledge in geography education, but rather to reconsider what conditions are needed for school geography knowledge to be powerful. I locate my interpretation of GeoCapabilities in a future 3 for curriculum (see Young & Lambert, 2014; Young & Muller, 2010), although I do not want to rehearse their argument for a progressive knowledge rich curriculum of engagement for the learner in this paper. Rather, working with teachers and their students in GeoCapabilities 3 shows that the values dimension may be something of a blind spot in the recent discourse of powerful knowledge in school subjects (see Mitchell & Stones, 2022). The values dimension includes what counts as geographical knowledge (in discipline and school subject) as well as the values-laden choices a person makes with the geography or powerful disciplinary knowledge (PDK) they have acquired.

In the sections that follow, I first summarise the contributions of the GeoCapabilities project phase one and two, to put phase three in context. Some findings from phase 3 are then explored before considering the further potential of GeoCapabilities for the Anthropocene. Drawing from a body of literature which illuminates how political economy and capitalism shapes thought and actions (in all aspects of life, including education) I suggest that engagement with values has been under-represented in the discourse around PDK (how knowledge is educationally powerful). I conclude with some further research directions.

What has the GeoCapabilities project achieved so far?

The project sees geographical knowledge as a powerful educational resource when the child’s needs are foregrounded, enabling them in many ways—for example to participate in big debates, sort truth from fiction, know their world at different scales and to open real choices about how to live. The project has achieved a considerable amount in three phases. The first phase (2013–15) developed a theoretical basis for arguing the potential of Geographic Capabilities. In this phase the discipline of geography was connected to ideas of human capabilities (Nussbaum, 2011; Sen, 1999) by asking questions such as “In what ways is human development diminished if geography is absent or poorly provided for in formal education?” (Lambert, Solem, & Tani, 2015, p. 2). This phase reinforced the importance of teachers as “curriculum makers” emphasising the needs of the child (who are the children we teach?) and the “powerful disciplinary knowledge” (PDK) of geography (what should we teach and how?).

This phase also established a way of thinking about “subject knowledge” in GeoCapabilities through PDK as disciplinary but also dynamic, open and evolving—a “future 3” version of curriculum. This adopts a social realist view of knowledge, that has disciplinary boundaries, but which allows shaping by changes in society and young people’s needs (see Young & Muller, 2010). Phase two (2015–18) developed online professional development materials for teachers to

understand these nuanced ideas of subject knowledge, curriculum and education for human capabilities and put them into practice. It did so by developing a series of modules with exemplars for teachers (these are still relevant and available) and showed the potential of GeoCapabilities to shift schools' emphasis from attaining exam results to a more meaningful education or from "outputs to outcomes" (Bustin, 2019, p. 161).

Phase 3 (GeoCapabilities 3) sought to test the theory and approach in practice by working with teachers and students in challenging schools in different national contexts. Partners were the non-governmental organisation Eurogeo, plus six university partners, each with two or three associate teachers in state schools in England, France, Belgium, Netherlands and Czechia. The schools are in low or mixed socio-economic catchment areas affected either directly or indirectly, by de-industrialisation and migration. The socio-economically disadvantage of many students in these areas can put pressure on schools and teachers to compensate for fewer opportunities than in more wealthy and privileged areas. Accountability for exam results limits curriculum making freedom in these schools (see Mitchell, 2020) making them good sites to see if GeoCapabilities can make a difference to young peoples' freedom to make choices about how to live. The project focussed on a single geographical topic of migration, in essence asking—how helpful is GeoCapabilities for teachers in schools under pressure?

Methods

Methods for my research in this paper have an overlap with the aim of the phase 3 project itself which was to develop a methodology to evaluate teachers' and students' access to PDK. The next section, therefore is titled "findings" and explores how far teachers were able to develop and use GeoCapabilities as a methodology for making and evaluating the part of their curriculum dealing with migration. This paper interprets some of the project findings from my position as the principal investigator for GeoCapabilities phase 3. The findings informing the discussion draw from three accounts of curriculum making by associate teachers working on the project in English schools (school A, B and C). The accounts were co-constructed by the teachers, their students and myself through meeting, planning, teaching and evaluating their curriculums on the topic of migration. The joint reflections from meetings held with the other six partners on the project 2018–2021 also inform the findings. My closeness to the project makes this one interpretation of an aspect of the project, but the aim of this paper is to offer some reflections and exploration of a direction for researching and developing GeoCapabilities, rather than a full case studies report of the project (for the latter see <https://www.geocapabilities.org/geocapabilities-3/>).

The key research questions for GeoCapabilities 3 were:

- How can tools be developed to evaluate teachers' and pupils' access to PDK?
- What are the opportunities and barriers to GeoCapabilities for social justice (in schools serving mixed or lower socio-economic areas?)

Findings: GeoCapabilities 3, towards a methodology for evaluating access to PDK

A set of underpinning theories helped teachers adopt a GeoCapabilities approach. These include the curriculum making model (Lambert & Morgan, 2010) a “future 3” curriculum and the notion of powerful disciplinary knowledge (PDK) as a progressive form of knowledge (Young & Lambert, 2014; Young & Muller, 2010) and Maude’s (2016) typology of PDK in Geography, Nussbaum’s list of ten human capabilities (Nussbaum, 2011) and subject didaktiks, including Klafki’s (2000) notion of content “significance.” However, these concepts are abstract and somewhat removed from the teachers’ practical planning. They need translating into practical steps for (or by) teachers. To this end, GeoCapabilities phase 2 strategies were used and extended. Engagement with the discipline was supported by writing a “vignette” (a short explanation of the PDK of Geography within a topic to be taught) and developing a “curriculum artefact” (a key resource on which a sequence of lessons is built). Anecdotally, these strategies have been well received by geography teachers in professional development, although there is little empirical work on this to date (Solem, 2020).

The GeoCapabilities 3 project team built on this process by developing GeoCapabilities as a “toolkit” for teachers (Figure 1).

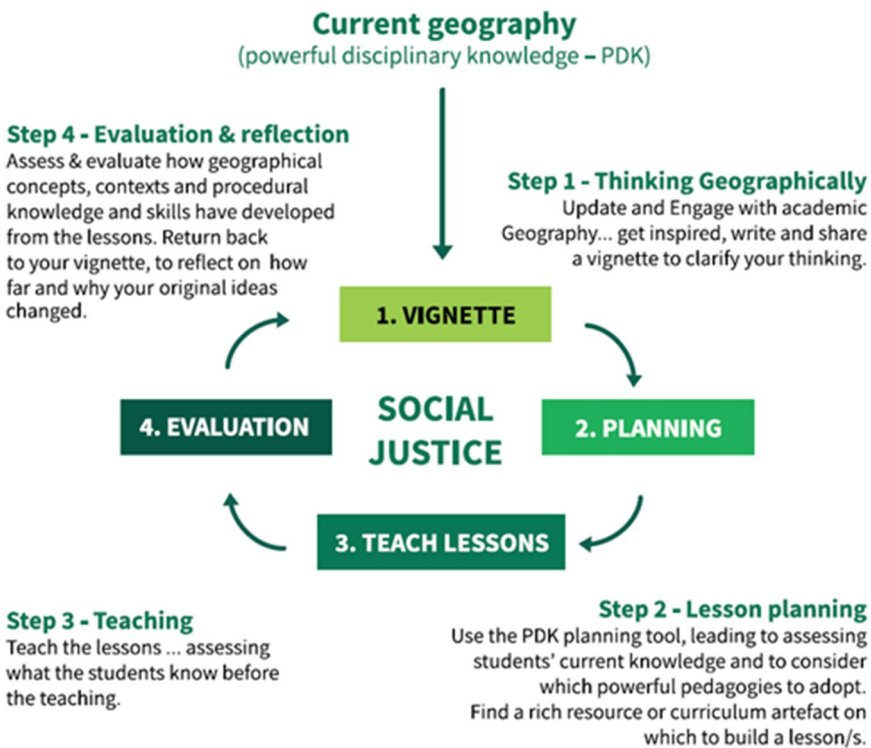


Figure 1. GeoCapabilities as a ‘toolkit’ for teachers. Source: <https://www.geocapabilities.org/geocapabilities-3/>.

In step one, engagement with academic geography from the seminar lead the teachers to re-think their aims for teaching migration and these were expressed in their vignettes. Teacher A wanted to turn around the notion of migration as always into the United Kingdom (UK), to look at emigration out of the UK by using identities and a nuanced conception of “home.” Teacher B wanted to challenge the stereotype of migration as single long journeys from poor countries to rich countries, by using the concepts of complexity in space and time and interdependence. Teacher C sought to unsettle the problematic idea of “inside” and “outside” as place making factors by increasing students’ encounters and re-encounters of “place” as a many-layered concept. The migration geography vignettes written by teachers in phase 3, including these and the other European countries’ associate teachers are wide-ranging in content and a stimulating resource for teachers, available at <https://www.geocapabilities.org/vignettes/>.

In steps two, three and four (planning, teaching and evaluation) the project team applied principles of: involving the students in the process at all stages by assessing their knowledge and ideas before, during and after the teaching; developing the teachers’ PDK as part of the GeoCapabilities process; incorporating a breadth of theory on what constitutes “powerful knowledge” in geography; “powerful pedagogies” and enquiry (Roberts, 2017) and analysing with common protocols (such as specific questions, focus groups and concept mapping) in evaluating PDK—though allowing for some flexibility between partners and teachers.

The breadth of theory referred to here on what constitutes PDK reflects the construction of GeoCapabilities as an amalgamation of Geography, education and human development (as capabilities). None of these ideas is easy to define, indeed, each could be considered a “wicked problem” on its own, nor is the amalgam of these ideas into “GeoCapabilities” straightforward. Of particular note is academic debate over what constitutes “subject specialist knowledge” in education (see Deng, 2018). Therefore, it seemed appropriate to bring a range of theory to evaluating students’ and teachers’ access to PDK whilst remaining pragmatic on which theoretical tools could be adapted for practical use. Not all partners opted to use Nussbaum’s (2011) list of capabilities directly to inform an evaluation tool, but the project team agreed on using Maude’s typology of PDK (2018), Klafki’s (2000) questions relating to the significance of content and a planning tool (template) which was used before and after teaching, to allow evaluation of teaching. Béneker’s (2018) four-fold model of powerful knowledge in geography provided theoretical basis and was adapted by the teachers into the flexible planning tool which teachers could adapt to a particular aspect of migration they were teaching and children could make sense of (Figure 2).

The planning tool was combined with a student focus group and concept mapping exercise with students, using a common set of questions and key words cards (allowing for some flexibility). The focus groups were deliberately held approximately one month after the completion of the teaching on migration and the planning tool. This was to evaluate deeper learning, after a period of time had elapsed. For the concept-mapping exercise, teachers used a common set of terms, with the flexibility to add additional terms (Figure 3). Students discussed the terms, spreading them out on a surface, and drawing and annotating connecting lines between

<p><u>Key terms</u></p> <ol style="list-style-type: none"> 1. What does the word home mean? 2. What is migration? 3. What is the difference between immigration and emigration? 	<p><u>Specific geographical knowledge</u></p> <ol style="list-style-type: none"> 1. What facts do you know about migration? 2. What countries do people from England migrate to? 3. Why do people make a home in these countries?
<p><u>What's this got to do with the world outside the classroom?</u></p> <ol style="list-style-type: none"> 1. Is emigration an important issue? 2. Should people be able to make their home wherever they choose? 	<p><u>How do we find out more?</u></p> <ol style="list-style-type: none"> 1. What do you think are reliable or trustworthy sources of information about migration? 2. What do you think are unreliable or untrustworthy sources of information about migration?

Figure 2. An example of the planning tool based on Béneker (2018).

Rural-urban migration	Home	Safety	Resources
Money	Push Factors	Asylum seeker	Borders
Freedom	Contribution	Relocation	Citizenship

Figure 3. Terms used for concept mapping exercise, one month after teaching about migration.

concepts. To facilitate the discussion, the teacher (and partners where they were present) used a set of pre-arranged questions, with flexibility to extend these to prompt and extend the students' talk about migration.

The teachers found concept mapping to be a rich tool to help evaluate access to PDK. The physical connection (drawing of lines) and grouping of words encouraged students to articulate geographical concepts and contexts they had learned. There was also notable discussion of the affective dimension (their feelings and attitudes around migration and migrants). Focus group concept maps were photographed and the discussions were recorded and transcribed. These data were then analysed using Maude's typology (2016) and Klafki's (2000, pp. 152–155) questions about content significance, accessibility and structuring to summarise and distil the raw data. Some teachers also directly used the relevant parts of Nussbaum's list of human capabilities in this analysis. This produced an account of the development of the PDK of migration geography for each group of students. In keeping with subject didaktik and curriculum making theory, the

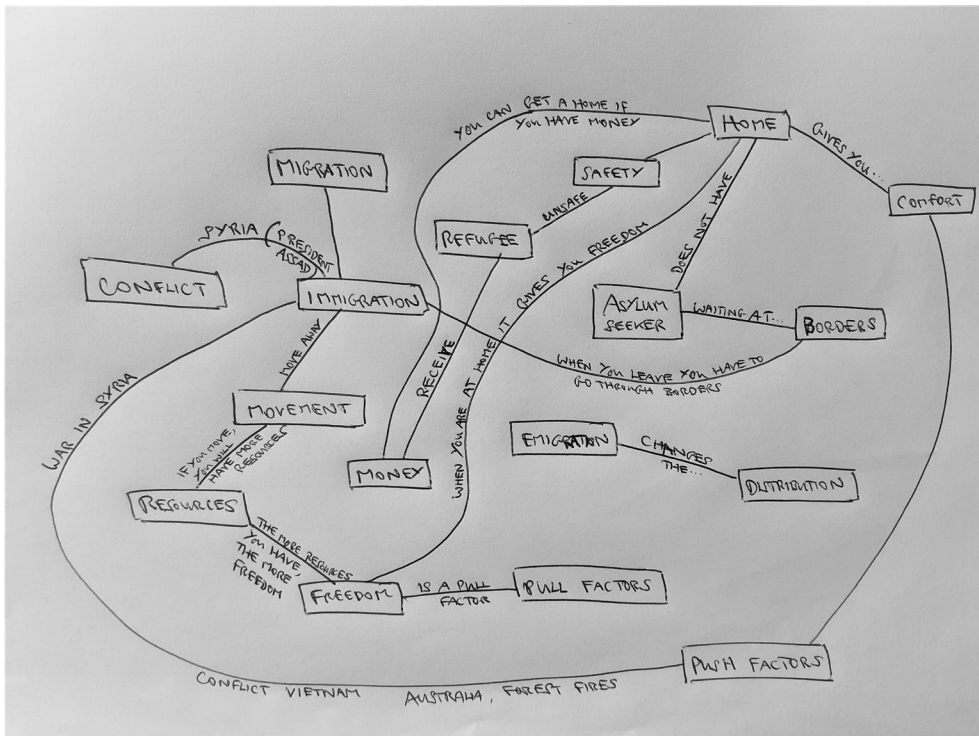


Figure 4. A concept map by a group of 11–12 year old students, school A (copied from original).

principle of teacher-student-subject interaction was followed, as accounts were (in the focus group discussions) co-constructed between teacher, students and university partner.

For some of the younger students, the concept maps appear quite basic and sometimes terms are confused, such as immigration and emigration (Figure 4). But more important were the conversations the concept mapping facilitated. A low level of written literacy is a barrier for some students, but in talk, supported by the concept mapping, these students were able to explore and articulate concepts such as home, freedom, migration, conflict, resources and how these inter-relate.

Discussion

Revealing the knowledge-values interface

The first finding was that tools to evaluate the access to PDK are feasible and can be modelled and reproduced for other teachers to use, as the methodology presented in the previous section showed. A second finding was that the teachers' curriculum making, and their knowledge and understanding of PDK, subject didaktik and curriculum making grew through a GeoCapabilities approach in steps of collaborative engagement with the discipline of Geography, developing curriculum "artefacts" and building lessons around them, and evaluating PDK development with the involvement

of students. Conversations and semi-structured interviews with the teachers showed that they valued the opportunity to collaborate with like-minded geography teachers, teacher educators and particularly by direct contact with academic geographers. This was despite no funding to give the teachers time. They participated willingly as part of their professional work as geography teachers. The re-engagement with the discipline afforded by the GeoCapabilities approach should be encouraged (Mitchell, Whittall, Dickinson, & Eyre, 2021). A third finding was the importance of the knowledge-values interface when a GeoCapabilities approach is applied to teaching migration. In the following discussion I explore these findings, in particular I aim to show the significance of values and the affective within and connected to PDK when a GeoCapabilities approach is applied.

The teachers and their students developed rich conceptual and contextual understanding and knowledge of Geography through the GeoCapabilities approach. The use of Maude's typology both prompted planning for, and allowed evaluation of, Geography's underpinning concepts of space, scale, place, interconnection and environment. The example below shows how 11–12 year old children developed Maude's "type 1"—powerful knowledge of geography, in relation to geographical concepts of "connection" and border allowing new ways of seeing.

Students made connections between places and events (e.g. Syrian civil war, conflict, emigration, movement, freedom, 'home' and comfort/safety). 'Connection' was also understood in terms of places that aren't connected and are separated by borders. Students showed a good understanding of the physical borders and recalled the structures that stop places being connected. (Teacher A)

The accounts (such as this excerpt) show students developing their capacities to analyse with concepts and to think critically about evidence, to build trustworthy knowledge. The accounts also show students became better equipped to participate in big social debates. In some cases, this was beginning to happen in the migration lessons and evaluation focus groups. The more unexpected or new aspects of geography in the accounts from the teachers involved in the project are particularly illuminative.

The initial seminar at with teachers and academic geographers introduced recent research trends in geography research. This, discussed in the teachers' context, brought three geographically connected concepts of migration to light, which were previously under-represented in the teachers' migration lessons. Then, vignette writing, lesson planning, the teaching itself and evaluations that followed developed and explored these concepts as the teachers' curriculum making. The first concept is "home" and what it meant to be influenced by factors from "inside" and "outside" the place a person considers home (Wilkins, 2019). This can be seen as a more interconnected and globalised sense of place. Secondly, related to this concept of home, and also prominent in the accounts is a conception of (a shared) "humanity" often expressed as "me" or "we" in relation to "the other." The students were taught through (and talked about) stories of people's real lives in very personal ways, "putting themselves in another's shoes" and drawing on their own experiences, hopes and aspirations. Third is a concept of complexity (Castles, de Haas, & Miller, 2020). This manifested through migration as complex, stepped, multi-scale

in place and time, back and forth and personal. A notion of the network was a part of this understanding through maps and looking at movements at different scales in space and time. A way of describing the significance of the concept of geographical complexity, is by its prior lacking in students' thinking—simplification, overgeneralisation and stereotypical thinking, for example assuming that all migrants are refugees.

All three of these concepts—home, humanity and complexity were connected to feelings of empathy. 11–12 year olds in school B, were energised by the personal story of a young Ukrainian woman. Her story of migration was complex, stepped and sporadic. The example was used by the teacher as a way to teach this concept of complexity, connection and scale of migration. It was striking how the children described feeling inspired by this migrant's story, one boy said that he hadn't imagined that he could or would want to live anywhere else, but now he felt it was possible and he would like that "adventure." Teacher A expressed the significance of empathy. This was described alongside geographical knowledge (in particular the concept of "border" in relation to movement, freedom, safety and home) on several occasions in her evaluation, for example:

Students were passionate about issues faced by refugees and migrants around the world. The concept of refugee and asylum seeker provided lots of discussions in lessons about what is right and wrong and fair or not...Learning about refugees and asylum seekers through an empathetic lens will encourage students to challenge stereotypes and think critically about migration. (Teacher A)

...it's just really sad, there were woods and loads of camps near the border fence...to see them maybe get shot down....it was just so sad... 11 year old, school A)

In another school, children began to express injustice and concern for fairness and humanity, wanting to know more about reasons and causes.

I'd like to know why people get turned away, if (the authorities) know their situation is really bad and if they go back something really bad might happen to them... (12 year old, school B)

In school C, older students, writing in a more academic tone in essay work, critically engaged with place-making and migration, critiquing concepts of insider and outsider identities by being introduced to concepts as racial capitalism and non-elite cosmopolitanism. This opened up debate in the classroom about social justice linked to migration.

Peter Rachman exploited the Windrush generation in the 1950s. These were Jamaican migrants moving to Notting Hill due to labour shortages after the Second World War. They needed housing and he exploited them by dividing up large Victorian homes into small flats and charging extortionate prices for them which is called racial capitalism. (17 year old student essay extract, school C)

GeoCapabilities is about geographical knowledge and what possession of that knowledge, can do for the student. The project findings suggest that a GeoCapabilities approach leads to geographical concepts being foregrounded more intensely in teachers' planning and curriculum making. Geographical concepts also extend and

deepen through students' explanations of migration events and phenomena. However, it is the less obvious aspects of PDK, the affective and the values-rich aspects which come to light here. A combination of conceptual knowledge from the discipline of geography, specific contexts explored and young people's emotional and values encounters with these geographies may be significant to allow that the young person's capabilities begin to form. In other words disciplinary knowledge alone is not enough, and so the notion of "powerful disciplinary knowledge" (PDK) may be obfuscating the knowledge-values dimension to capabilities.

There is some resonance here with a public debate held at UCL-IOE in 2014 between Michael Young (arguing that PDK is the essential ingredient of a school subject) and Margaret Roberts (arguing that attending to students' everyday knowledge, experiences and interests is necessary to make knowledge powerful). Roberts uses the phrase "powerful pedagogy" to make her point (Roberts, 2017). In school geography topics like migration, students draw on their everyday experiences, interests and ideas in values-laden personal explorations. The interweaving of these personal perspectives with PDK warrants attention to understand how students' geographic capabilities develop.

Knowledge, values and emotions are not easy to separate when it comes to curriculum construction following subject didaktik theory (see Deng, 2018). This may be particularly so in the humanities subjects (Bladh, 2020). Nonetheless, there is a viewpoint that the affective and emotional undermines the authority of a knowledge-rich education. These arguments include that too much affective concern becomes "therapy" rather than education (Ecclestone & Hayes, 2009). There has also been a critique of curriculum distortion by "good causes" (Marsden, 1997) and as political when wider global issues become centre-stage in geography lessons (Standish, 2012). But these arguments do not recognise that subject knowledge is co-constructed following subject didaktik theory (Klafki, 2000) curriculum making (Young & Lambert, 2014) and geographical enquiry (Roberts, 2003). Historically, there has been much work in geography education exploring and justifying the place of values in a school geography curriculum (see Mitchell, 2018).

The argument for adult authority and downplaying alternative values positions that can alter the view of subject knowledge, tend towards a "future 1" curriculum viewpoint. This is, therefore, at odds with a GeoCapabilities approach, which sees rigorous and powerful subject knowledge in a "future 3" curriculum and recognises the student's role in how curriculum content is shaped. Even so, the intense individualism in late capitalist society, which is both a narcissistic and competitive trait, has permeated schooling (Hartley, 1997) and this should be recognised for how it can influence the teacher's choices and shape a progressive curriculum. This does not mean the teacher inevitably becomes a therapeutic educator, nor need they become excessively exam results driven but late capitalism encourages "hyper-socialised" curriculum enactment in which the teacher is at risk of losing their control as the curriculum maker (see Mitchell, 2020).

Emotional responses must therefore be treated with caution, and values-laden alternative viewpoints handled with care in school geography (see Mitchell, 2018). But for the three teachers reported on here, the GeoCapabilities approach helped them refocus on disciplinary knowledge, such that emotion and values discussion

can be embraced in their lessons with confidence, leading to students developing PDK that may be put to use in their lives as capabilities. This leads on to the question of may be put to *what* use? Connecting geography with human capabilities self-evidently emphasises living and thriving with other people in (and with) the natural world. In this respect, the GeoCapabilities project offers an opportunity to make a distinctive contribution to education for sustainability.

The Anthropocene—values, the political and opening a space for alternatives

At this point in the paper, I offer an interpretation which connects the affective and values dimension which emerged in curriculum making about migration, to broader geographies by using one illustration of how critical thinking about new disciplinary knowledge might enhance people's GeoCapabilities. The Anthropocene or "human epoch" (Crutzen & Stoermer, 2000) is now widely discussed in many branches of academic geography and increasingly in school geography vocabulary. It draws attention to the climate emergency, water and food security, pollution, health and plastic waste amongst other problems. The Anthropocene highlights people-nature relationships, including opening up thinking about people *as* nature (that to separate them is a dangerous false binary). However, an uncritical notion of Anthropocene risks assuming an inevitability to human impact on the planet.

One critique of Anthropocene argues that the planetary scale of impact is the result less of humans per se, but of capitalism—a relatively recent political-economic system in human history. The appropriate term is "Capitalocene" argues Moore (2017). This sees humans as not innately driven to over-consumption and accumulating surplus capital and profit. Hunter-gathering has been the dominant economic system for most of human existence, and only with mercantilism did an extractive and exploitative separation of people from nature start to take hold (Harari, 2011; Patel & Moore, 2018). Humans are as inclined to sharing and community as they are to individualism and competitiveness, and as much to environmental stewardship as to resource extraction. This line of argument sees capitalism driving environmental and social crises—the problem is not a greedy "human nature," but the current, unsustainable political economic system. This is not a marginalised critique but is widely supported and developed by critiques of market-led "business as usual" solutions to environmental and social problems including Naomi Klein's passionate call to act in the climate emergency (2015, 2019) and Berners-Lee's (2019) practical guidance for action because "there is no planet B." Economists have proposed viable alternative paths for human development, including Kate Raworth's (2017) "doughnut economics," Tim Jackson's (2009) "prosperity without growth" and George Monbiot's (2018) "new politics" by changing the story we believe, from people as innately greedy and selfish (the neoliberal view), to innately community-minded. These critiques all call for an education which explores values through a critical, progressive geographical knowledge.

Curriculum and society constitute one another (Bourdieu & Passeron, 1977) and "business as usual" is easily taken accepted as the only way. Morgan (2019) and Huckle and Wals (2015) bring to light how geography education contributes to an extractive, carbon-based modernity as capitalism has accelerated. Morgan (2019, p.

147) refers to “fossil-capitalism” and explains how schooling and a “fossil-curriculum” is shaped by and in turn perpetuates fossil-capitalism, albeit in different phases of globalised capitalism through the 20th and 21st century. Like Morgan, Huckle (2019) is critical of the tendency to view environmental and social geography in schools, too readily through a neoliberal lens. Huckle and Wals refer to critiques of the achievements of the UN decade for sustainable development as “business as usual in the end” (2015, p. 291). Morgan (2019) laments that how, even after the banking crisis of 2008 which is as direct and obvious a failure of capitalism as one can imagine—the opportunity to develop a curriculum which connects the political economy to the environmental crisis, is missed.

It is shocking to state that, as concerned as they are to prepare young people for the future, schools have absolutely failed to help students to think realistically and carefully about the environmental crisis. (Morgan, 2019, p. 184)

Morgan could be challenged on this—not all schools may have failed so completely. Nonetheless, “realistically” and “carefully” in Morgan’s words resonate with the arguments of Klein (2019) who speaks of the powerful lobbies of denial and the need for care at all levels, enacted for example by indigenous groups. The words also resonate with Berners-Lee who argues that “truth” and “trust” are needed for a sustainable future (2019, p. 168). Berners-Lee also points out that values are the “inescapable convergence” of all the pathways of his analysis of planet-scale environmental crisis (ibid). For school geography, this suggests that powerful disciplinary knowledge is just half of a knowledge-values relationship. The need for care is a reminder of the ethical dimension that must be kept in mind in teaching geography in the Anthropocene. A critical analysis of geography education encourages a view of “powerful” subject knowledge as that which reveals hidden structures of power which shape the world (see Huckle, 2019). Such powerful geographical knowledge becomes more accessible to young people when the affective and values dimensions are engaged. This is not to say that the affective and values dimensions have not been used in school geography in the past, or that they are absent now. Rather I am arguing that recent emphasis on test performance in school cultures tends to downplay the place of values in geography education. The values dimension is ever present alongside disciplinary knowledge in a high quality school geography curriculum and GeoCapabilities draws attention to this.

The common thread here is the need to see (and teach) geography by bringing to light how political and economic structures shape the world. This includes teaching possible alternative futures which tackling global issues from inequality, racism and the plight of refugees through to deforestation and climate change, which are all inter-connected by the political economy. There is a profound resonance with GeoCapabilities, and a role for the project here, I believe.

GeoCapabilities and education for sustainability

The GeoCapabilities approach lead the teachers in this project to engage with academic geography, think deeply about curriculum purpose (for their students) and to be curriculum makers. As a result, students articulated and applied geographical

concepts to real world contexts and they did so in personal ways, raising questions and expressing their feelings about right and wrong, better and worse and how things should and should not be. This is an opportunity for teachers to open up discussions about underlying causes, possible futures and alternatives, which take students directly to questioning extractive capitalism and neoliberal societies as inevitable.

A values position informs the overall conception of GeoCapabilities in education overall and my argument here is located in a “social reconstructionist” curriculum ideology in Schiro’s terms (2008) or as education for a better world. There are other, quite different, but equally valid curriculum ideologies and indeed a capabilities approach implies opening debate around alternative philosophies of education. GeoCapabilities will be interpreted somewhat differently depending on how one sees educational purpose. Geography teachers’ personal curriculum philosophies tend to be complex and a hybrid rather than fitting neatly into a singular purpose. Teachers may include some element of helping children “fit in” to the world as it is now, as well as changing it; for individual flourishing, and to become fully human by access to disciplines and scholarly knowledge (see Rawling, 2001; Schiro, 2008 for a discussion on curriculum ideologies/philosophies generally and Mitchell, 2020, in relation to GeoCapabilities). But I suggest that GeoCapabilities encourages a rejection of a social efficiency curriculum ideology (to support business as usual) because geographical understanding to become capable of engagement in meaningful debates and choices is incompatible with a view of schooling solely to reproduce consumers (now that we have new disciplinary insight about the Anthropocene/Capitalocene). If education for human capability is freedom to choose paths in life, it must reveal the structures of capitalism and open up alternatives.

Revealing the structures that shape the world to young people in the classroom and presenting these as socially unjust and unsustainable systems might seem very demoralising. But quite the opposite according to Bourn (2021). An “education in hope” is not to offer a self-centred and individualistic way forward but, in a critically conscious way, to explore alternatives for people and nature. These can then become conceivable, even anticipated (see Ojala, 2017). In curriculum terms this calls for is a shift from the status quo—from the “fossil curriculum,” but when alternative scenarios for future schooling and curriculum are considered, the more radical path to a critical understanding gives hope for an education that may increase the sum of human wellbeing (Hicks, 2018; Huckle, 2019; Morgan, 2019; White, 2020).

There is one important values question remaining here, which is how will the educated person choose to use PDK (what personal values will they draw upon)? And leading from this, what is the curriculum role in the development of personal values? I am not attempting to answer these questions here, but I see this as something of a gap in recent debates around subjects and “powerful knowledge” in curriculum, in particular considering sustainability. The GeoCapabilities project as it moves forward is well placed to contribute to exploring these questions. Maude is illustrative here:

(PDK)...enables young people to discover new ways of thinking, better explain and understand the natural and social worlds, think about alternative futures and what they could do to influence them... (Maude, 2018, pp. 180–181)

Maude's typology and also wider literature in the argument for PDK in a future 3 curriculum using geography as an example (Young & Lambert, 2014) are compelling arguments for why knowledge matters in a progressive view of education. But they leave an implicit question here—what values are necessary for “powerful knowledge” to achieve a better future for the individual and others? And, are there ethical criteria that must be met (as well as knowledge criteria) for individuals to have capabilities? GeoCapabilities 3 has begun to shine a light on the relationship between a knowledge rich curriculum, values, the purposes of education and global crises in the Anthropocene.

Conclusion

GeoCapabilities can help geography teachers and their students to access PDK. For teachers, the structures or tools of GeoCapabilities can perhaps be summed up as a developing a habit of mind in teachers. This is a disposition to think geographically whilst also keeping the young person's needs in mind in making choices about curriculum and lessons. In this paper, I have tried to move the GeoCapabilities discourse on towards understanding the knowledge-values interface as teachers engage with increasingly urgent global issues, such as climate change, inequality and migration. GeoCapabilities can contribute to a progressive geography curriculum of PDK which engages deeply and critically with environmental-social crises. There is scope to recognise, explore and embrace the values, ethics and affective dimensions that arise as the curriculum is constructed. This will encourage a critical questioning of the way the world is, helping the teacher and students to uncover the political-economic structures that shape processes, lives and places and can be a hopeful education.

Current global crises (environmental, social, political, and economic) are leading to a questioning of political economy in the public sphere—witness for example the intense left-right polarisation of in the 2020 U.S.A. presidential election, framed in apocalyptic terms and the energy in public protests across all continents over nationalism, dictatorships and social justice. Geography educators have engaged with the knowledge-values dimension to global issues before, and do so still. But the prominence of powerful knowledge in curriculum debates risks downplaying the significance of values in geography education. The times are ripe for geography teachers and educators to take bold steps as curriculum makers towards a critically powerful geography by engaging with the affective and values dimensions of the school subject.

Further educational research is needed to understand the values-knowledge relationship in times that call for urgent, worldwide global action for a better future path than that of “business as usual.” Put bluntly, a key question to ask is—if PDK is acquired, what will be done with it? To this end, interdisciplinary as well as international approaches could be fruitful. Interdisciplinary research has developed a nuanced conception of knowledge in curriculum (see Deng, 2018). Different disciplines approach human development, sustainability, values and ethical questions with different standpoints and lenses. An interdisciplinary approach could be a productive direction to take the GeoCapabilities project forward.

Acknowledgements

I would like to acknowledge the contribution to the curriculum research and development which made this paper possible, from partners and associate teachers of the Erasmus funded project GeoCapabilities 3. In particular, thank you to the associate teachers Dr Daniel Whittall, Flora Dickinson and Graeme Eyre for your innovative, collaborative work upon which this paper has drawn.

Disclosure statement

No potential conflict of interest was reported by the author.

Funding

This work was supported by the British Council through Erasmus plus EU funding under Grant number 2018-1-UK01-KA201-048104_Geo-Capabilities.

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