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'What is this curriculum doing to my subject?' Using geographical questions to interpret the CAPS curriculum

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Abstract

An important aspect of preparing pre-service teachers is to develop their understanding of what constitutes meaningful learning in the study of Geography. This understanding is necessary for prospective and practising Social Science and Geography teachers to interpret existing and changing curricula as thinking professionals. This paper argues that there are several organising concepts that make classroom learning geographical in nature. These are place, spatial distribution, spatial processes, and human-environment interactions. The paper draws on the nature of geographical enquiry to consider what questions could steer classroom learning. This set of questions is then used as a lens to reflect on the way in which the current national curriculum (namely, CAPS) supports (and sometimes constrains) learners' development of geographical thinking. To teach Geography effectively, Social Science teachers need to identify the central concepts they foreground in their lessons, as well as how to develop geographical thinking around those concepts. I suggest that teachers need to regard themselves first as subject experts, and then as interpreters of curricula, in order to be able to interpret the geographical nature of the content to be taught.

Keywords: curriculum; subject knowledge; geography; Social Science; CAPS; geographical thinking.

Introduction

In order to navigate and interpret changes in national curricula, Geography teachers need to ask themselves, 'What is *this* curriculum doing to my subject?' Strong knowledge of the subject one teaches makes it easier to see how a particular curriculum creates opportunities to develop geographical thinking and to identify areas where it fails to do so. For teachers effectively to induct learners into geographical ways of knowing, they need to be able to promote geographical thinking in relation to the content specified by the current national curriculum. It is the essence of the work of teachers to ensure that their learners learn about phenomena in systematic ways. Curricula can assist in this regard with its selection and sequencing of

central concepts that provide learners with non-intuitive insights into the world around them (Morrow, 2007). However, curricula can equally constrain the induction of learners into the knowledge of a subject. This can happen if a curriculum prompts teachers to focus on peripheral ideas rather than the key organising ideas, or sequences concepts in ways that do not promote systematic learning.

By looking at the key organising concepts of geography, and what questions prompt geographical thinking in relation to those concepts, this paper begins to explore an answer to the question,

'What is this curriculum doing to my subject?' In this paper, I will draw predominantly on examples from the Intermediate phase curriculum to illustrate the points made.

Geography school curriculum change in post-apartheid South Africa

The knowledge structures associated with disciplinary subjects are somewhat stable, as they reflect the best cumulative knowledge to date, and a history of how understanding has developed through systematic enquiry over time (Slonimsky & Shalem, 2006). However, as political, social and economic priorities change, this stability may be compromised as revisions to the national curriculum are made. Each successive national curriculum (in the case of post-apartheid South Africa, Curriculum 2005, Revised National Curriculum Statement, and most recently, CAPS) presents a particular interpretation of subjects generally, and of Geography specifically. Changes in how Geography has been represented in post-apartheid curricula have been analysed (e.g. Beets & Le Grange, 2008; Ballantyne, 1999; Wilmot & Norton, 2004). While Beets and Le Grange (2008) focus their analysis on the extent to which there has been progression and continuity between successive curricula, this paper considers the extent to which the content specified in these curricula provides opportunities for teachers to centre the asking of geographical questions.

Curriculum decisions regarding knowledge selection draw on the input of experts in the subject, but are also informed by national priorities and inputs from civil society. Since the demise of apartheid, national priorities that have influenced the curricula of Social Sciences have included the articulation of voices and perspectives that were silenced under apartheid. There is now a marked emphasis on human rights, social justice and citizenship, and on the advancement of science and technology. In reality, curricula are developed by education policymakers, ideally in partnership and consultation with subject experts. Through an iterative process, the national curriculum designers select core ideas and enquiry methods from an established field of knowledge, albeit with current contextual priorities foregrounded. In this way, the powerful insights offered by a body of knowledge might inadvertently be obscured.

One of the priorities of the post-apartheid education department was to revise the school curricula and remove racist and inaccurate content (Beets & Le Grange, 2008). Another objective was to replace the curriculum that privileged the transmission and memorisation of information with one in which issues could be explored, and in which previously silenced voices were heard. In the 'interim' curriculum, and in Curriculum 2005 (henceforth C2005) that followed, Geography, which had been a standalone subject, was cleft in half and its content was reallocated to both the Social Sciences and Natural Sciences learning areas or subjects. At this time, concern was raised that the distinctive nature of Geography would be lost as the curriculum moved away from specialist subjects to

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more generalist learning areas (Beets & La Grange, 2008). Developers of C2005 had hoped that integration of subjects would make content less disjointed, more linked to everyday lives of learners, and therefore easier to understand (Bertram, 2008:2). However, by locating the learner (rather than learning or knowledge) at the centre of teaching, possibilities for knowledge-rich teaching were reduced in favour of the sharing of personal experience.

By weakening the boundaries between the disciplines of History and Geography, conceptual knowledge became obscured and the skills-based approach that was advocated often failed to provide learners with opportunities to think systematically about geographical issues. Without the stipulation of organising concepts to guide studies in Geography, some teachers became mere facilitators who understood their role as providing learners with opportunities to pool what they already knew. Extensive subject knowledge was needed for teachers to interpret C2005, select appropriate content, and then teach it in ways that foregrounded geographical ways of thinking. In too many Geography classrooms, the focus of lessons became developing skills to achieve content-free outcomes rather than systematic engagement with concepts that make up a networked body of knowledge. The removal of the disciplinary boundaries between Geography and History and the introduction of an integrated subject called Human and Social Sciences resulted in the subject's teaching losing its core: it was neither systematic nor conceptually driven. Outcomes-Based Education failed dismally because it was not underpinned by concepts of 'powerful knowledge' that enable non-intuitive insights that have the ability to transcend particular cases (Allais, 2010; Young & Muller, 2013).

A review of the failings of C2005 led to the recommendation that History and Geography

"should not be integrated mechanically but should [be structured in a way that ensures] that the distinctive concepts and 'ways of thinking' of each [discipline] is fostered and developed" (Review Committee on C2005, 2000: Appendix 2).

There was therefore a curriculum shift from social science as a fully integrated subject to maintaining much of the disciplinary integrity of History and Geography, albeit still under the umbrella subject of Social Sciences. The subsequent Revised National Curriculum Statement and CAPS, therefore, presented Geography and History as two separate but linked disciplines, although they continue to coexist within a single learning area (DoE, 2002). Geography was described as a subject that provides learners with "a knowledge and understanding of the place in which they live, of other people and places, the significance of location and of how people and places interrelate and interconnect" (p. 5), the Revised National Curriculum Statement then went on to elaborate on learning activities rather than the knowledge that supported learners to do those activities in a meaningful way. More recently, CAPS has been much more explicit about the concept to be taught, although it has been criticised for being inflexible and overloaded, thereby forcing teachers to prioritise curriculum coverage over learner understanding.

What constitutes Geographical knowledge?

Defining the nature of Geography is not a straightforward task; some argue that it should be regarded as a discipline with its own knowledge structures, while others describe it more as applied science. Some academic geographers argue that attempts to define the nature of Geography restrict

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the subject, while others suggest that Geography is too broad to define completely (Maude, 2009). The difficulties in describing what constitutes the practice of Geography arise because geographical knowledge is not static. Geography draws on the knowledge of other subjects (including, but not limited to, economics, chemistry, zoology, botany, physics, and sociology). Because of the way in which it draws on these other bodies of knowledge, there is debate about whether Geography is a discipline, or if it is better described as an applied science (Fairhurst, Davies, Fox, Goldschagg, Ramutsindela, Bob & Khosa, 2003). While these debates are crucial to navigating and extending the boundaries of the subject through research, learners at the school level are generally introduced to geographical ways of thinking through a more traditional (and widely accepted) understanding of the subject.

The word *geography* comes from two Greek words, *geo* meaning Earth and *graphia*, meaning a description. So, Geography literally means to study the Earth. However, there are different perspectives from which Earth can be studied. Earth, for example, can be studied as the third planet rotating on a tilted axis and orbiting the sun in space. Earth can be studied as a terrestrial planet, the continental surface of which is generally high in silica and aluminium, and which has a molten iron-rich core. Earth can be studied as a habitat for plants and animals. It can even be studied as a spiritual deity, given that it is worshipped as a fertility goddess in certain cultures. From a geographical perspective, however, Earth is studied as a physical object, and as the environmental context within which natural processes and human activity interact. The tendency to divide Geography into a study of the 'physical earth' and the 'human earth' has contributed to a fragmentation of the subject (Fairhurst et al., 2003).

Geography has therefore been divided into a Physical Geography branch (including planetary studies, geomorphology, oceanography, meteorology, climatology and so on) and a Human Geography branch (including studies in demographical, social-political and economic landscapes, and environmental management). Although Regional Studies offered some promise of providing a unifying framework, the contextually particular nature of regional Geography knowledge is segmental rather than cumulative. The fragmentation in the Geographical body of knowledge perhaps made it easy for the Education Department to divide the subject across Social and Natural Sciences, despite resistance from the South African Geography community (Ballantyne, 1999). Some of the major global issues currently facing humanity stem from the consequences of how people interact with the natural environment. Such issues include the threat of climatic change, deforestation, poverty, development, social and environmental justice, migration, the increasing severity and frequency of hazards that affect increasingly vulnerable communities, conflict over land and resources, waste management, as well as the demand for sustainable energy resources.

Geography provides a systematic way for learners to develop a deep understanding of these crucial issues, explore options, and make informed recommendations. Geographical knowledge thereby contributes to the development of "responsible and active citizens in the present and future worlds" (CGE, 1992). However, to learn to address these problems in a systematic and informed manner, learners need to draw on perspectives from both Human and Physical Geography. This potential will be reduced as long as the two are located in different subjects in the South African school curriculum.

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While it is impossible to provide a comprehensive account of all aspects of Geography, what counts as foundational knowledge is broadly recognised by Geography practitioners. The subject has been broadly defined as a "science that explains the character of places and the distribution of people, features and events as they occur and develop over the surface of the Earth" (CGE, 1992). To establish the foundations of systematic thought in a subject, it is essential that Geography teachers' questions induct learners into geographical ways of thinking about the world. If teachers are to achieve this, then within each organising concept, learners need to be asked the kinds of questions that lead them to systematic and geographical ways of thinking. If Geography teachers ask questions that are not geographical in nature, then the lessons that follow are unlikely to help learners develop a systematic way of analysing their place in the world around them.

Promoting geographical thinking through questioning

The intellectual quality of geographical learning experiences that Social Sciences teachers are able to design for their learners depends on their understanding of what knowledge and activities constitute meaningful learning of Geography. This understanding not only shapes the way teachers can interpret successive iterations of national curricula, but also how they frame the content knowledge of the lessons they teach. The International Charter on Geographical Education (2007, 1992) identified six questions that form the basis of geographic enquiry. These questions are:

- Where is it?
- What is it like?
- Why is it there?
- How did it happen? How is it changing?
- What impacts does it have?
- How should it be managed for the mutual benefit of humanity and the natural environment?

In an analysis of international curricula, academic papers on the nature of Geography for primary school learners, and of the conceptual shifts in the focus of post-apartheid curricula, I identify four organising concepts around which geographical concepts and thinking are introduced to primary school learners. These concepts are place, spatial distribution, spatial processes, and human and environmental interactions. Because Geography can be regarded as a networked body of knowledge, these organising concepts cannot always be neatly separated, and geographical studies can draw on several of them. However, for the purposes of analysing and interpreting a curriculum, like CAPS, it is useful to tease them out and consider them each in turn. Systematic learning, however, requires that they are brought into a relationship with one another through the study of various natural or human phenomena. For each of these organising concepts, I explore how the questions proposed in the ICGE can be used to intentionally draw learners' attention to studying phenomena from a geographical perspective.

Big Idea: Understanding Place

Geographers seek to understand how places are similar to (or different from) other places, particularly with respect to risks (like hazards) and opportunities (like resources). The study of a place is therefore one example of where History and Geography can link meaningfully within the

Social Science learning area. A *place* can be any piece of the Earth's surface that people have demarcated with a name because of a particular characteristic or a particular function (Maude, 2009).

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A place can be defined according to different criteria and at different scales. Locally, a place could be a home, a shopping centre, a village or a wetland, for example. Regionally, a place could be a *political* entity, like a town or province; it could be a *physical* entity, like a river catchment area; and it could also be a *socio-economic* entity, like a development zone. The identification of distinguishable places allows geographers to study how human and natural elements interact in a particular context. For example, geographers may consider how people's use of the land has changed over time. Geographers seek to describe what combination of physical and human features interact to give a place its characteristics (Edgington & Hyman,

2005:115). As resources are unevenly distributed over the Earth's surface, people in places depend on one another to meet their wants and needs. Different places are therefore linked through a flow of information, ideas, people, resources and manufactured goods (CGE, 1992). When studying places in Geography, learners construct an understanding of where they live, as well as of far-away places, and how different places connect with one another.

In our increasingly globalised world, understanding the interdependence of places is essential if learners are to operate within the global economy and develop an understanding of how their local actions contribute to global issues.

A geographical study may investigate how the elements of the environment interact to provide challenges or opportunities to communities who live there. Studies of places or regions provide a case study approach to how spatial elements come together to provide a unique context for human-environmental relationships. When studying place, learners are taught to look for what is unique and special about a location, rather than to construct generalisations inductively. The focus is thus on understanding difference. However, case studies of place can be used deductively to show how generalisable patterns and processes (like urbanisation or drought) affect particular locations in particular ways. The geographical questions: "Where is it?', 'What is it like?' and 'Why is it there?' guide geographical enquiry about 'place' but can be extended (see table 1). as shown in the table below.

While the C2005 curriculum emphasised the study of place in line with its intention to be locally relevant, subsequent curricula, including CAPS, have not emphasised the study of particular places. They do however locate geographical studies around place-based themes of African studies and South African studies. Teachers are encouraged to look for locally relevant case studies to illustrate various topics. There are other places where place can be given prominence, such as through using a place as an organising theme in map interpretation studies. This may assist learners to construct some knowledge of the complexities and unique characteristics that make up a place, but in general, integrated regional studies do not feature strongly as an object of study in the CAPS curriculum. **Big Idea: Spatial distribution patterns**

Geographers observe and describe where different human and natural features are located over the surface of the Earth – and where they aren't located. It is in the study of the spatial distribution of phenomena that maps and Geographical Information Systems (GIS) are primarily used. A geographer may choose to study a feature that has an interesting spatial distribution pattern. In some of these thematic studies, geographers focus on the reasons why a feature (for example, a power station, a volcano or the Constitution Court) is located at a specific place. Geographers can also study spatial distribution patterns of categories of physical features (like landforms, vegetation types, surface water

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Table 1: Examples of geographical questions that explore 'Place' (categories of questions from CGE, 2007)

Geographical questions that explore 'Place'	
Where is it?	Where is this place?
What is it like?	What is located here? What isn't located here? How is the land used? What sort of place is it? When did it get here? What are the characteristics of this place? What is significant about this place's characteristics?
Why is it there?	Why did people settle here? What do people do at this place? Why is _____ located at this place?
How did it happen?	How did it come to be this way? How would this place be different if _____? How does this place differ from another place you know?
How does it change?	How is this place similar to another place you know? How is this place changing? Why is it changing?
What impacts does it have?	How is this place connected to other places? How does what is happening at this place affect my life? How do I affect this place?
How should it be managed for the mutual benefit of humanity and the natural environment?	What do you like about this place? If you could, what would you leave as it is or change about this place? Would you like to live there? Why or why not? Could this place be considered a heritage site? Why or why not?

resources, rainfall, or mineral resources) or human features (like settlements, transport networks, economic activity, land use, or cultural practices). Geographers may study the spatial patterns of cultural or natural events (like earthquakes, cyclones, boundary wars or migrations). The rapid growth of the field with the use of GIS means that relationships between the distribution patterns of seemingly unconnected phenomena can be established in ever more powerful representations.

The uneven distribution patterns over the surface of the Earth contribute to how one place on the Earth's surface is different from another. Such differences pose challenges and opportunities to those who live there. The study of spatial distribution, therefore, informs studies of how people interact with the environment in which they live.

To draw learners' attention to spatial distribution patterns, there are questions that teachers can ask about a particular feature and the way its distribution changes over space (see Table 2).

In identifying the spatial distribution patterns of a physical or human feature, the primary questions that geographers ask are "Where is it?' and 'Why is it there?'. In the current CAPS curriculum, numerous topics require learners to focus on identifying distribution patterns of natural and human phenomena over space. For example, Grade 5 learners are required to locate different physical features in Africa on a map. Similarly, the Grade 6 topics of 'Climate and Vegetation around the World'

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and 'Population – why people live where they do' require that learners pay more attention to location and distribution. The key concept of distribution, however, is notably missing from various topics, such as the distribution of water and mineral resources in South Africa (in the Grade 4 topic 'Water Resources in South Africa', and the Grade 5 topic 'Minerals and Mining in South Africa'). The Grade 4s will not yet have learnt about rainfall distribution patterns in South Africa, and the location of dams and suitable dam sites is not explicitly specified in curriculum content. In this example, the sequencing of the content does not build learning systematically, and opportunities to prompt learners to think geographically are thus not as effectively exploited as they could be.

Table 2: Examples of geographical questions that explore spatial patterns (categories of questions from CGE, 2007)

Geographical questions about Spatial patterns	
Where is it?	What is the feature called? Where is it located / distributed? Where isn't it located / distributed? How is this feature organised over space? How does this feature's distribution change over space?
What is it like?	How much is found there? Where is the most / least amount found? When is it found there? When isn't it found there? What distribution trends can be identified? Does the distribution pattern fluctuate over time?
Why is it there?	Why is it located there and not somewhere else? What other factors affect the distribution of this feature? How do political structures / policies / power relations between different groups affect spatial distribution patterns?
How did it happen? How is it changing?	What spatial processes have resulted in this distribution pattern? How is the spatial pattern now different from that of some years ago?
What impacts does it have?	How does the distribution of this feature affect people? How might the distribution pattern of this resource affect the distribution of other features?
How should it be managed for the mutual benefit of humanity and the natural environment?	Does the distribution pattern enable fair access to the resources? Who benefits from the resource as it is currently distributed? Who doesn't have access to the resource as things currently stand? What needs to change for communities to increase fair access?

Big Idea: Spatial Processes

Spatial processes are important to geographers who seek to understand how things came to be the way they are. Through the study of spatial processes, geographers strive to explain why things (for example, surface water, soil, moist air, people, goods, natural resources, or industries) move from one place to another. In studying spatial processes, geographers consider where these things come from, where they go to, the reasons why they move, and how these processes change the characteristics of both of these places. The spatial inequalities that arise from uneven distribution patterns often become exacerbated when things move from one place to another (Edgington & Hyman, 2005). Some natural processes that shape the Earth's surface (like plate tectonics, climatic circulation, and ocean currents) are driven by uneven energy distribution.

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Gravity is also a force that is responsible for some spatial processes like landslides, surface water movement and soil erosion. The migration of people or industries from one place to another is analysed in terms of the tensions that exist between push and pull forces.

The study of spatial processes helps learners to understand the past, to interpret how the present spatial patterns came to be, and to predict what is likely to happen in the future should present trends continue (Geography Education Standards Project, 1994). Because the current situation is interpreted in light of the past, the study of spatial processes often compares historical data with the way things are now (Commission on Geographical Education, 1992). This is another place where meaningful links between geographical and historical studies can be forged. For example, in looking at the changes in vulnerability of particular communities, links can be drawn in relation to systems like colonial exploitation, the impact of apartheid, resource allocation and civil war. Future predictions are made by extrapolating past trends into the future. Such studies develop learners' understanding of cause and effect, and the connections between the past, present and future. This is essential if learners are to be empowered to see themselves as agents of change who can consider possible future scenarios and make informed decisions for a sustainable future.

Table 3: Examples of geographical questions that explore spatial processes (categories of questions from CGE, 2007)

Geographical questions about Spatial processes	
Where is it?	What has moved? Where is this happening?
What is it like?	What features have changed their location over time? From where did it/they come? Where did it/they go to?
Why is it there?	What factors affected its movement?
How did it happen? How is it changing?	How did this distribution pattern come to be like this? What is changing about this place? How fast is the movement happening?
What impacts does it have?	What are the beneficial and detrimental consequences of the change? What impact did the movement have on the place of origin? What impact did the movement have on the destination place? How does the movement increase/decrease spatial inequalities between places? What opportunities and challenges do the spatial processes pose for the various role-players?
How should it be managed for the mutual benefit of humanity and the natural environment?	How do human actions affect the rate of change? What would happen if the rate of change/movement was increased/decreased? Should people intervene to slow down / speed up the current spatial processes?

In the study of spatial processes, the most important questions are often 'Why is it there?' and 'How did it happen?'. These questions consider changes in space over time.

There are very few places in the CAPS Intermediate Phase curriculum that draw learners' attention to spatial processes, and as a result, opportunities for geographical thinking are not always adequately exploited. Movement over space is considered in relation to a study on the

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water cycle, but vaguely implied in the Grade 6 topic on 'Trade'. More attention to spatial processes is given in topics in the Senior and FET phases, for example, 'Surface Forces that Shape the Earth' (Grade 9), 'Plate Tectonics, Folding, Faulting, Volcanoes and Earthquakes' and 'Population: Structure, Growth, and Movement' (Grade 10), 'Global Air Circulation, Africa's Weather and Climate' (Grade 11) and 'Geomorphology: Drainage Systems and Fluvial

Processes' (Grade 12). While attention to spatial processes is developed more intensively from Grade 9 onwards, at the Intermediate school level, the curriculum tends to focus on the location of features rather than on processes. The Earth is therefore presented as a static and unchanging place, unless teachers themselves see opportunities where processes can briefly be introduced to learners to establish foundations for deeper study later in their schooling.

Big Geographical Idea: Human-Environmental interactions

An important focus that has always permeated the Geography component of post-apartheid curricula is the "interconnectedness among groups of people, and between people and their environment" (Department of Education, 1997, p. 4). This focus was retained in the Revised National Curriculum Statement and again emphasised in the description of Geography in CAPS as being "concerned with the activities and impact of people on the earth" (Department of Basic Education, 2011 p. 12).

Geographers study how humans interact with the natural and cultural environments around them on various scales (Martin, 2006). For example, if there is a new coal-based power station built in Mpumalanga, some impacts would be local (changes in the road network the immediate landscape, for example). Other impacts would have a predominantly regional impact (such as the increased job opportunities in the province); other impacts would nationally significant (such as increasing the electricity supply). Some impacts would have global significance (such as a significant increase in carbon dioxide emissions that is thought to accelerate global climatic change). When geographers study places and issues at different scales, they identify how what happens on a small scale is integrally connected to a larger geographical context (Taylor, 2005). Understanding the connections between local actions and global consequences is imperative if social science learners are to "become agents of change for a more just and sustainable future" (DOE, 2002). Although people may have to adapt their lifestyles to the environment in which they live, they also have the technology to affect the environment dramatically. So, there is a two-way relationship: the environment affects people, and people affect the environment. The two dimensions of this relationship will be examined in turn.

(i) The environment affects people

The characteristics of the physical landscape influence the shape and pattern of human settlements. The layout of Cape Town, for example, has been shaped by its location between the Atlantic Ocean and Table Mountain. Geographers study the reasons why people settle where they do, and how the available natural resources influence the major economic activities that develop within a settlement.

Geographers seek to understand how natural hazards affect communities, and how communities at risk adapt their lives to mitigate their impact. Geographers study what makes some communities more vulnerable to risks from the natural environment than others. Peoples' vulnerability to natural hazards often has roots in poverty as a result of civil war or exploitation through systems such as

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colonialism or apartheid. This is another instance in which social science teachers could make meaningful links between Geography and History. The CAPS curriculum provides learners with numerous opportunities to study how the environment offers both opportunities and risk to people. This can be seen in topics like 'People and their Needs', and 'Uses of Water' (Grade 4), 'Physical Features and Human Activities', 'How Weather Affects the Daily Lives of People' (Grade 5), and 'Human Lifestyles and Industry in Relation to Desert and Coniferous Forests' (Grade 6).

Table 4: Examples of geographical questions that explore how humans are affected by the environment (categories of questions from CGE, 2007)

Geographical Questions: How are humans affected by the environment?	
Where is it?	Where do natural hazards occur? Where have people settled? Where are the resources located?
What is it like?	What natural hazards affect this place/communities? What opportunities or challenges does this environment pose?
Why is it there?	Why does this place experience particular natural hazards frequently? What natural resources made this place attractive for people to settle?
How did it happen? **How is it changing?**	How would a natural hazard affect this community? In what ways has the landforms affected the settlement layout?
What impacts does it have?	How have local communities adapted their lives to the conditions? How are communities living here affected by the characteristics of this place? What influence do these resources / environmental conditions/hazards have on the lives of communities? How might people react and respond if this happens? Why are some people more vulnerable to hazards than others?
How should it be managed for the mutual benefit of humanity and the natural environment?	How effective were the strategies used for dealing with the hazard? Would these lifestyle adaptations/mitigation measures work in another place? Is the access to resources fair? Do communities have fair access to the resources on which they depend?

(ii) How the people affect the environment

The ability of humans to use machinery and technology, coupled with increases in their demand for resources and waste production, can have a significant impact on the environment. Human actions can accelerate natural processes, such as the rate of climate change, soil erosion and the extinctions of plant and animal species. Other human actions can decelerate natural processes; the building of dams and levees contain floodwaters, for example.

Geographers study how people make use of natural resources for economic growth and development.

Differences in the power relations between groups of people often lead to inequalities in access to resources. Geographers, therefore, need to consider the political, social and economic histories of a place to understand why resource access is often not equitable. This is another area where geographers draw on historical knowledge in a meaningful way. In this sense, social

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science can promote learners' understanding of social and environmental justice.

To understand conflict around resources, geographers consider the views of role-players who have different priorities, and who demand that shared resources be managed in inequitable ways. Conflict around resource management and environmental concerns is an important sphere of geographic concern, be it conflict over trade in ivory, access to water or oil resources, levels of carbon emissions, or the management of tropical rain forests. Developing learners' understanding of different agendas, priorities and perspectives that people hold is where Geography plays a role in the "development of informed, critical and responsible citizens who can participate constructively in a culturally diverse and changing society" (DoE, 2002, p.4).

Geographers seek to understand the consequences of human actions on the environment, as well as how the impact of these actions can be reduced. Such understanding is essential for the development of the knowledge, skills, attitudes and values needed for learners of social science to become "globally responsible citizens", able to "contribute to the development of a just and sustainable future for our planet" (Martin, 2006:133). Geographers seek to find ways to manage resources to increase equitable access, minimise the environmental impacts of pollution, and promote sustainable living and development so that the present generation can meet their needs without compromising the ability of future generations to meet their own needs (United Nations, 1987). To study how human activity affects the environment, teachers of Geography need to ask questions that explore different aspects of this relationship.

Table 5: Examples of geographical questions that explore how the environment is affected by humans (categories of questions from CGE, 2007)

	Geographical Questions: How humans affect the environment
Where is it?	Where is the impact happening?
What is it like?	What resources are used in this human activity? Can these resources replenish themselves? What wastes are produced during this process? What happens to those wastes? Who has access to the resource? Who doesn't have access to the resource?
Why is it there?	What is likely to happen if _____?
How did it happen? How is it changing?	What would happen if this kind of human activity was conducted in another place? How do human actions slow down or speed up the rate at which natural processes occur?
What impacts does it have?	How do the wastes produced from human activities affect the natural environment? How will the environment be affected if this development goes ahead? What will the long-term consequences of this activity be on the environment? Which community is bearing the greatest brunt of the impact?
How should it be managed for the mutual benefit of humanity and the natural environment?	How should we change our lifestyles to reduce our impact on the Earth's natural systems? How could people use the available resources less wastefully? Which alternative option for managing this resource would be the most sustainable? Which alternative option for managing this resource would reduce poverty to the greatest extent? Which option would you support? Who should take responsibility for the way that the environment has been affected?

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The questions about the impact that humans have on the environment and how the environment should be managed sustainably are central to this branch of geographical knowledge. As with the previous section, there are numerous opportunities for learners to study human impact on the environment, for example, 'Pollution and Waste Water' (Grade 4), 'Ways in Which Human Activities Change Physical Landscapes by Dam and Road Building' (Grade 5), 'Effects of Floods', and 'Effects of Earthquakes' (Grade 7), and 'Disappearing Wetlands' (Grade 7). Despite the wide coverage of this aspect in the Geography component of the Social Science curriculum, there are also places where this opportunity is missed in favour of non-geographical study. For example, in the Grade 4 topic of 'Food and Farming in South Africa', there is a wholly ungeographical section on food processing. This appears merely to be a convenient place to retain content that used to be taught under the subject of Technology. The section's lack of geographical relevance, however, needs to be recognised as such. Issues that could promote geographical thinking and understanding would be the impact of farming practices on the environment (such as simplification of the ecosystem and the impact of pesticides and fertilizers on water supplies). These considerations are omitted in the present curriculum.

Conclusion

It is the collective responsibility of subject experts to ensure that they provide extensive input into draft curricula in times of curriculum change. To do this, teachers need to base their professional foundation on the subject/s they teach rather than on any loyalty to a particular iteration of the national curriculum. By asking the question, 'What is this curriculum doing to the subject I teach?', teachers assert the foundation of their practice in the subject they teach. This position makes them better able to stand firm in their subject knowledge and see both strengths and weakness in the proposed or adopted curriculum. This kind of engagement advances the professional thinking of

teachers, and they are better able to see possible omissions and appropriate places for extension. In this way, teachers can assume the role of interpreters of a curriculum rather than act merely as technical implementers of it.

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