EPISTEMIC QUALITY IN GEOGRAPHY CURRICULA

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‘to know, to understand, to be acquainted with,’ and, ‘scientific knowledge, system of understanding’ (Oxford Dictionary, 2019).
- **High Epistemic Quality**: presents mathematics as fallible, refutable and uncertain, and which promotes critical thinking, creative reasoning, the generation of multiple solutions and of learning from errors and mistakes (Hudson 2018).

- **Low Epistemic Quality**: presents the subject as infallible, authoritarian, dogmatic, absolutist, irrefutable and certain, and also involves rules that follow strict procedures and right or wrong answers.

- ‘sense of enjoyment of mathematics and fulfilment in the subject as a creative human activity’

- ‘creative reasoning’ in the subject
WHAT DO WE MEAN BY THE ‘QUALITY OF THE KNOWLEDGE’?

- ‘better, more reliable and nearer to the truth about the world and what it is to be human’ (Young, 2008).
- ‘Knowledge links a subject to a truth’ (2014, Negal, 8)
Subjects have a related but wider purpose linked to the ‘goals of instruction’ and the broader mission of the school and the individuals they are seeking to shape’ (Weniger, 2000)

Biesta’s three purposes of education:

1. Qualification
2. Socialisation
3. Subjectification: ‘Coming into presence’ with the world; ‘a process through which we come into the world…and the world comes into us’ (Biesta 2012, 43).
'knowledge is potentially encapsulated in situations, and it is in going through those situations that the pupil,' (Chevallard, 2007: 132) = Central principle of French didactics

(Hudson, 2016, p8)
- **Know that** (propositional knowledge) versus **know how** (procedural knowledge)

- Propositional knowledge: conceptual knowledge and contextual knowledge

- Procedural knowledge: *inferential know how*, this is about ‘knowing how the conceptual knowledge (the ‘know that’) hangs together, and how to negotiate the epistemic joints that link the various knowledge bits together’ (Hudson: 103).

- *procedural know how*, the newcomer ‘learns how to find out new things, finds out which warrants and tests work under what circumstances, what the tolerances and limits are in real situations, forming new judgements that lead to solutions that work in the world’ (ibid.: 103).
1. The pupil ‘must have reasonable mastery of the know that (the conceptual content) before they can begin to grasp how the know how works.’ (Hudson 2018)

2. The pupil ‘must be helped to grasp the inferences and the inferential relations before they will be able to venture into uncertain territory with the procedural know how with any confidence.’ (Ibid.)

3. ‘the various know hows ……also ascend epistemically, which means that they also have features of greater and lesser complexity that must be correctly sequenced.’ (Ibid.)
What are the aims of this curriculum and why is it important for pupils to learn?
How were the content selected and sequenced? (curriculum)
How will the content be presented to pupils and what will they do? (methods)
What did the pupils learn/what geographical thinking did they do? (outcomes)

Methods:
- 2 student teacher MA curriculum planning assignments/units of study
- Evaluation tool – interpretivist questions
AIMS: THE GEOGRAPHY CURRICULUM SHOULD DEVELOP UNDERSTANDING OF:

- Physical and human environments, features and processes,
- The changing character of places, regions and landscapes,
- The significance of location, proximity, scale and connections between localities,
- Spatial patterns, interactions and interrelationships on the Earth’s surface, including those between people and the environment,
- The relevance of place, space, processes and environments to human welfare,
- Geographical enquiry, methods and skills.

Adapted from Hanson (2004), Bennetts (2005), Jackson (2006) and Standish (2014).
**Tectonics (Yr 8)**

1. What is the structure of the earth like?
2. How do the tectonic plates shape the surface of the world?
3. How do the tectonic plates shape the surface of the world?
4. How do volcanoes impact people and the environment? (Mayon volcano, Philippines)
5. How do earthquakes impact people and the environment? (Nepal and New Zealand)

**China (Yr 9)**

1. Why study China?
2. What does the spatial distribution of physical and human characteristics in China look like?
3. Where do people live in China and why?
4. Why are people moving to different places in China?
5. What is life like in rural China?
6. How is life changing in urban China?
7. How is China developing?
8. How is China managing their population and why?
Dear Housing Development,

I am aware of your request to build a housing development near the Mayon volcano in the Philippines. I should inform you that someone who is learning about the advantages and disadvantages of living near a volcano might question the wisdom of such a venture.

There are definite clear advantages to living near a volcano, some of which may surprise you. As we all know by now, there are natural reserves. However, volcanoes produce geothermal energy which produces no pollution or fossil fuels making for a clean and sustainable power. It means there is an automatic decrease in asthma and lung problems. The beautiful, aromatic scene is one for social media. And with all those 're-tweets' and 'posts' the place is bound to gain instant popularity. Boosting how many tourists the Philippines get. Tourism is a key to vacancies in jobs involved in tourism, guides, hotel staff, restaurant staff, etc. This also positively effects showbiz. More entertainment will be needed leading to more frequent shows and money. Fertile soil is definitely a positive too. Better quality crops leads to more popularity and income. The minerals in the soil, like sulphur, help as well.

Despite all this thought, there are some major disadvantages to living next to a volcano. To start off with, though, why would you build a house apartment block if it could get damaged within months, that would be a waste of money but importantly you'd endangering the lives of more people in the region.
China's population:
- mostly farmed in the southern and north-east. In the north-west and south-west, the population is much lower.

Tibetan and Gobi Deserts:
- can be cold
- few people live in the Tibetan Plateau, they live in the Gobi Desert.
- From there, the Tibetan Plateau is a big bowl of sand.
- 0-26 people per mile² (not very popular)

Plateau of Tibet:
- one of the highest areas in the world
- the Himalayas lie on its southern border
- few people live here, most live in small villages or are nomadic (wandering)
- 3 huge rivers begin here.
- 0-26 people live here per mile² (not very popular)
- control all of its water in Africa

South China:
- 26-500 people live here per mile² (most popular)
- hottest part of China
- mountains cover land
- home to lots of paddies built on terraces
- 2 major rivers go through

Manchurian Plain:
- cold and breezy
- few people live there
- 0-260 people live here per mile² (most popular)

North China Plain:
- 26-500 people live here per mile² (most popular)
- China's best farm land
- home to Beijing and Shanghai (biggest cities)
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<td>What are the aims of this unit of study and how do they contribute to overarching aims for geography education?</td>
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<td>Aesthetic/moral</td>
<td>What opportunities does the lesson sequence provide for developing moral deliberation and aesthetic experiences, as appropriate to this geographical topic?</td>
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<td>Conceptual Coherence</td>
<td>What is the key conceptual/theoretical knowledge being taught (physical/human/ environmental geography)?</td>
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<td>Is the conceptual knowledge embedded in or applied to real-world locations, places, events or processes of change (contextual knowledge)?</td>
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<td>Pitch</td>
<td>Do the pupils have sufficient existing geographical knowledge and skills to make sense of this geography? How has the teacher planned to connect this knowledge to the pupils’ experiences and prior knowledge?</td>
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<td>Sequencing</td>
<td>What is the logic of the lesson sequence and does it progress geographical understanding and thinking?</td>
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<td>Progression</td>
<td>How does this content take pupils beyond their existing geographical knowledge and skills?</td>
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<td>Geographical Thinking</td>
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<td><strong>Focused Aims</strong> What are the aims of this unit of study and how do they contribute to overarching aims for geography education?</td>
<td>Developing understanding of locations (of and within China), connections (between places with China and with the UK), distribution (of people and settlements), place (China as a whole), distinctive physical and human characteristics (including people’s stories), regional differences (within China), flows (internal migration of people), change (associated with rapid development) and development of geographical skills (mapping, data analysis).</td>
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<td><strong>Aesthetic/moral development</strong> What opportunities does the lesson sequence provide for developing moral deliberation and aesthetic experiences, as appropriate to this topic?</td>
<td>Plenty, although only one reference is made to ‘artistic interpretations of culturally and physically distinctive areas of China.’ Comparing life in rural and urban areas, the implications of massive internal migration and separation of families, other consequences of rapid development including job opportunities and increasing wealth, comparing life in China with life in the UK, and population control and implications of an ageing population.</td>
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<td><strong>Conceptual Coherence</strong> What is the key conceptual/theoretical knowledge being taught – physical, human and/or environmental geography?</td>
<td>Concepts cited: globalisation, development, biomes, population distribution, population management, rural, urban and migration. While it is not made explicit, we can infer that these are all important for understanding the distinctiveness of China and how it has changed over the past couple of decades as they are tasked with answering these questions: What is life like in rural China? What is development? What are the consequences of rapid economic development? What are China’s population growth problems?</td>
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<td><strong>Contextual Coherence</strong> Is the conceptual knowledge embedded in or applied to real-world locations, places, events or processes of change (contextual knowledge)?</td>
<td>As this is a regional approach to curriculum planning all of the content is set in a locational, place-based context. The ST takes care to ensure that the regional and systematic approaches are linked. For instance, “Biomes” were linked to a variety of spatial levels, in this case distinct natural regions within China.”</td>
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REFERENCES


