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What might powerful geographical knowledge look like?



# What might powerful geographical knowledge look like?

Alaric Maude

*ABSTRACT: This article briefly examines Michael Young's concept of powerful knowledge and discusses two ways of interpreting its meaning. One focuses on the characteristics that make knowledge powerful, and the other on the power this knowledge gives those who possess it. Based on the second interpretation, the article then identifies and illustrates five types of geographical knowledge that constitute intellectually powerful ways of thinking, analysing, explaining and finding out. The article describes how each could contribute to thinking about the aims of a geographical education.*

## Introduction

The concept of 'powerful knowledge' was introduced into educational debates within the last decade by Michael Young (2009), a British sociologist of education. The term is part of a broader argument for the importance of subject knowledge in the school curriculum, in opposition to a focus on generic skills and learning outcomes (see also Corbel, 2014). Young (2009) argues that an emphasis on the latter does not enable young people to gain the knowledge to understand and to think beyond the limits of their own experience – i.e. to develop a kind of knowledge that he describes as 'powerful'. Young also argues that entitlement to this knowledge is a matter of social justice, in that all students should have access to it, and not just those from advantaged

backgrounds who go to more academically-oriented schools (Young, 2013). Similar arguments have been made by Leesa Wheelahan (2007) in relation to vocational education, and by Elizabeth Rata (2012) in relation to ethnic groups in the working class.

Geography educators have shown considerable interest in Young's ideas about knowledge, and written about them in a number of articles and book chapters (see, for example, Catling and Martin, 2011; Firth, 2011, 2013; Morgan, 2011, 2015; and Roberts, 2014). However, this literature has focused on questions of philosophy, epistemology and pedagogy, and to date only two articles have been published, both by David Lambert, that contain discussion about specific forms of geographical knowledge that might be regarded as powerful. The first lists examples of powerful geographical knowledge in an appendix, but with no explanation of why they are powerful (Lambert, 2011). The other proposes three types of powerful geographical knowledge, but these are derived via a capabilities approach to the curriculum and not directly from the concept of powerful knowledge itself (Lambert, 2014a).

This article attempts to add to Lambert's work by developing a way of identifying powerful geographical knowledge derived directly from Young's concept. It starts by unpacking the meaning of powerful knowledge, and then uses the conclusions of the analysis to identify and describe types of geographical knowledge that might be considered powerful. The aim is to make the concept sufficiently concrete for teachers to recognise that some of what they already teach is powerful knowledge, or to identify opportunities in the curriculum to engage students with concepts in ways they might not previously have considered. The discussion below also provides a way to explain to non-geographers the distinctive and important contribution of the subject to the education of young people. Due to limitations of space the article does not discuss criticisms of the concept; instead readers are referred to articles by Beck (2013), Catling and Martin (2011), Roberts (2014), and Zipin *et al.* (2015).

## What is powerful knowledge?

Before establishing the presence of powerful knowledge in geography we must clarify the meaning of the concept. What exactly is meant by the term 'powerful knowledge', and what makes this knowledge 'powerful'? An analysis of the growing literature on the topic suggests that there are two ways of explaining the concept. One focuses on the characteristics that make knowledge powerful, and the other on the power this knowledge gives those who possess it.

### The characteristics

The first way is illustrated by these statements:

*'For me powerful knowledge means, knowledge that is reliable, fallible and potentially testable'* (Young, 2011, p. 182).

*'How can we characterise "powerful knowledge"? In short it is knowledge that is created by specialist communities or disciplines: all knowledge is a human construction, but powerful knowledge is made in accordance with some rigorous and demanding procedures and practices, put in place to test knowledge claims potentially to destruction. These state of art epistemic practices are established to ensure that knowledge created is reliable and truthful: indeed, that it is the best it can be'* (Lambert, 2014a, p. 7).

Both of these quotes define powerful knowledge as knowledge that, because of the ways in which it has been produced within disciplinary communities, is as reliable as present understanding permits – and therefore is 'powerful'. They are statements about the knowledge itself, rather than about the consequences of that knowledge. It should be noted that this is a social realist view of knowledge, which contends that there is a reality that is independent of the knower and that, while our knowledge of that reality is a human construct and can never be absolute, when developed within disciplinary communities and subjected to disciplinary critique it is more reliable than an opinion or standpoint. This is in opposition to a constructionist or relativist view of knowledge, which argues that knowledge is socially produced and subjective, and that it is not possible to say that some knowledge is 'the best it can be' (Firth, 2013, 2014; Moore, 2014). John Morgan (2014) believes that this relativist view of knowledge is entrenched in Anglophone academic human

geography, which may lead those teachers who are also geography graduates to reject the possibility of powerful knowledge.

### Enabling

The second way of explaining powerful knowledge describes what this knowledge enables young people to do, as in these statements:

*'Powerful knowledge refers to what the knowledge can do or what intellectual power it gives to those who have access to it. Powerful knowledge provides more reliable explanations and new ways of thinking about the world and acquiring it and can provide learners with a language for engaging in political, moral, and other kinds of debates'* (Young, 2008, p. 14).

*'Powerful knowledge is powerful because it provides the best understanding of the natural and social worlds that we have and helps us go beyond our individual experiences'* (Young, 2013, p. 196).

*'Knowledge is "powerful" if it predicts, if it explains, if it enables you to envisage alternatives'* (Young, 2014b, p. 74).

*'Knowledge in the sense we are using the word in this book allows those with access to it to question it and the authority on which it is based and gain the sense of freedom and excitement that it can offer'* (Young, 2014c, p. 20).

These two ways of describing powerful knowledge are interrelated, in that the knowledge that gives young people the powers described in the second set of statements is likely to be derived from the type of knowledge described in the first set, because that knowledge is the best available at present. However, I suggest that the first way is an insufficient guide to the identification of powerful knowledge in a school subject. This is partly because of the meaning of the word 'power'. This implies an ability or capacity to do something that has an effect or outcome; thus, to be powerful, knowledge should have effects or outcomes that can be described as powerful. While the knowledge identified in the first set of statements can be described as strong or robust, because of the ways it has been produced, we cannot assume that all of it will have powerful outcomes. Another criterion is needed to guide the selection of powerful knowledge, which is provided by the second group of statements – these effectively shift the definition of powerful knowledge from its

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characteristics to what it can achieve for those who have it.

The other reason for not adopting the first way of explaining powerful knowledge is because it suggests that to be powerful, the geographical knowledge that schools should be teaching must be based on disciplinary geographical knowledge. However, the relationship between academic disciplines and school subjects is complex (Deng, 2007; Stengel, 1997), and there are limits to the extent by which subject knowledge can be derived from disciplinary knowledge. There is only space here to make two points relevant to geographical education. First, the school subject is a selection of content from the discipline, with the selection made by educational bureaucracies, curriculum writers and teachers for social, ethical, political and pedagogical reasons, not just academic ones. The selected content is then transformed by teachers into appropriate pedagogic forms for young learners (Firth, 2011; Lambert, 2009). Second, in human geography the academic subject has often moved on from the study of those ideas and content that may still be relevant to school geography, as it pursues new approaches and new areas of research. For example, the concept of centrality, which is still fundamental to an understanding of settlements and the location of many economic activities, is not mentioned in a popular university human geography textbook (Daniels *et al.*, 2012). The school subject is, therefore, different from the academic discipline, and while the former can learn from developments within the latter, it has to select and simplify knowledge in ways that may not mirror academic geography.

Here, therefore, I will adopt the second view of powerful knowledge, i.e. about the intellectual powers that knowledge may give students. The statements quoted above (Young, 2008, 2013, 2014a) to describe this view identify knowledge as powerful if it 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
- have some power over their own knowledge
- be able to engage in current debates of significance, and
- go beyond the limits of their personal experience.

Whether these abilities are powerful is a matter of subjective judgement, because what one person regards as powerful may not be seen as such by

another. Some abilities concern higher levels of understanding, which may or may not be considered to be powerful, while others are concerned with the capacity to create change, which ought to qualify as powerful. They can be grouped into five types of knowledge, each of which is discussed below.

### Type 1: Knowledge that provides students with 'new ways of thinking about the world'

Ways of thinking are powerful because they may provide a student with new perceptions, values and understandings, new questions to ask and new explanations to explore, and may change their behaviour. Geography's ways of thinking are embedded in its major concepts, of which the most fundamental are place, space, environment and interconnection. While these are not substantive concepts like 'city' or 'climate', they can be described as meta-concepts (or concepts about concepts). Their role is 'to generate, at the meta-level, conceptual tools that inform the development of concepts, substantive theories and explanatory schemes, and that underpin the design of empirical studies' (Sibeon, 2004, p. 13). Consequently, they are difficult to define in a single sentence because they have more than one dimension.

Place is a particularly rich concept, which Creswell describes as a way of 'seeing, knowing and understanding the world' (2004, p. 11). There are many dimensions to the concept, one of which is summed up in the following statement:

*'Each place is unique in its characteristics. Consequently, the outcomes of similar environmental and socio-economic processes may vary between places, and similar problems may require different strategies in different places.'*

This statement says that each place is unique in its environmental and human characteristics, and therefore the outcomes of similar processes may differ because of their interaction with the varying characteristics of each place. It also says that strategies to address similar problems need to take account of the distinctive characteristics of a place, which could be its environment, culture, economy, leadership or past experience. This is the core of geography's contention that 'place matters'. Everything exists and every event happens in a place. The varied characteristics of these places influence what exists and what happens. This fundamental part of thinking

geographically is identified by David Lambert (2014b) as part of geography's powerful knowledge. It is powerful because it influences thinking about ways of explaining and ways of addressing problems.

## Type 2: Knowledge that provides students with powerful ways to analyse, explain and understand the world

Michael Young argues that knowledge is powerful when it enables students to better understand and explain phenomena or events. He writes:

*“Powerful knowledge” is powerful because it provides the best understanding of the natural and social worlds that we have and helps us go beyond our individual experiences’* (Young, 2013, p. 196).

In geography I suggest there are three forms of knowledge that can have this power. These are concepts that have analytical power, concepts that have explanatory power, and generalisations.

### Analytical concepts

Geography's concepts can be used analytically in ways that are distinctive to the subject. Place is a good example. A major report on geography in the United States argues that ‘Places are natural laboratories for the study of complex relationships among processes and phenomena’ (Rediscovering Geography Committee, 1997, p. 30). While geographers generally cannot conduct experiments to test for relationships, except in some areas of physical geography, they can conduct controlled comparisons of places to test relationships between selected variables. Diamond and Robinson (2010), writing largely about research in history, describe this analytical technique as the natural experiment or comparative method. In geography teaching the method could be used to identify the effects of a specific variable (such as climate or culture) by comparing a number of places that are similar in one of these characteristics, but different in others. For example, students could investigate the influence of climate on ways of life by selecting several places in the world with a similar climate, and finding out whether the ways of life in these places were similar because of the effects of climate, or different because of the influence of other factors. They might discover that semi-arid areas have ways of life varying from a hunter-gatherer society to commercial cattle raising, mining and tourism. From this they might therefore conclude that

climate does not have a strong influence. Similarly, students could investigate the factors affecting crop yields by comparing places with different wheat yields, and identifying the variables causing the differences. These factors might include levels of rainfall, types of soil, irrigation methods, access to technology and distance to markets.

### Explanatory concepts

The concept of interconnection is fundamental to explanation in geography, because causal relationships are about the connections between causes and effects. These connections involve processes or mechanisms that seek ‘to show how – by what means, through which networks – particular outcomes materialize’ (Gregory *et al.*, 2009, p. 586). For example, the physical and chemical processes involved in weathering describe the mechanisms (such as freeze-thaw) that are the connection between weather and the wearing down of rock; and the process of urbanisation describes the mechanisms (such as changes in the structure of the economy towards secondary, tertiary and quaternary industries), which explain why economic development results in major changes in the spatial distribution of population.

Causal relationships between interconnected phenomena may operate in both directions. For example, within places climate has a major influence on natural vegetation, while the removal of this vegetation can affect the climate by changing patterns of precipitation. In this way climate and vegetation are interconnected. Similarly, some of the characteristics of a town are influenced by its economic role, so that manufacturing and mining towns are different in the characteristics of their populations from towns in agricultural areas, or towns based on tourism. These population characteristics can in turn influence the economy of a place (e.g. the way that the migration of young people out of country towns can affect their economic development). Here, it can be seen that the economies and populations of places are interconnected.

Interconnections between places also produce causal relationships. These interconnections include environmental processes, the movement of people, flows of trade and investment, the purchase of goods and services, cultural influences, the exchange of ideas and information, political power, international agreements and other relationships. They may be between places at the same level of scale – such as the flows of water within a river catchment, or of trade between two cities – or between places at different levels of

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scale – as in the influence of national government policies on individual manufacturing places. The interconnections could be through the spread of fashions in music or clothing from one country to another, in which tastes in one place are influenced by trends in other places. Or they could be through the movement of people from one place to another, such as the interconnections Australian places have with the places from which migrant groups have come. The significance of these interconnections is that they change the places that are connected. Thus, to explain what a place is like, and especially why it is changing, one must look at its interconnections with other places.

### Generalisations

Generalisations are ‘a synthesis of factual information that states a relationship between two or more concepts’ (Mckinney and Edgington, 1997, p. 2). They can be powerful for two reasons. One is that they summarise lots of information, making it easier to remember and understand. More importantly, however, they ‘allow students to apply what they have learned to new settings and to transfer prior knowledge to new situations’ (Shiveley and Misco, 2009, p. 76). This enables students to ask appropriate questions and make sense of contexts beyond their experience. Counsell, writing about the teaching of history, argues that ‘As with other disciplines, only when young people can generalise appropriately, find explanatory power and challenge the grounds of others’ generalisations can they hope to engage with serious political discourse’ (2011, p. 202).

For example, through their study of natural hazards students could develop this generalisation:

*‘Each type of environment has its own natural hazards. The impact of these hazards on people is determined by both human and environmental factors, and can be reduced but not eliminated by prevention, mitigation and preparedness.’*

This statement synthesises a lot of information about different natural hazards around concepts about their causes and ways of responding to them, and tells students several important things. The first is that all environments can have natural hazards, even the inner urban areas of temperate cities that do not experience tropical cyclones, bushfires or drought. The second is that the economic impact of natural hazards is the result of human as well as environmental causes, thus, when investigating an unfamiliar hazard, students should look beyond the environmental causes of damage. They may discover, for example, that flood damage has been increased by vegetation

clearance, the draining of the wetlands that previously absorbed flood waters, the straightening of river channels or the expansion of settlements on floodplains. The third is that there is a variety of strategies that can be used to reduce the impact of a hazard, so students should look beyond a single answer. Students can use this generalisation to investigate and understand any natural hazard event, by asking appropriate questions.

Generalisations can be especially powerful if they contain explanatory mechanisms and, therefore, they can be used to predict. This example is from economic geography:

*‘Because of the advantages of geographical concentration, economic activities tend to cluster in space unless tied to the location of natural resources or dispersed customers.’*

This statement is powerful, not only because it synthesises our knowledge of the location of primary, secondary, tertiary and quaternary activities into one deceptively simple generalisation, which should help student understanding, but also (and perhaps more importantly), because it adds a major explanatory concept: that of geographical concentration. Consequently, it can be applied to forecast the future pattern of economic activity in a country, using anticipated changes in the structure of the economy. It is also a generalisation that students may be able to challenge by finding examples that do not fit, which is likely to be a valuable exercise educationally and geographically.

Generalisations that can be used to forecast are particularly powerful when they provide a ‘basis for suggesting realistic alternatives’ (Beck, 2013, p. 179). Students may be able to use their knowledge to forecast what might happen, and compare this with what they would prefer. They can then think about how their preferred future could be achieved, given their understanding of the processes influencing that future. Such an approach can enable young people to identify ways of taking actions to improve their own and others’ futures.

### Type 3: Knowledge that gives students some power over their own knowledge

The idea for this type of powerful knowledge came from thinking about this statement by Michael Young:

*'Knowledge in the sense we are using the word in this book allows those with access to it to question it and the authority on which it is based and gain the sense of freedom and excitement that it can offer'* (2014c, p. 20).

I interpret Young's statement to mean that one type of powerful knowledge is knowledge that teaches students how to evaluate claims about knowledge itself, because this gives them the opportunity to be independent thinkers able to be critical of the opinions of others, including those of people in positions of power. To do this, students need to know something about the ways knowledge is created, tested and evaluated within geography, and therefore about geographical reasoning. Firth makes a similar point when he argues that 'a crucial aspect of the learning of school subjects is challenging or questioning knowledge claims in the way the discipline does' (2015, p. 63). This requires students to learn the epistemic tools provided by the discipline to construct knowledge. Also important in giving young people some power over their own knowledge is knowing how to find knowledge. This does not just mean the ability to undertake an academic research project, but also to find information already available, and make sense of it. This enables young people to be independent of the dominant sources of information in society.

## Type 4: Knowledge that enables young people to follow and participate in debates on significant local, national and global issues

The ability to follow and participate in public debates is essential to full and equal participation in society and its conversations about itself, and without this ability young people lack power. Wheelahan writes:

*'a capacity to use knowledge from the humanities and social sciences provides students with a way of assessing arguments in politics and evaluating competing policy proposals, while a broad understanding of the scientific method provides at least some access to debates about how humankind should shape its relationship with the natural world, as exemplified by debates about global warming'* (2010, p. 2).

This is a strong justification for using geography to examine current issues, and capitalising on the subject's ability to integrate knowledge from the

natural and social sciences as well as the humanities.

## Type 5: Knowledge of the world

If powerful knowledge is knowledge that takes students beyond the limits of their own experience, then a geography that teaches students about places that are beyond their experience must be regarded as powerful. This is knowledge about the world's diversity of environments, peoples, cultures and economies, which may stimulate young people's curiosity as well as engendering wonder and awe. It is also knowledge of their links with other places and the interconnectedness of the world, which may develop a sense of global citizenship. It is more general knowledge than that in Type 4, because it is not tied to a current event or issue.

## Conclusion

This article has explored the concept of powerful knowledge and what it might mean for school geography. It identified five types of geographical knowledge that constitute intellectually powerful ways of thinking, analysing, explaining and finding out, and these could be applied to thinking about the aims of a geographical education. However, except perhaps for Type 5, the concept does not lead to a list of content that must be taught, but only to ways of thinking that should be developed through whatever content is selected. Adopting this approach to geographical education could also help students to make more sense of the factual content of the curriculum, by learning how to synthesise information into generalisations or to use explanatory concepts, and to see coherence in what can often appear a somewhat disordered and sprawling discipline. In addition, the concept of powerful knowledge provides a way to communicate geography to non-geographers, by describing its ways of thinking, understanding and explaining as well as its factual knowledge, and demonstrating that these ways of thinking and understanding are both educationally valuable and not taught in any other subject. Given the lack of understanding of our subject in the community and among education administrators, this could be powerful for geography.

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