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Research on the Construction of Geography as a Senior Secondary School Subject

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The paper details an approach for engaging in research into how historically the geography curriculum has been constructed as a senior secondary school subject in countries throughout the world. It begins with a broad outline of the historical development of geography internationally as a subject. It then describes the existing corpus of research on the history of curriculum and particularly the history of geography as a school subject. The third part of the paper outlines the theoretical framework that could underpin such a study. Finally, the paper details the approach that could be adopted.

Introduction

This paper details an approach for engaging in research into how historically the geography curriculum has been constructed as a senior secondary school subject in countries throughout the world. It is presented in four parts. The first part provides a broad outline of the historical development of geography internationally as a subject. The second part of the paper describes the existing corpus of research on the history of curriculum and particularly the history of geography as a school subject. The third part outlines the theoretical framework that could underpin such a study. The final part of this paper details the approach that could be adopted.

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Broad Outline of the Development of Geography as a Subject

As a subject, geography has existed since the ancient Egyptians, Babylonians and Greeks became curious about their own world. Indeed, it was the Greeks who gave the subject the name that for them meant 'a description of the earth' (Graves, 1984, p. 2). Nevertheless, the establishment of geography "as a modern science" did not take place until the century from 1750 to 1850 (Hartshorne, 1939, p. 211). Further, when it was offered initially in certain institutions of higher learning the "substance of what was taught varied immensely" (Graves, 1984, p. 32). The two "great masters" of this "classical geography" period (James and Martin, 1981, p. 113) were Alexander von Humboldt (1769-1859) and Carl Ritter (1779-1859). Indeed, they are referred to by many writers (Hartshorne, 1939; Taylor, 1953; Capel, 1981; James and Martin, 1981; Caraci, 2001) as the 'founders' or 'fathers' of modern geography because of their influence beyond Germany.

The works of Humboldt and of Ritter were taken up in Britain by Halford Mackinder (1861-1947) and Andrew John Herbertson (1865-1915), and in France by Paul Vidal de la Blache (1845-1918) and Jean Brunhes (1869-1932) (Schelhaas and Honsch, 2001). Mackinder actively promoted a perspective on geography that became known as 'the new geography' (Mackinder, 1887; Walford, 2001). Soon afterwards Herbertson divided the world into regions according to climate, vegetation and physical features, with each region, according to him, being in some way unique (Herbertson, 1905). Both scholars also continued to influence the teaching of geography for the next 60 years (Graves, 1996).

In France the writings of particular academics were influential in the development of geography as a coherent discipline (Berdoulay, 2001). De la Blache promoted the theory of 'environmental possibilism' which is a view that the physical environment provides the opportunity for a range of possible human responses to it (Freeman, 1961). Alongside him, Brunhes was a leading exponent of French 'systematic' as opposed to 'regional' geography.

In the United States of America (USA), two schools of geography emerged both of which were heavily influenced by German theories and theorists. One of these was led by William Morris Davis (1850-1934) who considered geomorphology to be the foundation of the subject. He described its development as having passed through three stages to end up being dominated by the 'causal notion' that all phenomena occurring on the earth's surface are related (Davis, 1902). The other school was led by Ellen Churchill Semple (1863-1932) and was concerned exclusively with human geography (Hartshorne, 1939). She was the modern champion of 'environmental determinism', which is the view that the physical environment determines human activity.

By the end of the 19th century geography was being offered as a university subject in Germany, France, Britain and the USA (Johnston, 1979; Graves, 1984). The prevailing paradigm was what later was referred to as 'man[1] and his environment'. In Britain just prior to the commencement of World War One the subject, which had that orientation, was at times and in places taught under two headings, namely physical geography and political geography (Freeman, 1961). Further, as Graves (1996) and Peet (1985) have concluded, an early form of environmental determinism influenced the intellectual origins of geography textbooks in the late 19th and early 20th century and was also the essential position underpinning the geography approach that became part of the academic field of science.

Internationally the 'new geography' spread from Britain to its colonies, including Australia (James and Martin, 1981). The British born and Australian educated geographer, Griffith Taylor (1880-1963), "the Founding Father of Australian academic Geography" (Spate, 1972, p. 115) introduced modern geography in Australia. In

[1] The use of gender-neutral terms are the current convention but historically the terms 'man' and 'mankind' were used as the default terminology. Although it is recognised that these terms are outdated they have been used in this paper to reflect the policy documents consulted during the study outlined here.

1920 he was appointed associate professor and foundation head of the nation's first university geography department at The University of Sydney. He also went on to write books that became standard school texts in Australia for many years (Spate, 1972).

The main focus of geography in universities internationally during the late inter-War years (1918–1939) was to produce syntheses. In certain constituencies also the subject was not considered to be a science. Rather it was deemed to be

> …an aggregate of sciences to gather up the disparate strands of the systematic studies, the geographical aspects of other disciplines, into a coherent and focused unity [in order] to see nature and nurture, physique and personality as closely related and interdependent elements in specific regions" (Wooldridge, 1956, p. 53).

During World War Two (1939-1945) geographers were in high demand internationally for the production of handbooks and to work in military intelligence. Additionally, they were involved in planning post-war recovery. Further, the end of the War was a watershed occasion in geography as it entered its 'contemporary period' (James, 1972). At this time German geography emphasised geomorphology and settlement with the theme of landscape ('Landschaft') being central.

In France, Britain and America the regional geography paradigm was dominant by 1945 (Claval, 1984). British geographers at that time did not arrive at original conceptions. They were, however, able to influence developments within the discipline across the British Empire, including in Australia.

After 1945, geographers in many countries were able to avail of integrated data sources, aerial photographs, accurate topographic maps and synoptic meteorological data. They also developed new skills to interpret these sources. Further, university departments of geography expanded in terms of both staff and student numbers and new and improved facilities were provided. That development in

the tertiary education sector was influenced by the expansion of the subject in schools (Johnston and Gregory, 1984).

The evolution of contemporary Anglo-American geography did not progress neatly from 1945. Rather it took place through a series of 'revolutions'. Seven of these were identified and termed the "quantitative, methodological, conceptual, statistical, models, behavioural and radical revolutions" (Johnston, 1979). On that, Bird (1977, p. 105) remarked that "so many revolutions in so short a time indicate in themselves…a continuously rolling programme".

The first revolution in Anglo-American geography, namely, the quantitative one, commenced in the 1950s. It was associated with engagement in spatial analysis in most aspects of the discipline (Newby, 1980). As Newby put it, this "was a change not only in method but also in paradigm" (Newby, 1980, p. 13).

Interest in universities in North America at the time in understanding the physical environment more broadly waned with the excising of climatology and biogeography from their geography curricula. It was replaced by introductory courses in physical geography usually in relation to regional contexts. In Britain during the same period, university geography students tended to specialise in their final year of undergraduate studies in either physical or human geography (Johnston, 1979). Here disillusionment with physical geography also began to grow as human geography started to grow in popularity. On this, it was claimed "that the insistence of the primacy of regional geography was undermining the associated systematic studies" (Johnston, 1979, p 41).

American geographers were more preoccupied than their British peers with the philosophy and methodology of geography. Consequently, the revolution against the regional paradigm originated in the USA. While one should not lose sight of Johnston's related observation on this that "dating the origin of a change in the orientation of a discipline, or even a part of it is difficult" (Johnston, 1979, p 57), a noticeable change certainly occurred following the publication of a paper in the USA in 1953

by Schaefer (1953), a refugee from Nazi Germany. That work "is often referred to by those who seek the origins of the quantitative and theoretical revolutions" (Johnston, 1979, p. 42).

Schaefer criticised the regional geography paradigm as being ideographic when, as he put it, science subjects are nomothetic. Accordingly, he was brought to redefine geography as the science of spatial arrangements. American geographers responded by adopting the philosophy and methods of the logical-positivist school of philosophy in the conduct of research in the discipline, confident "in their ability to produce laws to work within the canons of accepted scientific method" (Johnston, 1979, p. 60). Soon considerable attention was being given to "quantification, to statistical description of patterns, and to statistical manipulation and testing of hypotheses" (Martin, 2005, p. 235).

As regional geography moved away from being the core of the discipline, specialisation began to increase. At first, that assumed the character of systematic groupings, including economic geography, urban geography, political geography, population geography and historical geography, alongside climatology, pedology, geomorphology and biogeography. Soon areas of study became further subdivided and specialty groups emerged. Accordingly, while as Martin observed in the early 21st century "American geography seems to have a periphery without a core" (Martin, 2005, p. 424) by 2004 there were 52 specialty groups within the Association of American Geographers (Martin, 2005). At that late point Anglo-American geography was considered to be characterised by eclecticism, fragmentation, individualism and innovation. On that, Martin observed that "throughout the period from the 1970s to the present, geography was in a state of turmoil" (Martin, 2005, p. 527).

In many countries during the early 20th century, the geography taught in schools reflected the nature of the subject taught in universities. The USA, however, was somewhat of an exception. Here an integrated social studies curriculum for schools combining geography, history and civics emerged. Further, by the mid 1920s a

surge in the evolution of social studies curricula took place. That sealed for the coming decades the fate of geography and history existing as separate school subjects in schools in the USA (Marsden, 2001).

In Britain by contrast, geography and history became increasingly popular on school timetables with "the separate subject system continuing" (Marsden, 2005, p. 23). Education change in the Australian States largely followed this pattern (Musgrave, 1979, p. 59) with school textbooks being published that had Australian material and sections added to British products. (Lawry, 1972). Therefore, it is not surprising that throughout Australia geography was a separate subject in the senior secondary school curriculum. In some States in the later part of the 20th century including Western Australia, geography, history and economics were combined into one subject entitled 'social studies' at the junior secondary school level.

Existing Corpus of Research

Initially, the research for the study outlined here was stimulated by Goodson and Marsh's (1996, p. 41) argument that "the school subject is a seriously under investigated form" of rigorous historical inquiry on the school curriculum. Tanner emphasised the importance of engaging in the study of curriculum history because knowledge in the field "is essential for improving the character of curriculum reform efforts" (Tanner, 1982, p. 410). Indeed, Bellack (1969) and Hazlett (1979) expressed the view that the inadequate understanding of many of those working in curriculum development meant they were poorly equipped to address contemporary issues central in discussions on the concept of curriculum.

According to Moore, et al. (2011, p. 352) "curriculum is an ambiguous concept and may be defined in a variety of ways depending on the cultural context, education system and level of education." In the design of the study outlined in this paper, Goodson's definition was adopted, namely, that of "a social

artefact, conceived of and made for deliberate human purposes." (Goodson, 1987, p. 260). That meant that any notion of curriculum as a 'given' and the associated risk that it can lead researchers to adopt narrow perspectives and ahistorical epistemologies that take present-day understanding of the past for granted, was avoided.

Goodson (1983, 1985, 1987) also argued for engagement in historical studies on all subjects in the school curriculum across all forms of education systems. Such studies, he asserted, could allow one to examine complex changes over time (rather than having 'snapshots of unique events') to reveal the political interests and motivations of those individuals and groups who championed various elements of curricula. Further, the results of such studies can be viewed as contributing to two main bodies of academic literature, namely, the existing corpus of research on the history of curriculum and the existing corpus of research on the history of geography as a school subject. Each of these will now be considered in turn.

For many decades the history of education focused on three main themes: the history of educational thought and thinkers in education (Straughan and Wilson, 1987; Rorty, 1998; Lawton and Gordon, 2002); the history of education systems (Silver, 1977); and the history of education policy (Lowe, 2000). That thrust led to the development of a number of sub-disciplines, including the history of education aims and policy, history of pedagogy, history of education administration, history of teacher education and history of education research. Within these sub-disciplines some attention was directed to the history of the process of education in schools and institutions of higher education.

Amongst the early works produced specifically on the history of the school curriculum were those undertaken by McCulloch (1987) on England and New Zealand, by Cunningham (1988) on England and Wales, by Musgrave (1988) on Australia, and by Tanner and Tanner (1989) on the USA. The pioneering work of Goodson (1987) on the history of school subjects already noted brought a new sophistication to the field. He was motivated by a view that a

consequence of not engaging in the study of the history of curriculum is 'historical amnesia'. That, he argued, could lead to curriculum reinvention rather than development (Goodson and Marsh, 1996). He rejected the view of the written curriculum as a neutral given, stating that one of "the perennial problems in studying curriculum is that it is a multifaceted concept that is constructed, negotiated and renegotiated at a variety of levels and in a variety of arenas" (Goodson, 1990, p. 299). In similar vein, Hargreaves (1989, p. 56) argued that school subjects are "more than groupings of intellectual thought. They are social systems too. They compete for power, prestige, recognition and reward". Equally, Popkewitz (2009, p. 301) called for an examination of "historically-formed rules and standards that order, classify and divide what is 'seen' and acted on in schooling".

More specifically, Goodson (1990, p. 305) called for an understanding of how "curriculum prescriptions are socially constructed for use in schools; studies of the actual development of courses of study, of national curriculum plans, of subject syllabuses and so on". In particular, he argued that historical studies of school subjects could offer local detail of curriculum change and conflict and serve to identify individuals and interest groups providing examination and assessment of intention and motivation. "Thereby", he concluded, "sociological theories which attribute power over the curriculum to dominant interest groups can be scrutinised for their empirical potential" (Goodson, 1990, p. 309).

Notwithstanding the pioneering work of Goodson and others on the history of school subjects, few researchers responded to the challenge presented at the time. McCulloch (2011, p. 86) at a later date observed:

> …[curriculum history] failed to penetrate the disciplinary boundaries of education, history and the social sciences, but had instead generated uncomfortable tensions over its nature and potential contribution, although it continued to develop and to offer new contributions in succeeding decades.

Relatedly, O'Donoghue (2014, p. 806) argued for a "regeneration" of such studies specifically in relation to Australia. Reflecting also on the Australian context, Campbell (2014, p. 5) drew attention to a lack of "a broad, cohesive, historical study of school curricula from colonial to more modern times".

Other curriculum scholars (Franklin, 1977, 1986, 1991; 1999; Glatthorn, 1987; Wright, 2005) emphasised the importance of engaging in the study of curriculum history and what it can reveal about the purposes of curriculum. Such engagement could, according to Davis (1977) and Kliebard and Franklin (1983), aid one to arrive at a good understanding of why school curricula and the profession of curriculum work developed in the directions they did. Understanding along these lines is valuable, they argued, because any curriculum as it has appeared over time can be an important artefact of culture and what a society wants to preserve and pass on. On that, Rawling (2000, p. 210) noted a tendency in "developed world education systems to use national curricula to reassert national identity, national heritage and national values", and Whalley, et al. (2011, p. 381) asserted that curricula can be "creatures of circumstance", influenced by national needs, histories and government-driven skills and employability agendas.

Regarding research on the history of geography as a school subject it was noted that various scholars (Tan, 1993; Braine, 2005; Burton, 2007; Green and Cormack, 2008; Popkewitz, 2011) adopted Goodson's position in order to study a range of school subjects. The study outlined here was also guided to a certain extent by his position. It was undertaken to contribute to the wider body of knowledge in curriculum history on the geography curriculum. Such a contribution, it is held, is necessary not least because of the variety of definitions and perspectives that exist on the nature of the field of geography. Some have noted "vague frontier zones" (Kirk, Lösch and Berlin, 1963, p. 358) where "geography has meant different things to different people in different places" and where "the 'nature' of geography is always negotiated" (Livingstone, 1992, p. 28).

Not all commentary, however, has been negative. Lambert (2011, p. 249) for example, recognised the value of geography in that it "links with science, with the arts and with other humanities subjects like history" and provides "curriculum coherence" in schools. Additionally, Scarfe (1964, p. 297) observed that the subject "promotes ways of thinking that are distinctly geographical".

School geography also predated the establishment of its counterpart, the university-based discipline (Lambert, 2013). On that, Goodson (1988) revealed that the subject in fact only came to be taught in universities long after having been taught in schools. This, he concluded, was due to the upward pressure on the universities to respond to the demand for geography specialists.

Nevertheless, as with the history of the school curriculum in general and that of other school subjects in particular, Rawling (2000) noted that the history of the geography curriculum was a much-neglected area of research. Indeed, much earlier Freeman (1961, p. 9) had already observed along the same lines, commenting that "the history of geography is not an over-tilled field". Marsden's (1996, p. 264) explanation offered in 1996 for this situation was as follows:

> During the 1960s and 1970s as social scientific paradigms were promoted in an attempt to make academic work in education more respectable, consideration of historical contexts [of subjects such as geography] became increasingly marginalised.

Specifically regarding Australia, Seddon (1987, p. 1) had in a similar tone bemoaned the 'dearth' of curriculum history. The consequence she said, was that Australian curriculum workers did not know their own past. This position, it is arguable, still holds 25 years later.

More broadly, comprehensive studies of geography education internationally from the early 2000s were conducted by Gerber and Williams (2002) and by Lidstone and Williams (2006). In indicating many neglected areas, they overlooked to point out that the history of the subject was under researched. The study outlined

in this paper was undertaken as one attempt aimed to address that deficit.

Theoretical Framework

The theoretical framework underpinning the study outlined here, it will be recalled, is one based on the work of Goodson (1983, 1987, 1990, 1994, 2000, 2005) on the history of school subjects. That framework rejects the view of the written curriculum "as a neutral given embedded in an otherwise meaningful complex situation" (Goodson, 1987, p. 260). Rather, as mentioned earlier, it views curriculum "as a social artefact, conceived of and made for deliberate human purposes" (Goodson, 1987, p. 260). As such, curricula can be seen to consist of continually changing bodies of knowledge, skills and beliefs reflecting diverse interests of sub-groups and alliances that shift frequently over time. Moreover, as Goodson (1983) also claimed, the various interest groups are often in pursuit of an array of conflicting professional, ideological and political goals.

Goodson's framework could be adopted for a study in order to examine the history of the preactive senior secondary school geography curriculum. To study curriculum history at this level is to focus on the prescribed objectives, content and the structures of curriculum documents. It also involves identifying the various individuals and interest groups who partook in their production, and the nature and extent of their influence. By contrast, to study curriculum history at the interactive level is to focus on how the preactive curriculum was mediated in the classrooms, how the subjects or disciplines were taught, what strategies and activities were used, what experiences students had and what learning processes took place.

Goodson made a case for focusing initially on the preactive level in the study of the history of an individual subject in order to increase understanding of the influences and interests functioning at that level. Goodson and Medway (1990, p. 263) in like manner contended that a use of the approach has the capacity to

> …further our knowledge of the values and purposes represented in schooling and the manner in which the preactive definition, notwithstanding individual and local variations, may set parameters for interactive realisation and negotiation in the classroom and the school.

To assert then that the focus of the study outlined here was on the preactive curriculum is synonymous with saying that it dealt with the construction of geography as a subject.

A study of the interactive curriculum would demand a focus on the interactions that took place in classrooms in order to examine how geography as a school subject was mediated. It is recognised that this is equally important work that needs to be undertaken, but from the outset of the study outlined here it was deemed that to do so would necessitate conducting a separate project. Furthermore, it was held that it could not be conducted in a productive manner without first of all having an in-depth understanding of the preactive curriculum.

Research Approach

Four different constructions of geography as a subject for senior secondary schooling were identified in relation to four sub-periods. The analysis within each sub-period was guided by three main research questions:

- What were the background developments which influenced the process of constructing what came to be the dominant approach to the subject, including those associated with major issues, conflicts and compromises that arose?
- What was the actual construction of the subject in the sense of 'construction as product', especially in terms of the stated aims, content, pedagogy and assessment approaches?

- What were the issues, conflicts and compromises that arose following the introduction of the subject for senior secondary schooling?

These were employed as guiding questions to identify data to explore the hypotheses and address the central aim of the study.

The following hypotheses adapted from Goodson's (1983) work could also be used to guide the pursuance of answers to these questions in the initial stages of a study:

- The influences on senior secondary schools for the period under investigation reflected shifting amalgamations of sub-groups and traditions;
- In the process of establishing geography as a subject for senior secondary schooling there was a progression from promoting pedagogic and utilitarian traditions to an academic tradition;
- Much of the debate that occurred about geography as a subject in the curriculum for senior secondary schooling can be interpreted in terms of wider conflict both within and between subjects over status, resources and territory.

Further, a wide variety of primary and secondary source materials should be located and analysed. Examining these enables the researcher to acquire an understanding of the influence of various individuals and interest groups involved in the creation of curriculum documents and to reveal aspects of curriculum contestation that in some cases, indicated inaccuracies, misinterpretations, bias and prejudice. Various secondary sources can also be drawn upon.

In addition to using 'traditional' historical approaches to the analysis of sources, various theoretical positions could also be drawn upon. The first of these in the study referred to in this paper was based on Goodson's work (1987). His advice that one should, in the first instance, focus only on the preactive curriculum could be followed. The related analysis could be undertaken at two levels.

First, there would be an internal analysis of various relevant curriculum documents. That could be followed by an external analysis to ensure that consideration was given to the broader environmental, social, economic and political contexts. In other words, patterns uncovered during the internal analysis can be considered in their relationship to such aspects of the wider context as the nature of senior secondary schooling, the structure of society, technological changes, the economy, the political and philosophical viewpoints. On this, attention should be paid to the advice of curriculum theorists (Taylor, 1979; Lawn and Barton, 1981) who have emphasised the importance of considering historical and contextual factors, and to Lawton's declaration that "it is difficult, if not impossible to discuss curriculum issues without viewing them in the social, cultural and historical context" (Lawton, 1980, p. 306).

The researcher should also be mindful of the need for historians to carefully examine their sources by asking questions that might lead to the creation of further questions and further gathering of evidence (O'Donoghue, 1992). On this, Seddon (1989, p. 8) suggested a process of "analysing the constellation of elements and their interaction" that can reveal relationships between past, present and future. In similar vein, Tanner (1982) asserted the importance of examining curriculum history documents to reveal incremental changes over historical time.

Another theoretical position that could inform the analysis is Beeby's stages of development in education systems (Beeby, 1966). Although this position was first elaborated many decades ago, the present author holds that it has stood the test of time as useful heuristic for use in research of the type detailed here.

Beeby proposed that historically the role of the teacher has changed across four key stages: the "Dame School Stage", the "Stage of Formalism", the "Stage of Transition" and the "Stage of Meaning". He also proposed that growth in the quality of education moves through these stages. Further, he proposed that this is closely aligned with the education and professional training of teachers.

The Dame School Stage is characterised by ill-educated and untrained teachers who are only able to teach narrow subject content (the 'three Rs') through rigid techniques of memorisation. In the Stage of Formalism teachers are still ill-educated but have received a basic training. Teachers now are highly organised, employing rigid methods ('one best way') that rely on rote learning and the use of a few prescribed texts. Further, tight discipline is maintained.

The Stage of Transition is characterised by teachers who are better educated than teachers at the Stage of Formalism and they also have received basic training. While rote learning still takes place, emphasis is placed on understanding the meaning of what is being taught, even if what takes place in this regard is 'thin' and formal. Syllabii and textbooks are also less restrictive, but little effort is made to cater for the child's emotional and creative needs.

In the Stage of Meaning, teachers are well educated and well trained. A wide curriculum is offered, and the learning experiences involve the use of a variety of content and methods, including problem solving, to cater creatively for individual differences. Discipline is relaxed, a positive approach is adopted, and buildings and equipment are better than they were in the previous stages.

While Beeby's theory has direct relevance to teaching practice, it also places a realistic emphasis on the gradualism of change. That perspective was found to be useful by the present author in considering how curriculum subjects have developed. In particular, it provided a framework that was of assistance in locating the general position and orientation of geography as a subject for senior secondary schooling at particular points over the period considered.

It was recognised also that a comparative approach is helpful when engaging in research on curriculum history. According to Crook and McCulloch (2002), the benefits of cultivating such an approach to the history of education are threefold. The first is to gain an insight into comparisons and contrasts of the education in the past. The second benefit is to enhance understanding of the influences

and interactions including at the international level to take account of the influences of globalisation. The third benefit is to generate and inform overarching theory and general patterns.

Crook and McCulloch (2002, p. 399) went on to say that they regretted the apparent separation of the 'comparative' and the 'historical' in education research:

> In spite of the clear benefits to be gained from comparative approaches to the history of education, and the existence of some fine exemplars of how to go about such work, it may be said that the 'comparative' and the 'historical' have tended to develop as distinct fields of study with separate concerns and characteristics.

The latter point is similar to that elaborated on by Cowen (2002), who concluded that while comparative education has always had a strong notion of space, it has been relatively weak in its handling of time. That weakness, he suggested, can have a negative influence on contemporary research in comparative education.

Analysis of Examination Papers and Textbooks

Several examination papers in a particular subject could be chosen for analysis to identify general patterns of aspects of the curriculum examined and aspects omitted from examination papers. This analysis can be extended by using Bloom's taxonomy of educational objectives in the cognitive domain to examine the examination questions (Bloom, et al., 1956). This taxonomy is divided into six levels: knowledge, comprehension, application, analysis, synthesis and evaluation, with knowledge deemed the lowest form of cognitive thinking and evaluation the highest. This taxonomy can be useful primarily because it allows one to distinguish easily between higher order questions and lower order questions. The questions in selected papers could be examined in relation to the verbs in the cognitive domain associated with each objective. These describe the complexity of thinking behaviour required to answer a question.

Further, examiners require candidates to demonstrate skills, knowledge and understanding and the ability to apply them. Such requirements were termed 'demand' by Edwards and Dall'Alba (1981) who developed a 'scale of cognitive demand'. The concept of demand in it is derived from a range of learning and thinking theories, including those of Ausubel, et al., (1978), Bloom et al., (1956), Bruner, (1966), de Bono (1976), Gagne (1965), Taba (1962, 1967), and also from the work of Piaget as interpreted by Novak (1977).

The scale considers demand to have four interactive dimensions: complexity, openness, implicitness and level of abstraction. Each dimension contains six levels of demand, defined by phrases and command words typically used in examination questions. To increase flexibility Hughes, Pollitt and Ahmed (1998) introduced a revised scale known as the 'CRAS Scale' that could be used, they held, for analysis of examination papers in "most of the disciplines (mathematical, literary, and physical and social scientific)" (Hughes, Pollitt and Ahmed, 1998, p. 18). CRAS is an acronym for complexity, resources, abstractness, strategy.

Additionally, the level of question structure can be identified as structured, semi-structured and unstructured. Furthermore, a research study in England by Pollitt, et al. (1998) analysed the effect of question structure on the demands made of candidates sitting examination papers at GCSE and A Level in Geography, Chemistry and History. They identified five types of structuring in examination questions that allow the candidate to demonstrate knowledge of a subject while reducing the need to draw on linguistic skills usually demonstrated through writing essays. Analysing the types of question structuring provides a deeper understanding of a particular subject's examination papers.

While the examination papers were the principal influence on what was taught, textbooks were also influential. A driving principle for this is that the textbook is a key resource that teachers use in the classroom (Broom, 2011) and it often defines what is legitimate knowledge to pass on (Graves and Murphy, 2000). Thus, it was

argued, research on textbooks can indicate how they reflect a society's culture and the technological stage of the society. Accordingly, the textbooks prescribed in a curriculum could also be analysed to provide further insights in certain aspects including tracing the origins of ideas in a subject, revealing the author's conception of the discipline and the textbook's education purpose. Graves and Murphy (2000, p. 228) also claimed "textbooks are a reflection of the society that produced them".

Various frameworks for analysing textbooks can be consulted with a view to selecting one relevant to a particular study. For the study outlined in this paper the framework that was adopted focussed on the spatial characteristics of geography textbooks to compare the amount of space expressed as a percentage given to text, to illustrative material and to activity material (questions and exercises) on each page as developed by Walford (1995).

Conclusion

This paper detailed an approach for engaging in research into how historically the geography curriculum has been constructed as a senior secondary school subject in countries throughout the world. It was presented in four parts. The first part provided a broad outline of the historical development of geography internationally as a subject. The second part of the paper described the existing corpus of research on the history of curriculum and particularly the history of geography as a school subject. The third part outlined the theoretical framework that could underpin such a study. The final part of this paper detailed the approach that could be adopted for research in other school subjects in other settings internationally.

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