

**The Subject Conceptions and  
Practice of Pre-Service Geography  
Teachers in Singapore  
2013**

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## **Abstract**

This thesis focuses on understanding the complex relationships between geography teachers' conceptions and practice. Through the use of a Foucauldian (1971, 1979) perspective on discourse, knowledge and power, it examines the discursive structures that produce knowledge about geography and 'good' geography teachers (Moore, 2004) in Singapore. The research explores why pre-service teachers conceive geography in particular ways, and the links between their conceptions and practice. It emphasises the ways in which discursive power affects this relationship.

The study focuses on six geography pre-service secondary school teachers over the course of one year of teacher education. Utilising concept maps, elicitation exercises and in-depth interviews, it highlights that the national curriculum was powerful in shaping respondents' discussions of geography, but its impact was mediated by their own professional identities and past experiences of geography. The data also suggests that these conceptions did not always translate into practice because of discourses operating in the school context, which placed respondents in asymmetrical power relationships with their mentors. The mentors' conceptions of 'good' geography teaching usually influenced respondents' practice more than their own conceptions of geography. Nevertheless, respondents sometimes resisted their mentors, especially if they experienced conflict between the type of teaching that was demanded of them and their own professional identities.

The research calls on teacher educators and policy makers to acknowledge that programmes to develop teachers' knowledge in their academic disciplines can be undermined by powerful competing discourses that stress examinable content in school curricula. It highlights the need for teacher education institutions to examine their partnerships with schools for possible conflicts between discourses about 'good' teaching in schools and institutional intended outcomes. It suggests that there is a need to strengthen the professional identities of teachers as 'geographers' given that identity forms an important base from which teachers respond to discourse.



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## **Chapter One: Introduction**

### **1.1 Purpose of Research**

Lee Shulman first drew attention to the importance of research on the subject matter knowledge of teachers in his address to the American Educational Association, claiming that knowledge of how to teach subject content is the particular preserve of teachers (Shulman, 1986). Following this address, research into teachers' subject matter knowledge and its relationship to teachers' practice took off in the United States (e.g., Shulman, 1987; Wilson et al., 1987; Grossman et al., 1989) as well as in the United Kingdom (Calderhead, 1996 for an overview). In general, it was argued that understanding teachers' knowledge and how teachers' knowledge developed with practice over time could provide insights that teacher educators and those concerned with the professional development of teachers could utilise to better inform their programmes.

Within geography education, there was a similar interest in teachers' subject knowledge and its relevance to their classroom practice (Barratt-Hacking, 1996; Jewitt, 1998; Corney, 2000; Kwan & Chan, 2004; Martin, 2005; Brooks, 2007, 2010). This occurred in tandem with larger debates in education about what young people needed to know in order to be informed and active citizens, and the role of a geographical education in helping to achieve these outcomes. The Geographical Association in the UK published its manifesto *A Different View* (2009: 5), which emphasised geography's role in 'thinking and decision making' and in helping us 'to live our lives as knowledgeable citizens'. The executive summary of *a Road Map for 21<sup>st</sup> Century Geography Education* (2013: 1) in the USA also highlighted that

...geography education is essential in preparing the general population for careers, civic lives, and personal decision making in contemporary society. It is also essential for the preparation of specialists capable of addressing critical societal issues in the areas of social welfare, economic stability, environmental health, and international relations.

This recognition of the relevance and purpose of geography therefore goes hand in glove with the focus on how teachers' geographical conceptions affect the teaching of geography in schools. However, there is little consensus on the nature of both teachers' knowledge and its relationship to their practice, apart from a tacit agreement that teachers' conceptions are complex and subject to multiple contextual influences. Given the paucity of research on this, I was therefore interested to investigate the nature of the subject conception-practice link and address the lack of consensus in this research.

The literature on teachers' knowledge in the UK and USA is relevant and can be applied to the Singapore context. Since the launch of *Thinking Schools, Learning Nation* (TSLN) in 1997, a 'veritable hurricane of reform initiatives' (Gopinathan, 2003: 51) has occurred in the Singapore education context (see Chapter Three for more details). These have had far-reaching consequences for teachers' work. One particular strategy *Teach Less, Learn More* (TLLM), announced in 2004, signalled a shift in the focus of classroom instruction away from past practice of teaching for examinations towards creativity, innovation and critical thinking (Hogan and Gopinathan, 2008). Implicit within TLLM is an expectation that teachers have a firm grasp of subject content. Research in Singapore on teachers' subject knowledge in Science suggests that the more developed the subject matter knowledge of the teacher, the more likely he/she would engage in discussions about the nature of Science rather than pursue a rote-learning approach in the classroom (Roy,

1987). However, apart from studies in Science (Ho, 2003; Tan, 2006), English (Skuja-Steele, 1995; Ang, 1999) and History (Tan, D.H, 2005; Yeo, 2002) teachers, and in the area of e-learning (Churchill, 2004), research on teachers' knowledge remains relatively undeveloped in Singapore. To date, there has also not been any study that focuses on geography teachers.

This research therefore seeks to contribute to the subject conceptions research in general as well as in the Singapore context. Drawing upon Foucault's perspectives on discourse (1971, 1979) acting at the 'capillary' level on uniquely situated individuals, it analyses how discursive power frames what pre-service teachers say they know about geography and affects how they teach it. It also argues that using this analytical lens allows us to view the subject conceptions articulated and the extent to which they influence practice as negotiated individual responses to larger discursive structures. This understanding can inform teacher education programmes and policies by explicitly addressing the power structures and imbalances that negatively affect the development of teachers' knowledge and practice.

An analysis of discursive power is particularly relevant to Singapore because of the specific ways in which the Singapore state affects and controls what is considered 'valuable' knowledge in education, in geography and in teacher education (see Chapter Three for more details). The degree of centralised control by the state is also greater relative to the UK and the USA, on which most of the literature was based. There is therefore a greater level of homogeneity implied in the Singapore context, thereby

providing a more uniform backdrop of discursive power networks on which to base the research. However, even within the Singapore teacher education context, highly different responses to discourse and power are still possible. This is due to the fact that each individual may be situated differently within discourse and may bring different experiences of learning and teaching geography to the table.

The research also focuses on pre-service teachers. Given the lack of research in the Singapore context on teachers' geographical conceptions, it made sense to study pre-service teachers rather than their more experienced counterparts. This establishes a baseline for future studies on how teachers' subject conceptions develop over time. The next section discusses the key conceptual understandings that underpin the research and outlines the research questions that drove the investigation.

## **1.2 Conceptual Framework and Research Questions**

### Conceptions of Geography

Foucault frames power as 'discourse' – 'the parameters within which our perceptions of the social world and our actions within it are framed' (1971: 46). In this study, teachers' subject conceptions are viewed as framed partly by the 'contestation and compromise' between different sub-groups and traditions (Goodson, 1997: 64) within academic geography, as well as within school geography. Unwin (1992), for example, documented how geography had undergone distinctive phases in tandem with larger paradigmatic changes in research and academia in general. Lambert and Jones' edited book (2013) captured the debates within geography education - what is geography as well as what

aspects of geography should be included in the curriculum. However conceptions are affected by discourses beyond the subject context as well. These include discourses operating within the contexts of larger national education and teacher education, as well as within the contexts of the schools in which they work (discussed in terms of the literature in Section 2.3 and in Singapore's case specifically in Chapter Three).

In my research, teachers are perceived as being situated within a complex web of discursive power operating within and between various contexts and levels, which form the parameters within which they understand geography . Foucault (1980: 39) states that

...In thinking about the mechanisms of power, I am thinking rather of its *capillary forms of existence*, the point where power *reaches into the very grains of individuals*, touches their bodies and inserts itself into their actions and attitudes, discourses, learning processes, and everyday lives [italics my own].

In this framing of power, authority does not reside with one person or one group of persons. Instead invisible and diffused forms of power interact to affect each person in highly idiosyncratic ways, allowing for an examination of individual and personal responses to discourse based on situated contexts and *who* each person is. Prior studies had already investigated the the influence of personal contexts on teachers' subject conceptions of geography (Brooks, 2007; Catling et al., 2010). However they do not explain why the personal context matters more in some cases than others. In this study, analysing each person's unique position within networks of discourse could explain why some individuals draw upon their personal experiences and beliefs more than others when discussing geography.

Although Foucault himself did not theorise the ability of individuals to subvert discourse, others working in the Foucauldian vein have done so, thereby extending Foucault's theory to include the possibility of resistance. Moore (2004: 31), for example, suggests that

...discourses, for all their objective power and dominance, and for all their capacity to infiltrate the consciousness, are neither immutable nor impenetrable...both their constantly evolving nature and *our ability to at least be aware of them* inevitably render them contestable and challengeable [italics my own].

This implies that in examining how discourse shapes conceptions of geography, it is important not to view conceptions as inevitably framed by it. The *consciousness* of discursive power opens up the possibility for resistance, and individuals are innately capable of interpreting geography for themselves in the face of multiple and/or dominant discourses. This focus on teachers' agency relative to discursive structures has been applied to teachers' practice (Moore, 2004; Ball, 2010; Ball et al., 2011) but has not been applied to teachers' conceptions. This thesis foregrounds the issue of teacher agency in making decisions about what to include and leave out when discussing their conceptions in the face of multiple and conflicting discourse about geography. These issues are captured in my first research question:

- 1. How do pre-service geography teachers in Singapore reconcile (and resist) discourse about geography to articulate their conceptions of the subject?**

## Subject Conceptions and Teaching Geography

A critical implication of Shulman's (1986) claim about subject matter knowledge is that it is relevant to teachers' practice. However, there is little consensus on whether these links exist. For example, in geography education, Corney (2000) found that conceptions affected what teachers did, but Barratt-Hacking (1996), Martin (2000, 2005) and Brooks (2007) disagreed. It was argued that this was because broader contextual issues were implicated in the relationship between subject conceptions and practice. McLaughlin and Talbert (1990: 2), for example, aver that the context is important to effective teaching.

... we have come to understand that effective teaching depends on more than teachers' subject knowledge and general pedagogical skills or even pedagogical content knowledge. Effective teaching *depends significantly on the contexts* within which teachers work [italics my own].

The quote above acknowledges the need to understand the contexts in which teachers make decisions about their practice but does not explain why teachers in the same context make different decisions. This thesis argues that a Foucauldian analysis highlights the ways in which discourse influences the relationship differently for each individual to produce specific outcomes in each case.

Moore (2004: 10) suggests that teachers' practice is affected by discourses that frame what it means to be a 'good teacher'. He argues that such discourses are 'essentially produced and sustained by language and knowledge, and controlled and patrolled by ideologies' (pg. 28) and that different types of frames for 'good' teaching exist at any one point, each reflecting variable characteristics and dispositions that are deemed desirable

in a teacher. This conceptualisation of discourse and ‘good’ teaching is important to my study, with the implication that dominant discourses provide the benchmarks against which teachers’ practice is measured. It also suggests that at any point in time, teachers need to respond to and reconcile competing frames of ‘good’ teaching.

While Moore refers to the dominance of the state in perpetuating particular types of ideologies regarding the ‘good teacher’, it is important to note that in Foucault’s (1971, 1979) framing of power, no one individual or group ever fully has control of it. Both the structure and outcome of schools are products of a range of individual and group desires and actions (Ryan, 1991). Therefore the notion of the ‘good teacher’ should not be viewed as imposed unilaterally by one dominant actor (e.g., the state) but rather should be seen as a ‘bottom-up capillary process of social relations’ (Ball, 1993: 112). In examining the links between respondents’ subject conceptions and their practice, the focus of my research remains firmly on the teacher and his/her responses to complex networks of discursive power.

Discourses of ‘good’ teaching, like all other types of discourse, can also be seen as vulnerable to subversion. Judith Butler posits that subject identity is one that is performed and that this performance is the result of ‘political regulations’ and ‘disciplinary practices’ stemming from discourse (Butler, 1990). However, it is precisely because this identity is *performed* that it contains ‘transgressive potential’ (Butler, 1993) - once the individual is conscious of the performance. Drawing upon this perspective, I also investigate teachers’ conscious resistance to dominant discourses and whether this



informs the subject conceptions-practice link. This is captured in my second research question:

**2. How do pre-service teachers reconcile (and resist) discourse in their decisions about *performing* ‘good’ geography teaching? To what extent do they draw upon their subject conceptions of geography in doing so?**

Foucault observes that power produces knowledge and that power and knowledge directly imply one another (Foucault, 1979; Goodson, 1997). In this study, I also examine the ways in which discourses in the teaching context reiteratively feed into teachers’ subject conceptions in my research question:

**3. How and why do pre-service teachers’ conceptions of geography change after Teaching Practice?**

Foucault and the Body

Using a Foucauldian perspective of discourse necessarily extends the discussion of teachers’ conceptions of geography as well as their classroom practice to a consideration of the body. In Foucault’s view, power operates in society through disciplining the body (1980, 1991). Foucauldian scholars like Butler (1990, 1993) argue that human subjectivities are produced by, and exist in, the ways in which discourses shape the body. While Butler originally referred to the development of gendered subjects, educational theorists have also seized on Foucauldian ideas to demonstrate how discourse and power produce particular types of subjects within and through education systems (McWilliam & Taylor, 1996; Tobin, 1997; Baker and Heyning, 2004).

A salient aspect of these studies for my research pertains to the teacher's body and its role in the development of the teacher subject identity. bell hooks (1994), for example, cautions against the Cartesian notion that there is a 'split between the body and the mind', leading to the belief that in classroom teaching 'only the mind is present, and not the body' (1994: 17). Weber and Mitchell (1996) also suggest that people tend to associate teachers with specific bodily characteristics that are indicative of society's normative expectations of teachers' roles and conduct. However, within subject conceptions research, discussions of geographical conceptions and geography teaching remain distinctly disembodied. This study therefore seeks to understand the *types of bodies* respondents imagine do geography, as well as what *doing geography* means to them. However, I do not investigate the body in a separate research question. This is because the body is such an implicit part of subject identity in Foucauldian analysis that it would be conceptually more coherent to discuss its role in subject conceptions and 'good' teaching as part of the research questions outlined earlier.

### **1.3 Significance of the Study**

Although this study focuses on Singapore pre-service teachers, the conceptual framework it proposes is useful in informing subject conceptions research in other contexts as well as with more experienced teachers. This thesis demonstrates how an analysis of discursive power helps us understand why individuals articulate particular versions of geography and not others. It also sheds light on why teachers' subject conceptions evolve and/ or are utilised in teachers' practice in varying ways. This analysis can inform teacher education

and professional development programmes because it helps researchers and policymakers identify what constrains and enables teachers to think about their subjects and their work in specific ways.

This research also investigates the agency of teachers. It recognises that teachers have the potential to resist discourse and examines when and how they do so. Understanding the discursive contexts that support or inhibit teachers' agency is important to teacher educators and those interested in teacher professional development. This is especially so in light of current interest in teachers as curriculum makers (see [geography.org.uk/cpdevents/curriculummaking](http://geography.org.uk/cpdevents/curriculummaking) for an example). The Foucauldian analysis also exposes an assumption in the literature that subject conceptions research and research into teachers' practice involve only cognition. Through extending the discussion of teachers' conceptions of geography and their practice as geography teachers to include what types of bodies they imagine *do* and *teach* geography, this study highlights how bodies are important in shaping teacher identities. This is useful to those interested in studying teacher identities and their influence on teachers' work.

In the following chapter, I elaborate on the relevant literature that framed my research, paying particular attention to the gaps and contradictions my study seeks to address. I also draw upon the discussion in Chapter Two to develop and present a conceptual framework to operationalise the research. In Chapter Three, I outline the salient characteristics of the Singapore education and teacher education contexts insofar as these are crucial to a situated understanding of pre-service geography teachers in Singapore. My analysis of power also implies that careful attention must be paid to the individual

and his/her unique responses to discourse. As such, in Chapter Four, I discuss my research approach and data collection and analysis methods, and I outline the ways in which my research is designed to be sensitive to the nuances of power and its differential effects on each respondent. I also discuss the ethical dimensions of my study and reflexively consider the role of power in my research design and methods. In Chapters Five and Six, I delineate the findings of my research, paying attention to each individual case as well as the broad patterns that emerge from the data, while Chapter Seven sums up the contributions of my study and the implications for future research.

## **Chapter Two: Towards Developing a Conceptual Framework – A Review of the Literature**

### **2.1 Introduction**

This chapter focuses on the literature that has informed my research, and highlights gaps that I seek to address through a focus on discourse and the ways in which pre-service teachers reconcile (and resist) power. In Section 2.2, I examine the field of subject conceptions and its various terminologies and components in order to define the use of the term in my own research. In Section 2.3, the discussion highlights the formative influences on subject conceptions identified in the extant research and discusses the shortcomings of current understandings of the issues. Section 2.4 turns the spotlight on the factors that shape teachers' practice, particularly discursive pressure to be 'good' teachers, in order to delineate what this research informs us (or fails to tell us) about the relationships between subject conceptions and practice. Finally in Section 2.5, I suggest a conceptual framework that addresses the gaps and limitations in the literature discussed in this chapter and explain its relevance to my research questions.

### **2.2 Towards Defining Subject Conceptions**

Research into teachers' subject conceptions is characterised by unclear terminology. Pajares (1992) noted this lack of clarity when different terms (e.g., beliefs, attitudes, opinions, ideologies, perceptions, conceptions, personal theories, and perspectives) have been used to denote similar phenomena. Other authors, working on subject-specific research, have also used various terms interchangeably. For example, in Science education, Lunn (2002) referred to 'views', 'perceptions', 'orientations' and

‘conceptions’, while Abd-El-Khalick and Lederman (2000) discussed ‘conceptions’ and ‘views’ of Science. Brown et al. (1999) used ‘understandings’ and ‘conceptions’ of Math interchangeably.

In geography education, the situation is no less confused, with different researchers using the same term to denote different things. For example, Leat (1996), Walford (1996), Naish (1996) and Corney (1998, 2000) used the term ‘conceptions’ to refer to the ways in which geography teachers and/or pre-service teachers perceive the subject, which may or may not include affective components (i.e. what teachers believe or feel about the subject). Hopwood (2006) used the term to denote both descriptive and evaluative components of students’ ideas about geography. Other geography researchers have also used various terms like ‘geographical persuasions’ (Barratt-Hacking, 1996), ‘perceptions’ and ‘images’ (Martin, 2000) and ‘image’ (Johnston, 1990; Leat, 1996). There is therefore a need to unpack the component parts of the term early in this research project in order to arrive at a definition for my own study. Embedded within discussions of subject conceptions are two related areas of research: subject matter knowledge and pedagogical content knowledge, which I discuss below.

### Subject Matter Knowledge

Interest in the nature of the subject matter and its role in teachers’ thinking and practice remained relatively neglected until the 1980s when Shulman (1986: 6) drew attention to the lack of research into these issues. Within these knowledge bases, Shulman argued that teachers’ content or subject matter knowledge was a ‘missing paradigm’ because no one

was asking how subject matter was transformed from the knowledge of the teacher into the content of instruction. Shulman further pointed out that a central question concerned the transition from ‘expert student to novice teacher’ (1986: 8) and suggested the importance of having key concepts with which to understand and research how teachers transformed their subject knowledge into something they could teach their students. Considerable research was carried out by Shulman and his colleagues associated with the Stanford ‘Knowledge Growth in Teaching’ project, which included several major publications that developed Shulman’s ideas (Shulman, 1987; Wilson et al., 1987; Grossman et al., 1989). Research on subject matter knowledge also took off across the Atlantic following Shulman’s address, and Calderhead (1996) provided an overview of the research conducted in the UK.

Grossman et al. (1989: 27-32) presented a detailed formulation of subject matter knowledge, recognising this type of knowledge as encompassing four main dimensions.

1. *Content knowledge for teaching*, which refers to an understanding of the main facts, organising principles, and concepts of a subject, and of relationships among concepts within a particular subject and other subjects.
2. *Substantive structures*, which refers to an understanding of the overall ‘frameworks or paradigms’ used to incorporate the facts, principles and concepts and to guide studies in the discipline (which the authors recognised might be competing and subject to change over time).
3. *Syntactic structures* that refer to the way in which new knowledge might be introduced and accepted in a discipline.
4. *Beliefs* about subject matter which are the affective and personal evaluations of a subject, although it was recognised that separating beliefs from knowledge was difficult.

This formulation of subject matter knowledge is useful to my present study as it provides the vocabulary to differentiate between and discuss various aspects of teachers' subject matter knowledge. For example, differentiating between content knowledge and the substantive and syntactic structures in geography is important. Research suggested that teachers with limited content knowledge may rely on textbooks (Ball and Feiman-Nemser, 1988) to a greater extent, have more trouble evaluating a text (Wilson, 1988) or choose to lecture rather than allow for student-directed pedagogical styles (Grossman, 1987). Therefore investigating a teacher's content knowledge for teaching is important in terms of its implications for their practice. However, teachers with the same levels of content knowledge may also emphasise or organise the content in varying ways due to their different understandings of geography's deeper substantive structures.

Researchers working on teachers' knowledge suggest that this is because new information and content could also be incorporated differently into the teacher's subject matter knowledge because of the syntactic structures they have. Grossman (1990) and Hillocks (1999) showed, for example, that teachers' understanding of what constitutes knowledge within English can affect how they construct and sequence their lessons. This recognition of the importance of the substantive and syntactic structures that teachers have of their subjects can also be seen within geography education. For example, Barratt-Hacking (1996), Rynne and Lambert (1997), Martin (2005) and Brooks (2007) studied the extent to which teachers' substantive and/or syntactic understandings of geography were related to their practice, even though not all of them explicitly used these terms in their research.



The final component in Grossman et al.'s (1989) formulation of subject matter knowledge is the beliefs that teachers have about their subjects. In the UK, the recognition of the importance of teachers' beliefs can be seen in Marsden's (1997) and Morgan and Lambert's (2005) exhortations to teachers to be aware of their purpose in teaching geography. Brooks (2006, 2010) also suggested that what teachers value about their subjects has implications for how they design their curriculum. It is not always possible, however, to distinguish teachers' knowledge from their beliefs (Grossman et al., 1989; Calderhead, 1996), which explains the point noted by Fenstermacher (1994: 29-30) that knowledge and beliefs tend to be grouped together in accounts of teacher knowledge. Fenstermacher also cautioned that a claim to know something is epistemologically different from merely having a belief in something, and researchers needed to be careful not to confuse the two. In my research on teachers' subject conceptions, I understand that knowledge and beliefs are epistemologically different and I do not intend to use them interchangeably. Instead I argue that they both fall under the larger umbrella term, *subject conceptions*. In fact Fenstermacher (1994) himself reasoned that grouping knowledge and beliefs does not create problems when the inclusive group name refers to all the information, skills, experiences, beliefs and memories that teachers bring to bear when doing their jobs.

A criticism one might level at the discussion of teachers' subject matter knowledge above is that it does not appear to question the nature of that knowledge, particularly its epistemological and ontological assumptions. In fact, subject matter knowledge here appears to assume that knowledge is static (Meredith, 1995) and ideologically neutral

(Banks et al., 1999; Carlsen, 1999). However, within (but not limited to) the United Kingdom for instance, theoretical arguments about the nature of knowledge and truth, as well as the relationships between knowledge and education policy developments, have placed knowledge as a key area of enquiry in education research, particularly in advanced capitalist *knowledge* societies (Firth, 2011). For instance, researchers working within social realism have suggested that earlier debates about the positivist or social constructivist nature of knowledge have set up dichotomies that have negative implications for education policy and practice today (Maton & Moore, 2010: 1-2). Firth (2013) for example, highlighted how a positivist notion of knowledge, or absolutism, had influenced the National Curriculum (DFE, 2011) in general, while a constructivist view of knowledge prevailed in school due to a neo-liberal approach to education. This conflict in discourses about knowledge is important to my research and I am interested to understand how pre-service teachers reconcile and make sense of this conflict in their own conceptions of geography, and how to teach it.

Young (2011a: 268) suggested that an absolute view of knowledge ‘denies the social and historical basis of knowledge and its organisation into subjects and disciplines’ while a constructivist approach towards knowledge ‘treats the ways that knowledge is organised as ‘historically arbitrary’. Firth (2013) suggested that the former implied a curriculum of compliance, which maintained and legitimized existing knowledge and power relations. The latter would lead to a curriculum of generic skills and instrumental outcomes, which would perversely make unequal access to knowledge and power *invisible*, rather than remove them. Young (2010) argued instead for a view of knowledge that was objective,

but which had a historical and social basis: specialist communities of researchers in different disciplines define what is accepted as knowledge, but these types of knowledge are produced within specific conditions which are socially and historically grounded.

This discussion of knowledge leads back to questions about the nature of geography as a discipline, and to how my own research is situated within the discussion. In my research, teachers' conceptions of geography are approached as framed by competing discourses at various levels, with academic geographers, geography educators, and government agencies defining what is considered valuable knowledge in geography. What my research seeks to do is to extend and apply this understanding of knowledge and knowledge production, and examine how teachers reconcile and articulate what geography is, within the specific context of pre-service teacher education in Singapore.

In this study, I therefore use the term *subject conceptions* to include the cognitive aspects of teachers' subject matter knowledge, as well as their beliefs about the subject (after Grossman et al., 1989). However, this subject matter knowledge is not understood as static, but is instead the tangible outcome of a process of negotiating and reconciling discourse about geographical knowledge at different levels within society. Teachers' knowledge and beliefs about how to *teach* their subjects are also crucial to my research – I discuss the relevant issues in the next section.

### Pedagogical Content Knowledge

The other prominent area in the research on Shulman's 'missing paradigm' is Pedagogical Content Knowledge (PCK). It refers to the type of knowledge that reflects teachers' understanding of subject matter for pupil learning. Shulman (1986: 9) characterised PCK as 'ways of representing and formulating the subject that make it comprehensible to others', which included the 'most useful forms of representations... of ideas, the most powerful analogies, illustrations, examples, explanations, demonstrations'. It also included an understanding of what made a topic difficult or easy for pupils. Shulman characterised PCK as 'uniquely the providence of teachers' (1987: 8), as it transcended mere knowledge about subjects, or knowledge of pedagogy. Instead PCK demarcated the exclusivity and skill-set of those in the teaching profession. This idea that teachers understood their subject area differently because of the nature of their work can be seen in Magnusson et al.'s (1999) argument that PCK was a legitimate theoretical construct because a teacher knew something that was beyond the knowledge base of a subject specialist or a general education researcher. For example, research has shown that strength in content knowledge was not the same thing as a good grasp of how to teach it (Martin, 2000; Holt-Reynolds, 1999). PCK therefore served as a conceptual link between content knowledge and pedagogical knowledge, and was useful in generating interest about teachers' knowledge about a subject and how this subject matter knowledge developed in their practice.

The attractiveness of the notion that PCK was uniquely important to teachers' work paved the way for empirical studies conducted in this area. In the 1980s and 1990s

researchers examined how the subject matter knowledge of teachers developed in their practice, particularly in the area of science concepts (Smith & Neale, 1989; Summers & Kruger, 1994). These provided evidence that

...development of content knowledge by itself is not sufficient to guarantee any substantial improvement in the quality of classroom teaching. It is also necessary to identify appropriate pedagogical content knowledge in relation to the particular ideas and concepts being taught (Summers & Kruger, 1994: 517).

Researchers in science education also sought to identify what PCK looked like in practice, as well as to clarify PCK's relationship with teachers' other knowledge bases. Magnusson et al. (1999), for instance, found evidence of PCK in teachers' practice, and argued that PCK was distinct from other types of knowledge bases like subject matter knowledge and pedagogical knowledge. However, they suggested that the distinctions between PCK and the other two types of knowledge were difficult to identify. Morine-Dersheimer and Kent (1999) outlined the relationship between PCK and the contexts of teachers' work, and suggested that reflection would help develop teachers' context-specific pedagogical knowledge. Gess-Newsome (1999) observed that PCK was an important part of teachers' knowledge, but that empirical researchers were still unclear about whether it played an integrative or transformative role with regard to operationalising the other knowledge bases of teachers.

PCK was also influential within history education (Wineburg and Wilson, 1991; Turner-Bisset, 1999, 2001). For example, Turner-Bisset (1999, 2001) used Shulman's (1987)

model as a basis for her empirical work. She refined it in its detail (sub-dividing knowledge of learners into cognitive and empirical aspects, and including 'Knowledge of Self' as an additional type of knowledge). However, like Magnusson et al. (1999), the author observed that it was 'impossible to distinguish between content knowledge and pedagogical content knowledge; in the act of teaching, all knowledge was presented pedagogically in some way' (1999: 42). As such, she concluded that PCK was so fundamental that rather than being one base among several, it should be construed as an overarching base which fed into and drew from the others.

Other subject-specific research related to PCK and teachers' knowledge included studies by Grossman (1991), Gudmundsdottir (1991) and Hillocks (1999) in teaching English and English literature. For example, Hillocks (1999) sought to identify which aspects of teachers' knowledge bases were influential in classroom teaching, and suggested that PCK was particularly important. In geography education, Martin (2005) deployed the concept of PCK to examine the changing relationships among pre-service teachers' subject matter knowledge, pedagogical knowledge and pedagogical content knowledge over time.

PCK is not without its critics however. Although the researchers outlined above found evidence of PCK in the lessons they observed, their inability to identify exactly what constituted PCK, how it was distinct from, or related to, other types of teachers' knowledge cast doubts on whether it was a legitimate type of knowledge base (Sockett, 1987; McEwan and Bull, 1991). Another problem with PCK was its static view of

content knowledge (Banks, et al., 1999). In practice, researchers in geography (Martin, 2005), in English (Turvey, 2005) and in science (Carlsen, 1991) have shown that teachers change their understanding of content through their work. Brooks (2011) suggested that this shortcoming was related to the fact that Shulman had ascribed it with attributes of knowledge, rather than those of a process. Indeed Fenstermacher (1994) also noted the epistemic difficulty inherent in defining knowledge and questioned if the type of knowledge to which PCK referred could be clearly defined as knowledge. Meredith (1995) averred to PCK's inability to accommodate constructivist conceptions of learning, but Gudmundsdottir's (1991) and Hillocks' (1999) work in English and English literature had suggested that teachers' epistemological orientations (which could include constructivist notions of their subjects) mattered to how they taught.

The discussion above on PCK has implications for my research. The conceptual and empirical focus on not just teachers' subject matter knowledge, but also their knowledge of how to teach it, suggests that in my own study it is important to ask my respondents not just what they know about geography, but also what they know about teaching it. However, Martin's (2005) study indicated that pre-service teachers may not have developed PCK yet. This suggests that PCK may not be suitable for my study on pre-service teachers. Moreover, PCK's assumptions about the nature of knowledge make it conceptually incompatible with my study. PCK does not sit comfortably with my research questions about how teachers reconcile competing discourses to articulate personal and idiosyncratic understandings of geography, which include their epistemologies of the subject. The difficulties in identifying PCK as a construct and its

relationship with other types of teachers' knowledge also make it problematic to use in empirical research. As such, I do not deploy PCK in my study even while I recognise the relevance of Shulman's notion that we need to investigate what teachers know or say they know about *teaching* their subjects when we examine their subject matter knowledge or subject conceptions.

At this point it is important to caveat that I do not claim that teachers have one complete and immutable set of conceptions at any point in time. Mair (1977) suggested that people can have complex and contradictory views about issues and these views reside in the contexts in which they are expressed. Martin (1997) drew upon this idea to explain how a respondent could conceive of geography differently as a teacher compared to as a learner. In my study I therefore frame subject conceptions as *one version of geography* that my respondents articulate to me at a particular point in time within a particular context. In unpacking what they say they 'know' about geography and how this 'knowledge' changes over the course of conducting this research, I am interested to understand how and why respondents articulate the conceptions in these particular ways (and not others).

### **2.3 Identifying the Gaps in Subject Conceptions Research**

In this section, I address the formative influences on teachers' subject conceptions as discussed in the literature. In general, research on what influences teachers' understandings of geography can be broadly categorised in terms of the national education context and its relationship to the subject context, the teacher education and school contexts, and teachers' own personal contexts.



### National Education and Subject Contexts

The literature suggests that national education policies affect teachers' understandings of their school subjects through changing the ways in which teachers engage with their subject matter knowledge. In the UK for example, Graves (1996) and Rawling (1996, 2001) found that the prescriptive National Curriculum framework for geography restricted teachers' involvement in developing their own subject curriculum. Thus teachers came to play a technical role of 'delivering' the curriculum as a given body of content without having to consider deeply 'what' geography was about. Rawling (2010: 124) suggested that the introduction of the National Curriculum 'weakened the link between the subject knowledge of the recent graduate entering the profession and subsequent curriculum innovation'. In a similar vein, Green (1998) described how the reform of English as a subject in the UK, the US and Australia mobilized particular discourses about the content and focus of teaching English. Therefore, state policies and involvement in the curriculum affect the ways in which teachers think about their subjects by conditioning them to 'deliver' an imposed curriculum rather than engage with their subjects as a complex and ever-changing body of work that needs to be selected and presented in coherent and meaningful ways to their students.

However at the level of academia, a different understanding of subjects may dominate.

Goodson reminded us that we should be mindful that

Subjects are not monolithic entities but shifting amalgamations of subgroups and traditions that through contestation and compromise influence the direction of change (Goodson, 1997: 64).

In his description of the social history of geography, Goodson (1987, 1997) discussed how geography's initial utilitarian and pedagogic purposes in the late 19<sup>th</sup> century changed radically when interest groups like the Geographical Association, pushed for its elevation to a university subject and control of the academic subject passed into the hands of academic specialists. However geography at university level is a contested area with on-going debates about geography's divisions and the extent to which these can be reconciled. Unwin (1992) classified geography as having undergone a number of distinctive phases in tandem with larger paradigmatic changes in research and academia in general: Regional, The Quantitative Revolution, Humanistic, Behavioural, Radical and Post-Modern. Livingstone (1993) traced the development of geography in relation to broader social and intellectual contexts. These phases in geography's history have not permeated the whole discipline and all departments equally, and often the work academics do are also affected by the need to attract funding and increase student numbers (Unwin, 1992; Castree and Sparke, 2000). There were also arguments that these changes have caused divisions between physical and human geography (Castree, 2003), and fractures within human geography itself (Maude, 2006).

In light of these divides, there has been intense debate and soul searching in recent times about the nature of the discipline, as well as effort to identify unifying elements within geography. For example, Herbert and Matthews' (2004) edited volume focused on identifying the common themes in both physical and human geography, while Bonnett (2002) and Johnston (2004) were concerned with bridging the divide between popular and academic conceptions of geography. These divisions and the search for a

geographical core in academia are important because where undergraduates (and teachers) studied, whom they studied under and what they read while at university, can have profound implications for how they perceive geography.

Brooks (2011: 170) observed that the contested nature of academic geography complicates attempts to define school geography. Stengel (1997) explicated on the different ways in which scholars have considered the relationship between the school and academic variants of a subject – which variety influenced the teacher first, or to a greater extent. She concluded that the meaning of each (school and academic subject) was unstable and shifted in relation to the assumptions that one had about the relationship between them. It is therefore important when doing research on subject conceptions to explore the relationships between academic and school subjects, especially in contexts where large differences occur in how the subject is framed and understood at these levels. Within the United Kingdom, it has been observed that there is a widening gap between academic and school geography (Kent, 2001; Lambert, 2004) because academic geographers have less of a role to play in constructing school geography, while government policy and public examination boards play an increasing role in defining the school curriculum. Researchers have observed that school geography has been influenced more by broad changes and developments in pedagogy (e.g. Walford, 2001) rather than by developments in the academic discipline. Rawding (2013) noted that the content of school geography did not represent the latest thinking in the discipline, with the cultural turn in geography largely absent from the latter. A similar split between these two types of geography was observed by Naish (1990) outside of the United Kingdom.

The discussion in Section 2.2 on the nature of knowledge and its importance to education policy, curriculum and practice is also relevant here. Researchers like Young (2008, 2010) have advocated a focus on disciplinary knowledge within school subjects.

Similarly, Gardner (2007) argued that ‘disciplinary thinking’ would distinguish between those who only had factual knowledge and those who possessed the disciplinary sophistication with which to make sense of the world and solve problems. These arguments are important to questions about the purpose of a geography education and what needs to be included to prepare young people for the future. Marsden (1997) argued that issues-based approaches to teaching geography placed too much emphasis on social and pedagogical considerations at the expense of the disciplinary content. Other authors (Lambert, 2008; Standish, 2009) were also concerned about the geographical integrity of the school curriculum.

It was therefore generally acknowledged that school geography reflected a range of social considerations and political positions (Rawding, 2013; Standish, 2008) which were divorced from the forces driving academic geography. Geography education researchers were also largely united in thinking that school geography needed to engage with academic geography as well as the ‘material conditions in which geographers produce geographical knowledge’ (Firth, 2011a: 158-159). Butt and Collins (2013), however, cautioned that school geography was necessarily different from academic geography and attempts to completely align the two would be futile and unproductive. They argued that school geography needed to be ‘informed by the advances in knowledge achieved by

academic geographers, but requires more objectivity, stability and certainty about the content it conveys' (pg. 296).

The challenge for geography education therefore appears to be how to understand the relationships between the two in coherent and systematic ways. Hill and Jones (2010: 30) suggested looking for ways to create 'an equitable exchange of ideas between university academics and school teachers, leading to mutually constructed learning communities that re-connect school and university geographies'. Butt and Collins (2013) suggested that the divide might be bridged through an appreciation of the ways in which academic and school geography were different. Rawding (2013) suggested using relevance to the changing world as a criterion by which to remove existing content in the school curriculum, and to include new academic content within it.

Another challenge for geography education research is to understand how teachers themselves understand and reconcile the split between school and academic geography. Rynne and Lambert (1997) suggested that geography graduates had the intellectual tools to understand and analyse new information because of their undergraduate training, whereas Corney (2000) and Martin (2004) argued that teachers' initial understandings would develop and grow in the process of teaching. Barratt-Hacking (1996) argued however, that school geography was so markedly different from their undergraduate experiences of it, that teachers put the latter aside completely.

An explanatory framework that allows for a comparison of *why* respondents in these studies reconciled the split between school and academic geography differently is evidently missing. I suggest in this thesis that an examination of the discursive structures that affect how teachers reconcile their past undergraduate experiences of geography with their knowledge of school content has generative power. I suggest a framework (see Section 2.5) to analyse how potentially conflicting discourses about the nature of geography are negotiated by uniquely situated individuals. This conceptualisation implies that the study should also investigate if and how individuals resist discourse when articulating what geography is and is not – in terms of its content, and substantive and syntactic structures, as well as in affective terms.

#### Teacher Education and School Contexts

Apart from influences at the national education and subject levels, the teacher education context also potentially affects the ways in which teachers, particularly pre-service or novice teachers, express their understandings of their subjects. In the UK for example, there has been interest in teachers' subject matter knowledge among geography teacher educators and researchers. Within geography education research, Lambert (2010: 85) argued for the need to focus on the subject itself and not on just 'educational research with a geographical hue', as well as why geography 'contributes to education'. Other writers also echoed this call to be mindful of geography and its role in developing young people's understandings of the world (Firth, 2011b; Winter, 2011). Morgan and Lambert (2005) argued that geography teachers played an important role in mediating geographical knowledge for their students, while Brooks (2006, 2010) found that

teachers' subject matter knowledge and beliefs about the subject affected the ways in which they did so.

This research focus on the purpose and nature of geography education in conjunction with teachers' subject conceptions has to be acknowledged as a type of discursive power in itself. Such research potentially informs what teacher educators do in their courses, and by extension, affect the subject conceptions of pre-service teachers. For example, there is evidence in the literature that teacher preparation programmes affect the subject conceptions of pre-service teachers (Corney, 2000; Martin, 2008). For example, Martin (2008) reported that getting pre-service teachers to map their subject conceptions as part of the course programme caused them to engage with their school geography experiences, while the taught component of the course affected pre-service teachers' perceptions of geography. This therefore implies that the discursive structures in the teacher education context needs to be investigated as an influence on how pre-service teachers articulate their understandings of geography in my research.

Research also showed that the school contexts in which they teach influence teachers' subject conceptions. For example, Barratt-Hacking (1996) suggested that pre-service geography teachers tended to suspend their own conceptions of geography and adopted the school department's own approaches and representations of geography instead. However, I suggest that for pre-service teachers, these school contexts tend to be embedded within the teacher education context itself –in terms of how the teaching component is structured within the course as well as the modes of assessment during this

period. It is therefore not enough to study the links or lack thereof between academic and school geography when studying pre-service teachers' subject conceptions. The possible discursive tensions between the types of geography discussed during the teacher preparation programme and the schools' representations of geography within the work schemes and departmental resources must also be considered. The power relationships among the pre-service teachers and their mentors at this stage also need to be explored if we are to better understand not just what respondents' subject conceptions are and how these change over time, but also why they take particular forms.

### Personal Context

Education scholars have found that teachers' conceptions of their subjects are affected by more than just their formal schooling experiences. Brooks (2007, 2010) suggested other influences drawn from teachers' personal contexts can affect how they evaluate geography, as well as how they frame it for themselves. These include having experienced personal success and pleasure working at geography in the past, and the influence of past teachers or mentors, travel, family, hobbies and interests. Outside of geography, other authors also found that teachers' personal values affected their perceptions of subjects (Carlsen, 1999; Grossman, 1990; Gudmundsdottir, 1991; Wineburg and Wilson, 1991).

Martin (2008: 36) argued that teachers have highly developed conceptions of geography based on their personal contexts



...because they all live in the world. As a result of their daily interactions and decisions they will have built up a wide knowledge base about the world, near and far, through a range of direct and indirect experiences.

She suggested that these informal experiences of geography were an important part of teachers' subject conceptions which teacher educators and education scholars needed to engage with. However, research also showed that these informal life experiences were often discounted by teachers themselves when asked what they thought geography was (Martin, 2008; Catling et al., 2010). Instead there was a tendency to valorise formal schooling experiences. In addition, the literature further implied that within formal education, experiences of higher education tended to dominate teachers' conceptions (Leinhardt and Smith, 1985; Ball, 1988; Ball and McDiarmid, 1990, Bullough and Knowles, 1990; Powell, 1992). This therefore highlights the need to probe the personal context of each respondent in my study even if they themselves do not consider these as important to their subject conceptions. I also need to be careful of the power structures within the research context that may cause respondents to draw only from their formal schooling when discussing their conceptions and address this in my conceptual framework and methodology.

### Subject Conceptions and the Body

One criticism I would level against the literature on the subject conceptions of geography teachers in particular, is the tendency to think of conceptions mainly in terms of cognition

– what respondents think or know (although beliefs and values have also been studied). However, embedded within the subject and personal contexts of geography teachers is an important set of discursive structures that has not been addressed in the literature – the place of particular types of bodies within respondents’ conceptions of geography. One particularly salient component when discussing geography as a discipline is the importance of fieldwork to the subject. This is linked to geography’s traditions as a subject that is closely associated with the exploratory tradition (Sauer, 1956; Stoddart, 1986; Driver, 2001). Powell (2002) and Bracken and Mawdsley (2004) also suggest that this tradition is particularly pronounced in physical geography.

Within academic geography, such conceptualisations of geography have been criticised because of its emphasis on particular types of bodies and its exclusion of other types. Feminist geographers, for example, have alleged that geography is ‘masculinist’ in nature (Domosh, 1991; Rose, 1993; Bracken and Mawdsley, 2004), especially when combined with a narrow definition of what constitutes valid geographical study (Rose, 1993; Madge and Bee, 1999). Rose (1993: 69) argued that field pedagogy was an example of an ‘initiation ritual of the discipline’, where undergraduates performed ‘geographical masculinities in action’ (pg. 65) using scientific methods. Such geographical traditions have therefore had the sum effect of excluding female bodies from the historiography of the discipline because the experiences and contributions of women in the past (e.g., the writings of Victorian women travellers) were not recognised as valid types of geographical knowledge (Domosh, 1991). This fieldwork tradition in geography has also been critiqued as alienating not just to women, but also to anyone who is unable to fit into

the stereotype of fieldwork being undertaken by 'masculine, youthful, predominantly white, able bodies conquering difficult terrain' (Hall et al., 2002: 216).

The above discussion suggests that conceptions of geography are intimately tied to particular types of bodies and discourse about what types of activities constitute valid geographical studies. At the same time, such academic discourse also needs to be contextualised within other trends in geography and education which could dilute these conceptions of geography and the types of bodies doing geography. For example, there has been the rise of geographical paradigms (outlined in Section 2.2) other than the quantitative scientific tradition, validating other forms of field research that do not involve long stays performing physically demanding labour in distant locales (Bracken and Mawdsley, 2004). In addition, as the authors pointed out, the issue is not so much about actual abilities related to physical fitness, but about gendered social attitudes in and around field sites which can be changed. Another real issue that could affect this 'masculine' tradition of geography is the level of female representation in academic geography departments and the impacts their presence might have on the academic curriculum and students' experiences of fieldwork and geography. In a review of the situation in the Netherlands, the USA, Catalonia, Hungary and Singapore, Monk et al. (2004) found that women tended to be under-represented both as faculty and as students in higher education. In addition, their clustering within particular sub-fields has implications for female students' selection of courses and specialisations within geography. Clark (1996) also argued that developments in higher education in the UK that are designed to efficiently supply a standard educational product to a mass market

have eroded the provision of fieldwork experiences for undergraduates in geography departments due to a lack of funding and time in which to carry out field studies projects. Various types of discourse and trends therefore come into play when discussing the place of the body within geography in teachers' subject conceptions.

In this study it is also important to explore the place of fieldwork and the body within *school* geography. The importance of fieldwork within geography school curricula varies internationally, with fieldwork being more dominant in the UK, Australia and New Zealand than in the USA, much of Europe and less developed countries (Foskett, 1999). Cook et al. (2006) observed that even in the UK, the position of fieldwork in schools is also under pressure from other trends like the development of a risk-averse culture that affects teachers' willingness to conduct fieldwork. Lidstone (1988) also noted the erosion of fieldwork in schools in Australia and New Zealand with the development of integrated social studies and humanities curricula, while in China the rise of an issue-focused curriculum led to fieldwork becoming a secondary consideration in schools (Zhang, 1999).

The above discussion suggests that the discourse of geography as a discipline that is traditionally related to demanding physical activity (undertaken by particular types of bodies) is one that has to be reconciled with changing discourses in academic geography as well as school geography contexts. In examining the role of bodies in the subject conceptions of geography teachers in this study, it is therefore important to unpack

discourses about fieldwork within both academic and school geography in specific contexts. I will discuss the Singapore context in Chapter Three.

### Summary

In this section, I have outlined the literature pertaining to the subject conceptions of teachers and the importance of exploring contextual (national education, subject, teacher education, school and personal) influences on the formation of these conceptions. More importantly I have also suggested that the discourses inherent in each of these contexts, and how they relate to one another, have not been addressed in the research on the formative influences on subject conceptions. What is missing in these analyses is therefore *why* teachers articulate one version of the subject (and not others) in particular contexts. In addition, the discussion of the development of subject conceptions over time needs to be understood as mediated by discursive structures that enable and constrain particular types of changes. It is crucial to also remember that in this understanding of subject conceptions, each individual is not a puppet of discourse. Implicit within the process of articulating geography, is the possibility of rejecting one type of discourse while selecting and accommodating others from the vantage point of one's personal context (see Figure 2.1, Section 2.5 for more information).

In the next section, I look at the problematic issue of what teachers *do* with their subject conceptions. The links between what teachers know and their practice have not been resolved in the literature. I suggest that exploring discourses of what it means to be a 'good' teacher (of geography) provides insight into the nature of the relationships

between teachers' conceptions and practice. I also provide an analysis of the literature on the influences on teachers' practice, highlighting their implications for, and shortcomings in, bridging this divide between conceptions and practice.

#### **2.4 Discourse and the Conception-Practice Link**

Researchers on subject matter knowledge have argued that teachers' knowledge and beliefs about their subjects are important influences on what they teach and how they do so (Gess-Newsome 1999; Gudmundsodottir 1991; Hillocks, 1999; Cheng and Stimpson, 2004). Within geography, there was also interest in how teachers' conceptions of geography have impacted on their geography lessons (Baratt-Hacking, 1996; Jewitt, 1998; Corney 2000; Kwan and Chan, 2004; Martin, 2005; Brooks, 2007). Not all the researchers agree on whether there is a direct link between subject conceptions and teachers' work. For example, Jewitt (1998), Corney (2000) and Kwan and Chan (2004) argued that teachers' knowledge and beliefs affect how they taught, while Catling (2004) suggested that teachers who are less well-grounded in their subject content taught in 'traditional' ways, using a lecture style mode more frequently. Others (Barratt-Hacking, 1996; Martin, 2000, 2005; Brooks, 2007) were less convinced of the link between subject conceptions and teachers' practice.

Perhaps some of these differences may be attributed to the groups of teachers studied and the variations in context that applied to each case. For example, experience of teaching was one of the many factors that may have affected the research outcomes. Jewitt (1998) and Brooks (2007) studied experienced teachers whereas Barratt-Hacking (1996), Corney

(2000) and Martin (2004, 2005) worked with their novice counterparts. Catling (2004) and Martin (2004, 2005) also worked with primary school teachers, whereas the others focused on secondary school teachers. Kwan and Chan (2004) did their work with teachers in Hong Kong whereas all the other research was based on teachers in the UK. The point here is that the particularities of the context in which research was based matters, and this has important methodological and analytical implications for my own research. As Moore (2004: 11) argued, it is important that we seek

...better understandings of what it means to be a teacher, of the dialogic relationship between our classroom perspectives and practices, and the wider social contexts within which these perspectives are situated.

However understanding each context in detail without an explanatory framework for why the relationships between conceptions and practice are similar or different *across studies* is ultimately limiting. I therefore reviewed the literature for a theoretical perspective that would operationalise my study on teachers' conceptions and practice across different contexts.

In a review of the literature on teacher education, Wideen et al. (1998) called for an ecological approach to researching teacher education, based on Capra's (1996) 'new ecological synthesis' in Science. This new synthesis rejects the idea that the whole can be understood by studying its parts, and argued for the need to understand the teaching and learning process as a whole. A de-contextualised study of pre-service teachers and how they learn to teach would therefore 'miss the complexities of the learning-to-teach equation' (Wideen et al., 1998: 168). What is missing in the ecological approach,

however, is the explicit study of power relationships within education. Bernstein (1990, 2003), for example, was conscious that the enterprise of education was neither neutral nor objective, and that the types of curriculum and forms of pedagogy in education were directly related to social class and the power relations in society between the classes. Lambirth (2006) provided a short introduction to the influence of Bernstein's work in the area of initial teacher education in the UK, arguing that we could view teacher education and the National Curriculum, for example, as aligned to the dominant (middle class) groups' cultural aspirations and values.

This recognition that power affects both the curriculum (what is worth knowing) and pedagogy (how best to transmit this knowledge) is useful to my study. However, Bernstein's analysis is grounded in a structuralist point of view that sees power as a tool exercised within a conflict of interest among social classes. This perspective does not capture fully the processes at work in teaching because it is not sensitive enough to the nuances of power in contemporary post-modern society. I agree with Ryan (1991) instead that no one individual or group (or social class) ever fully controls the process of schooling, and that both the structure and outcome of schools are products of a range of individual and group desires and actions. Such a view does not cast power as something wielded by just one group, but rather, power should be seen as a 'bottom-up capillary process of social relations' (Ball, 1993: 112).

The philosopher/historian Michel Foucault provides this perspective, describing the educational system as a 'political means of maintaining and modifying the



appropriateness of discourses with the knowledge and the power that they bring with them' (Foucault, 1971: 46). By 'discourse', Foucault refers to the 'parameters within which our perceptions of the social world and our actions within it are framed'. These parameters are 'essentially produced and sustained by language and knowledge, and controlled and patrolled by ideologies' (Moore, 2004: 28). I argue that utilising an analysis of the discourses that frame 'good' (geography) teaching in my research illuminates and explains the links between conceptions and practice better, and that this conceptualisation can be applied to studies across contexts.

#### *2.4.1 A Discursive Framing of the 'Good' Teacher*

Moore (2004) discussed the shifting notions of a 'good teacher' in the UK and the particular types of discourse related to these changes: the 'charismatic' teacher in the 1980s, the 'reflective practitioner' (early 1990s) to that of the 'skilled craftsman' (late 1990s) and the 'effective teacher' (post-2000). This conceptualisation of discourse and its effects on our understandings of 'good' teaching is important to my study as it implies that dominant discourses provide benchmarks against which what teachers do is measured. This has implications for whether teachers draw upon their subject conceptions or not in their teaching, which my study aims to explore. At the same time, discourses are not mutually exclusive over both time and space. Moore (2004) observed that different types of frames for 'good' teaching exist at any one point, each reflecting the characteristics and dispositions that are deemed desirable in a teacher.

In her study of pre-service teachers in the UK, Brooks (2007) suggested that teachers are influenced by five different types of cultures of influence in their work – the education

culture, the geography culture, the geography education culture, the school culture and their own personal cultures. Teachers' practice was idiosyncratically situated where these different cultures overlapped. This is important to my study because it indicates that teachers are situated in a *multiplicity* of cultures (or contexts) at any point in time and draw from these to different extents in their practice. In this thesis, these contexts are not seen as neutral entities, but instead each is permeated by discourses on what makes a 'good teacher'. Such discourses may complement or be in conflict with one another within and across contexts. Each teacher is therefore situated within a complex web of discourse which he/she needs to negotiate in order to be a 'good teacher', and I suggest that the examination of this process of reconciling discourse holds the key to explaining the links between teachers' subject conceptions and their practice.

At this juncture, it is important to caveat that Foucault's discursive framing of power has been criticised as leaving no room for individual agency. For example, in *Discipline and Punish* (1979), Foucault draws on the metaphor of the *Panopticon*, a prison where the captive is always visible, and the captor, never. Hence, from the captive's perspective there is always the possibility that he/she is being observed. As a consequence, he/she never actually has to be under surveillance; the possibility is enough (Erlandson, 2005: 663). Foucault further argues that this insidious form of power, and its associated techniques of discipline that were refined in prison, has distributed throughout society. Moore (2004) also pointed out that according to Foucault, discourse is especially powerful because it does not appear constructed, but is seen as 'natural'. Any opposition to the norms dictated by discourse is therefore pathologised. This implies that a

discursive framing of 'good' teaching is potentially limiting since its imposed parameters and frameworks leave little room for alternative discussions of teachers' work (Atkinson, 2008).

However, even though Foucault himself did not theorise individual agency and ability to subvert discourse, those working in the Foucauldian tradition have. Butler (1990, 1993), for example, posits that what we assume to be 'natural' about our (gender) identities is in fact non-existent but is instead a cultural performance. She suggested, after Foucault, that the 'political regulations and disciplinary practices which produce ostensibly coherent gender are effectively displaced from view', and in this manner, society 'disciplines' the individual while the cause of these gendered performances are seen to come from the 'self' and are therefore 'natural' (1990: 136). However, in her discussion of the transgressive potential of 'drag' (Butler, 1993), Butler argued that those who cross-dress transgress societal norms that are tied to explicit performances of gender identity. In so doing, the discourses that frame a subject's performed (gender identity) are exposed, and an individual therefore has the potential to consciously subvert social norms.

In discussing teacher identities, specifically that of 'good' teachers, Moore (2004: 31) also alluded to an individual's potential to resist discourse when he stated that

...discourses, for all their objective power and dominance, and for all their capacity to infiltrate the consciousness, are neither immutable nor impenetrable...both their constantly evolving nature and our ability to at least be aware of them inevitably render them contestable and challengeable (Moore, 2004: 31).

I suggest therefore that any examination of the ways in which discourses frame ‘good’ teachers, affecting whether teachers draw upon their subject conceptions when teaching, must be mediated by the view that each individual can potentially be conscious of these discourses, and in the process, resist them. The ways in which the respondents in my study reconcile (and resist) discourse can be seen in how the individual chooses to ‘perform’ as geography teachers in the Teaching Practice context. I am interested therefore to unpack why teachers, in specific contexts, choose particular performances of ‘good’ teaching. It is also important to caveat here that it is not the actual performance that is important to my research but the factors that influence the teacher’s decision to ‘perform’ in various ways (this has important methodological implications for my study, which I will discuss in Chapter Four).

#### *2.4.2 Framing ‘Good’ Teachers in Context*

In this section, I outline the literature on how ‘good’ teaching is framed in different contexts, namely the national education, teacher education, school, subject and personal contexts. I suggest that discursive structures in each context are mutually constitutive - discourse in one context has implications for how ‘good’ teaching is framed in the others. In my research I argue that teachers have the potential to mediate these discursive structures in various ways, depending on their consciousness of and ability to resist discourses. I also suggest that examining these discursive structures will shed light on why the literature on the links between subject conceptions and teachers’ practice is controversial.

### National Education Context

Researchers have noted that state ideologies and practices that aim to control the school curriculum have important consequences for teachers. Lawton (1989) and Bell (1999) provided overviews of educational policy in the UK context in recent decades, arguing that increasing state control of the curriculum eroded teachers' role as curriculum makers and relegated them to the role of delivering the curriculum instead. Power and Whitty (1999) noted parallel situations in other places such as the USA, Australia and New Zealand, and argued that moves by the state to regulate the curriculum actually privileged within schools a narrow and partial version of knowledge over which teachers have little control. This contrasts with Louis' (1990) findings that when teachers' craft knowledge was respected in countries like Denmark, it was the teachers, rather than policy makers who controlled the curriculum. Across different contexts, therefore, state policies regarding the educational curriculum had varying repercussions for teachers' professional responsibility in developing a curriculum for their students. By extension, this affected how 'good' teachers are framed at the level of the national education context.

The literature also suggests that another important element within the national education context is the way in which states appraise and evaluate teachers. This is reminiscent of Foucault's idea that

The examination combines the technique of an observing hierarchy and those of a normalising judgment. It is a normalising gaze that makes it possible to qualify, to classify and to punish. It establishes over individuals a visibility through which one differentiates and judges them (Foucault, 1979: 173).

For example, Ball (1990, 1993) argued that the marketisation of education subjected teachers to systems of ‘administrative rationality’ where ‘constraints are replaced by incentives’, prescription by ‘quality or outcome assessments’ and coercion is replaced by ‘self-steering’ (Ball, 1993: 111). Other authors have also studied the recent history of teacher appraisals and commented on how they were a means of control over what teachers did in the UK (Bartlett, 2000; Hall and Noyes, 2009). Halse et al. (2004: 586) also found that similar bureaucratic models dominated in other national contexts like the USA, Europe, Korea, Mexico, Australia and New Zealand.

Such models of teacher appraisal frame what is valued in a teacher, which teachers then have to reconcile with their own preferences and beliefs about the nature of their work. For example, Lasky (2005) suggested that secondary school teachers in the USA faced challenges in reconciling new reform contexts with their identities as professionals whose main purpose was to develop and nurture students. Connell (2009) also suggested that the Australian framework he studied impinged on teachers’ agency to act in ways that benefitted a diversified student base. Moore (2004: 33) found that because teachers in the UK were concerned to be seen as doing a good job, they balanced their personal pedagogical orientations and preferences in relation to discursive frameworks in various ways, ‘shifting their ground constantly and pragmatically in relation to what is possible’. The above discussion implies that in my research, I need to unpack the dominant discourses that frame ‘good’ teaching in the *Singapore* national education context (Chapter Three) and to study carefully how each individual responds to such discourse in teaching geography. I argue that it is through investigating this process of reconciliation

and resistance that we can better understand the nature of the relationship between teachers' subject conceptions and the ways in which they teach geography.

### Teacher Education Context

Munby et al. (2001) provided an overview of the changing emphasis of teacher education since the 1960s, from the passing along of findings from research to teachers in the 1960s which would form teachers' knowledge base, to the acquisition of specific and identifiable skills in the 1970s through to concerns with the development of teachers' professional knowledge in the 1990s. Furlong and Maynard (1995) also outlined dominant models of learning to teach, namely the competency-based and reflective-practitioner models that have underpinned many teacher education programmes in the UK in the recent past. This changing emphasis of the content of teacher education courses is arguably the result of the different research interests across time (and space) in the area of teacher education, which in their turn are mutually constituted by discourses at the national education level. For example, Furlong and Maynard (1995) attributed the growth of the competency-based models of teacher education to state intervention. In my study it is therefore important to understand how discourses within the teacher education context in Singapore are linked to other contexts like the national education context, and affect the ways in which 'good' teaching is understood by my respondents.

The literature on teacher education also suggests that pre-service teachers negotiate a number of competing and sometimes contradictory discourses when undergoing teacher preparation programmes. First of all, the reflective-practitioner model of teacher education (Schon, 1983, 1987; Loughran, 1996; Loughran and Russell, 1997) advocated

that pre-service teachers should reflect on their teaching relative to established education principles, as well as to critique these educational principles. However, researchers (Furlong et al., 1988; Bullough et al., 2008; Gaudelli and Ousley, 2009) found that there was often little opportunity built into teacher education course structures for pre-service teachers to reflect on or critique what they were learning. Munby et al. (2001) noted a similar contradiction within teacher education where constructivism was advocated in classroom teaching, but did not apply to the education of pre-service teachers. This implies that the value of constructivism as a ‘good’ teaching principle is preached to pre-service teachers, but they are not given the chance to construct this knowledge for themselves and to reflect on its relevance to their teaching. This disjuncture between theory and practice within teacher education is relevant to pre-service teachers’ understandings and attitudes towards ‘good’ teaching and needs to be investigated in my own research.

Furlong et al. (1988) and Furlong and Maynard (1995) also noted that in the UK, school-based teacher training appeared to have gained dominance in teacher education, in alignment with the state preference for the competency discourse over the reflective-practitioner model (Moore, 2004). The competency model refers to the skills that pre-service teachers are supposed to acquire, develop and display for the purposes of assessment within teacher education courses, with the concomitant expectation that these are best developed through school experience. This has implications for how pre-service teachers might come to perceive ‘good’ teaching as there is a strong conscious effort to fit into their mentor’s way of doing things (Calderhead and Shorrock, 1997; Munby et al.,



2001). The role of mentors in shaping perceptions of ‘good’ teaching is also compounded by the hierarchical relationships between pre-service teachers and their mentors, with the latter taking the lead in establishing the nature of their professional relationship, and in creating opportunities for the pre-service teacher to learn from them (Ferrier-Kerr, 2009).

### Subject Context

My study focuses on *geography* pre-service teachers, and as such, when discussing ‘good’ teaching, subject-specific interpretations of how best to teach geography need to be taken into account as well. These ideas about teaching geography can vary over time and space and are affected by the national education and teacher education contexts. In the UK, it was observed that the field of geography education had moved from one that focused on curriculum development in the 1970s to an almost exclusive focus on pedagogic matters in the 1980s and 1990s (Morgan and Lambert, 2011). In recent years, fieldwork and other forms of pedagogy that encouraged active learning and engagement with the real world were encouraged as viable forms of pedagogy in geography. For example, in its manifesto, *A Different View* (2009), the Geographical Association promoted the use of geographical enquiry as a means of actively engaging learners with the subject and the real world. This can also be seen in handbooks for secondary geography like *Learning to Teach Geography in the Secondary School* (Lambert and Balderstone, 2000) and *Secondary Geography Handbook* (Balderstone, 2006). Such understandings about teaching geography well using experiential approaches are related to about what doing geography and entails and what types of bodies are involved in geographical studies in my research (see discussion in Section 2.3).

There has also been a renewed interest in the subject matter itself and its purpose in education in general in the last ten years in the UK. This is exemplified in *A Different View* (Geographical Association, 2009), as well as in handbooks like *Geography* (Morgan and Lambert, 2005) and *Secondary Geography Handbook* (Balderstone, 2006) where important sections focused on the relevance and purpose of geography and its key conceptual understandings. The purpose of geography was encapsulated in the notion of *Living Geography* (*A Different View*, 2009: 13) which emphasised bringing ‘contemporary context and real world enquiry to the curriculum’. Geography educators have since written on the geography curriculum’s role in engaging young people with issues like sustainability (Morgan, 2012), globalization (Butt, 2011) and justice (Winter, 2011). Related to this, the geography teacher’s subject matter knowledge and his/her role as mediator of geographical knowledge for students, has also come under the spotlight (Morgan and Lambert, 2005; Brooks, 2006, 2010).

In the USA, although there has been increasing interest in the value of a geographic education as seen in publications like a *Road Map for 21<sup>st</sup> Century geography Education*, the articulation of geography’s concepts for teaching generally tends to be limited to that of spatial thinking. The *National Geography Standards* outlined in (Geography Education Standards Project, 1994) for all American students focused on geography as ‘the study of the spatial aspects of human existence’ (pg. 18). In this articulation of geography, the subject has ‘practical value through the application of a spatial view to life situations’ (pg. 29). Such a viewpoint was also championed by writers like Bednarz and Bednarz

(2004). ‘Good’ geography teaching in the US context therefore heavily involves the use of maps and other graphic representations of spaces and places and seeing spatial patterns and relationships between areas (*National Geography Standards*, 1994: 42-43).

What this section has shown is that discourses within the subject context about what constitutes a geographical education changes across time and space. These shifts affect the roles and responsibilities of geography teachers in terms of what they should be *doing* as ‘good’ subject teachers – in both how they teach as well as the types of purposes that geography should serve. In my research, therefore, it is important to understand the ways in which subject-specific discourses frame what constitutes ‘good’ teaching and to explore how each individual reconciles or resists these discourses in light of other contextual influences (including their own personal contexts).

### School Context

...the power of the school for transmitting information must not be underestimated; schools transmit beliefs about teaching and about the correctness of these beliefs (Munby and Russell, 1994: 92).

The quote above highlights the important role that schools play in influencing how teachers perceive ‘good’ teaching. Much of the research on the school context in both the UK and the USA arose due to an interest in school effectiveness and improvement, where it was found that contextual factors played an important role in effecting school improvement. This type of research also analysed school contexts as infused with power relationships or ‘micropolitics’ (Blasé, 1991). For example, Sarason (1996: 89) noted that efforts to improve schools that are ‘insensitive to the issue of power courts failure’. As

such, studies on school improvement go hand in glove with research on the micropolitics within schools. The micropolitics literature is also useful in recognizing that power is not always wielded unilaterally by school authority figures over teachers, and that not all teachers are similarly affected by power structures. The Foucauldian (1971, 1979) concept of disciplinary power is useful to such scholars because it shifted analysis from the realm of social structures to an analysis of power as it affected each individual based on his/her situation within the school organisation. For example, writers like Hoyle (1986), Ball (1987), Blasé (1991) and Blasé and Anderson (1995) illustrated how diversely situated individuals and groups in the school context leveraged on different forms of power to influence one another.

Another aspect of the school context studied relates to understanding collegial relationships within schools. Researchers like Hargreaves (1980) and Rosenholtz (1988) highlighted a culture of isolation and individualism of teachers. Conversely, other researchers found that school cultures and collegial relationships were a source of strength that allowed teachers to resist state policies they did not agree with. For example, Robinson (2012) observed that teachers working in a western Australian school with strong collegial relationships were able to adapt and reshape policy requirements, and thereby maintain their understanding of their work as ‘good’ teachers to primarily nurture rather than assess students.

This body of research highlights that (power) relationships within schools are complex and affect teachers’ work, partly by affecting their understandings of professionalism, and

by extension, 'good' teaching. The discourses that pervade the school context are therefore clearly important to my research on how pre-service teachers reconcile their own subject conceptions with other understandings of what it means to be 'good' teachers of geography. However, schools do not exist in isolation. Stoll (1999) asserted that each school has its context that is influenced by external forces, and yet is differently affected by them. The external forces affecting schools include state policies (discussed above), the influence of the community (Louis, 1990; Corbett, 1991), the social class of teachers themselves (Metz, 1990), and popular conceptions of teaching and schooling (Weber and Mitchell, 1996). In my research the discourses that dominate school contexts need to be interrogated in relation to discourses that operate at the national education, teacher education, subject and personal contexts.

### Personal Context

The personal context of teachers has been studied in relation to how it affects teachers' professional identities. For example, work has been done to understand teachers' personal contexts through a representation of their stories and metaphors (Elbaz, 1990) and life histories (Goodson and Hargreaves, 1996; Goodson, 2003). Understanding pre-service teachers' personal lives is crucial because it unpacks the latent beliefs that they may bring into the service. These beliefs are important as

... the personal beliefs and images that pre-service candidates bring to programmes of teacher education usually remain inflexible. Candidates use the information provided in course work to confirm rather than confront and correct their pre-existing beliefs. (Kagan, 1992: 154)

The quote above suggests that it is necessary to identify and understand the beliefs about 'good' geography teaching that respondents have in my study. Research on beliefs in general tends to point to the resilience of belief systems that have developed earlier in life (Rokeach, 1968; Nisbett and Ross, 1980). These beliefs are not open to persuasion and instead bias interpretations of subsequent and often contradictory information (Nisbett and Ross, 1980). They also have strong affective components that are separate from knowledge and remain immutable even in the face of new information (Nespor, 1987). In teacher education, it was argued that it is difficult to alter the beliefs about teachers' professional identities and teachers' work that pre-service teachers already hold (Elbaz, 1983; Tabachnick and Zeichner, 1984; Bullough and Knowles, 1990; Calderhead and Robson, 1991; Holt-Reynolds, 1999). This is partly because pre-service teachers are insiders in the education system because of their past experiences as students (Lortie, 1975; Goodman, 1986; Ball, 1988; Leinhardt, 1988; Johnston, 1990; Calderhead, 1991). Teachers are therefore led by 'guiding images' from the past which form intuitive screens through which new information is filtered (Goodman, 1986; Calderhead and Robson, 1991).

However, the literature also caveated that it is not necessarily the case that all pre-service teachers' beliefs are closed to change or influence. Rokeach (1968) suggested that the ability to change or influence beliefs depends on how 'connected' they are to other beliefs, while Peterman (1991) observed that 'core' beliefs are harder to change than others. In the education literature, it has been suggested that beliefs, though hard to influence and changed only as a last resort, are still malleable if they prove unsatisfactory

and cannot be assimilated into newer conceptions (Posner et al., 1982; Tanase and Wang, 2010). Connelly and Clandinin (1988), Gomez and Tabahnick (1992), Goodson (1992) and Heydon and Hibbert (2010) also suggested that using personal narratives as a way to critically reflect on their practice might be a viable means of helping teachers to change beliefs that do not stand up to critical examination. In addition, Pajares (1992) observed that people can hold contradictory beliefs in different aspects of their lives and the beliefs that they draw upon to frame their actions are 'context-specific' in nature (Pajares, 1992: 312). This suggested to me that although the beliefs my respondents' articulate to me about 'good' teaching in the interview context may be important and deeply ingrained, I should also be aware that in a different context (e.g., in a school situation), they may draw upon a different set of beliefs to help them in their work. In addition, the literature also implies that these beliefs may change as a result of undergoing the teacher education programme if they are not 'core' or 'connected' to the rest of the beliefs that the respondent holds.

Another aspect of study on teachers' personal contexts relates to teachers' emotions and emotional responses to teaching (Hargreaves, 1994; Bullough and Draper, 2004), and their impacts on teachers' professional identities (Margolis, 1998; Hargreaves, 2001). Zembylas (2005) applied an explicitly Foucauldian analysis to emotions in the constitution of teacher identities, arguing that these were understood and formed by the interplay between power and teachers' emotional responses to the discourses/ discursive practices around them.

In other words, people choose among the various discourses that are available to them or act to resist those discourses. (Zembylas, 2005: 938)

This view on teachers' personal and emotional response to power (through the discursive practices and disciplinary technologies in teaching) and the ways in which power informs teacher identity was also extended to other aspects of a teacher's personal attributes. For example, Gaudelli and Ousley (2009) found that beginning teachers negotiated their relationship with the school context differently, due in large part to personality differences, while Hoadley and Ensor (2009) approached the beliefs and practices of teachers from the viewpoint of their social class. Powell (1992) and Mayotte (2003) also studied how previous work and life experiences affected the beliefs and skills of more mature second career teachers differently from their younger counterparts, resulting also in their different treatment in the workplace by colleagues and mentors. In all of these instances, teachers' personal contexts, or *who* they were, enmeshed them in individual and idiosyncratic relationships with various types of education discourse. The literature therefore suggests to me that it was important to understand pre-service teachers' beliefs as well as emotional responses to teaching, since these impact their understandings of what 'good' teachers of geography are supposed to do, and has implications for whether they draw upon their subject conceptions in their teaching.

One important aspect that tends to be overlooked in research on subject conceptions and in geography education is the influence of the *body* on teacher identities. One of the earlier education theorists to highlight that teachers' bodies affect their work is bell hooks (1994: 17), who argued against the notion that teachers 'enter the classroom to teach as



though the mind is present, and not the body'. Since then, other writers have examined the ways in which the bodies of teachers, as integral parts of who they are, affected teachers' work. After all, as noted by Freedman and Stoddard Holmes (2003: 7), we need to 'discard the fiction that the teacher has no body', and acknowledge that 'Visible and/or invisible, the body can transform both the teachers' experiences and the classroom dynamics'.

Much of the education research in this area began with a concern with gender stereotypes in contemporary developed societies which cast teaching as a feminised profession, where women's reproductive capacities become entwined with teaching as a practice of nurturing and caring for children (Drudy et al., 2005; Forrester, 2005; Leathwood, 2005). Researchers also noted an inherent tension between women's bodies and their career progression (Boulton and Coldron, 1998; Moreau et al., 2007; Luke, 1998). These studies argued that images of 'good' teaching tend to privilege the disembodied, competent and rational individual, while obvious manifestations of the corporeality of female bodies (e.g., pregnancy) undermined teachers' authority as serious thinkers (Spangler Gerald, 2003).

Since then, researchers have extended the examination of the teachers' body and its relationship to teachers' professional identity from the standpoint of race, pointing out the privileging of white attitudes, values and beliefs in education in Anglo-American contexts (Solomon et al., 2005; Bariso, 2001; Levine-Rasky, 2000). Another aspect of how teachers' bodies affect their work is the sexuality of teachers. Overt signs of

sexuality are deemed inappropriate in the educational context (Giffen, 2003; Wallace-Sanders, 2003). Jones (2004) observed that teachers policed their physical proximity to students for fear of accusations of sexual abuse, a situation that is especially marked in the case of male teachers (Johnson, 1997; Phelan, 1997; Skelton, 2003). Other writers also examined the impacts of disability and sickness (Di Palma, 2003; Herndl, 2003; Pence, 2003; Smith, 2003) and age (George and McGuire, 1998; Daly, 2003, Hargreaves, 2005) on teachers' professional identities.

That teachers' bodies are implicated in understandings of 'good' teaching is an important consideration in my research. This issue is also important because of the argument that traditional understandings of geography as a discipline incorporate fieldwork undertaken by able young (male) bodies (discussed in Section 2.3). It is also epistemologically relevant to my study, given my interest in teachers' decisions about performing particular versions of 'good' teaching. As such, in my own research on teachers' subject conceptions and its relationship to teachers' work, it is important to address what the bodies of 'good' geography teachers look like and what they do in geography classrooms.

### Summary

The literature review in Section 2.4 has necessarily drawn on a broad range of fields within education research to outline how power and discourse are implicated in teachers' framings of 'good' teaching. Moreover these discourses on 'good' teaching are complex and sometimes contradictory within and across contexts, and teachers have to reconcile multiple and competing discourses in their work. I argue, however, that it is precisely this

complexity that gives rise to the lack of consensus in the subject conceptions literature about the nature of teachers' disciplinary understandings and its implications for their work. It is therefore important to interrogate how each uniquely positioned individual negotiates and reconciles discourse on what geography is and how geography should be taught, if we wish to move beyond the level of each teacher and each study to generate theory about these links.

Moreover such an analysis also avoids rendering the individual as a slave to societal structures, be it at the national, subject, teacher education or school levels. This is because an explicitly Foucauldian (1971, 1979) analysis provides the possibility of a conscious subject who is innately capable of resisting discourse from the site of his/her personal context (Butler, 1990, 1993) in the ways in which he/she chooses to 'perform' 'good' geography teaching. In the next section, I present a conceptual framework that illustrates my understanding of how all the diverse literature discussed in this chapter may be tied together. This framework will be used to guide the ways in which I plan my research approach, design, methods and analysis in subsequent chapters.

## **2.5 The Conceptual Framework for Research**

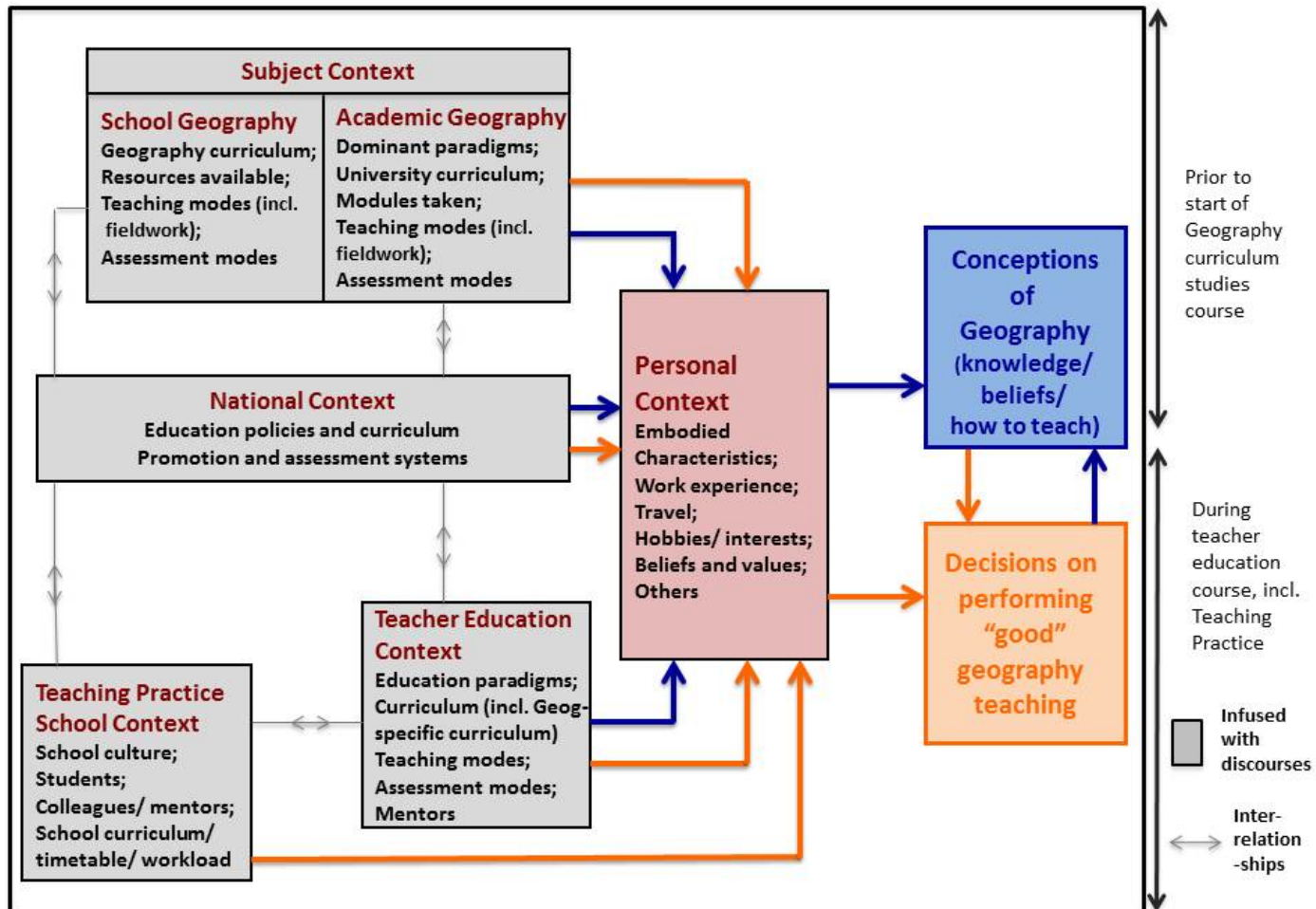
In Figure 2.1, the national education, subject, and teacher education contexts are presented as infused with discourses which manifest themselves in multiple forms – in policies, curricula, coursework, assessment modes, cultures and relationships with others. These discourses and their manifestations are mutually constitutive and affect each individual's subject conceptions in idiosyncratic ways both prior to and during the

teacher education course. Discourses are framed and reconciled by each individual from his/her personal context which results in conceptions of geography (including cognitive and affective dimensions), and conceptions of how to teach it, which are unique to each individual. This relates directly to my first research question:

**1. How do pre-service geography teachers in Singapore reconcile (and resist) discourse about geography to articulate their conceptions of the subject?**

In a similar manner, the national education, subject, teacher education and Teaching Practice school contexts are infused with discourses that affect how each individual (through the filter of his/her personal context) understands what it means to be a ‘good’ geography teacher. This manifests itself in the decisions made by teachers in their performance of ‘good’ geography teaching – which may be the result of both a process of reconciliation of, and resistance to, multiple and complex discourses (process represented by orange arrows).

Figure 2.1 Conceptual Framework



At this point, it is necessary to caveat that *performing* ‘good’ teaching is understood in my research from the viewpoint of the pre-service teacher, not of the observer. This is because my research valorises what the pre-service teacher knows and what the pre-service teacher chooses to do in a context where he/she needs to appear to advantage in a high-stakes assessment situation (see Chapter Three for a discussion on how the Teaching Practice is extremely high stakes in the Singapore context compared to most other teacher education contexts). My research methodology therefore focuses on highlighting and making explicit the respondent’s thoughts and decisions behind his/her performance of ‘good’ teaching, rather than on an observer’s assessment of the performance (including my own). This is further discussed in Chapter Four.

It is only after we have understood the processes behind this performance that it becomes possible to unearth the links between what the pre-service teachers knows (and believes) about geography and his/her practice. This relates to my second and third research questions:

- 2. How do pre-service teachers reconcile (and resist) discourse in their decisions about *performing* ‘good’ geography teaching? To what extent do they draw upon their subject conceptions of geography in doing so?**
- 3. How and why do pre-service teachers’ conceptions of geography change after Teaching Practice?**

In this chapter, I have outlined the literature related to my research, identified the implications of this literature for my study and conceptualised the relationships among the literature and my research questions in the conceptual framework illustrated in

Figure 2.1. However, these descriptions and analyses, while important, are insufficient for understanding the specificities of the *Singapore* education context. These are crucial because the ways in which they are similar or different to the study contexts outlined in this chapter are intimately related to my research outcomes. As such, I provide just such an understanding in Chapter Three.

## **Chapter Three: The Singapore Context**

### **3.1 Introduction**

In the previous chapter, I have argued that a careful examination of how discourses frame pre-service teachers' understandings of geography and 'good' teaching, as well as their subsequent decisions regarding whether to draw upon these understandings during Teaching Practice, allows us to gain insight into the nature of the links between teachers' subject conceptions and practice. This approach would help to address the current lack of consensus on these links in the literature. While the review in Chapter Two has provided important insights into different aspects of my study, it is crucial to turn the spotlight explicitly on the Singapore context. Although many aspects of the research findings discussed earlier are relevant to Singapore, there are elements in the Singapore case that need to be highlighted if one is to understand the experiences of the pre-service teachers being studied better. In this chapter, I therefore present the pertinent information related to my study.

### **3.2 National Education Context**

To understand the Singapore context, one must first be clear about the role of education in Singapore society and the role of the state in formulating and implementing these policies. In Sections 2.3 and 2.4, I have discussed the role of the state in affecting education discourse in countries like the UK. I would argue that in the Singapore context, not only is this also the case, the control and influence of the state is *stronger* given how education is centrally controlled to a larger extent. Singapore's transformation from a socially fragmented post-colonial society with no natural



resources, an undeveloped manufacturing sector and a weak domestic market in 1965 to an economically vibrant, and politically and socially stable state today, has often been attributed to the pivotal role that education played in the dual task of nation building (Yip et al., 1997) and economic development (Gopinathan, 1997; Ng, 2008). In 1965, then-Prime Minister Lee Kwan Yew expressed his belief that education could bring about a 'pyramidal structure of top leaders, good executives, well-disciplined civic conscious broad mass' (in Yip et. al., 1997: 4) that would allow Singapore society to move forward and succeed economically and socially as a nation. It is interesting to note that the social transformation in the then-Prime Minister's terms was one where an elite group would be groomed to lead an obedient, co-operative and disciplined mass of workers towards economic development and prosperity. This top-down structure in government is a key organising feature of Singapore society and has important implications for how discourses permeate across the different contexts I discussed in Chapter Two.

Education as a means of social transformation and control with economic competitiveness as the goal continues in Singapore society today. Those concerned with the role of education in Singapore's economic development have noted how education 'features in many national strategies' and is 'always adjusting to align with national directions' (Ng, 2008: 2). Yip et al., (1997) and Gopinathan (1997) discussed these major reforms and alignments in Singapore's education system in the first 25 years of independence. In the 1960s, Singapore embarked on a programme of rapid quantitative expansion of education facilities, which included a technical bias in the school

curriculum to meet the needs of a rapidly industrialising economy. The late 1970s through to the early 1990s saw an increasing concern with developing education facilities at secondary and tertiary levels, developing and refining national curricula, and fine-tuning the education system by creating different streams at every level within the system such that students with different academic abilities could proceed at their own pace. This period also coincided with Singapore's economic transition from a labour-intensive to a capital-intensive manufacturer, where the labour force had to be transformed into one where there were not just workers, but also skilled managers, scientists and technicians to sustain the economic progress already made.

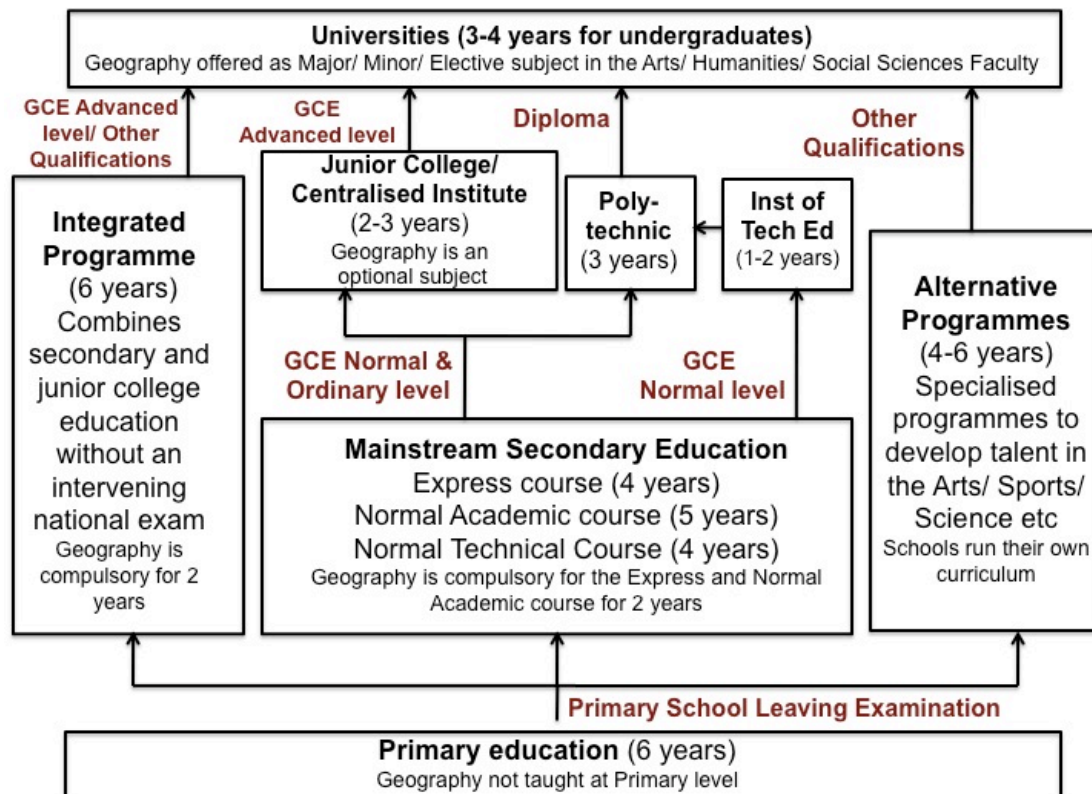
Today, the education mantra in Singapore is *Thinking Schools Learning Nation* (TSLN), which was first espoused by then-Prime Minister Goh Chok Tong in 1997.

*Thinking Schools* aims to develop creative thinking skills, lifelong learning passion and nationalistic commitment in the young. *Learning Nation* aims to make learning a national culture, encouraging creativity and innovation at every level of society, which goes beyond schools and educational institutions. (Ng, 2005: 1)

This emphasis on critical thinking, creativity and national commitment acknowledged the contemporary knowledge-driven and globalised economic environment. One important consequence of TSLN was a move towards decentralising the education system and providing more diversification and choice so as to nurture the types of creative and innovative talent deemed important for the economy. Integrated and Alternative Programmes (see Figure 3.1) have been developed in addition to mainstream

secondary education. The Ministry of Education (MOE) also attempted to increase the autonomy of some schools within mainstream secondary education.

**Figure 3.1 The Singapore Education System**



Another feature of TSLN was an emphasis on creativity and critical thinking skills, with the implication that the role of classroom teachers would change. In 2004, Prime Minister Lee Hsien Loong announced the *Teach Less, Learn More* (TLLM) strategy to signal a transition from ‘quantity’ to ‘quality’ education, shifting the focus of classroom instruction away from an emphasis on examinations to finding alternative practices to engage ‘the hearts and minds’ of students (in Hogan and Gopinathan, 2008: 370-371). Syllabi and examinations were accordingly revamped to give more attention to

creativity and critical thinking skills, and content was cut by up to thirty percent in some subjects, including geography. The MOE also devolved the publication of textbooks and instructional packages (once centrally managed by an offshoot of the MOE, the Curriculum Development Institute of Singapore) to the private sector from 2000. It also declared its intention to work with teachers to help them draw up their own guidelines and formulate lesson plans that met their own students' needs (MOE press release, 21 March 1998).

In examining the education scene in Singapore, a number of important observations can be made. First, it is clear that all the changes described above were state-driven. The power of the state in setting education policies and determining what constitutes valuable knowledge and how it should be taught remains strong. Scott (2000) suggested that policy documents did not necessarily translate into implementation but depended on the level of prescription, central control of policy implementation and funding, and the use of regulatory bodies. In the centrally controlled Singapore education context these factors do indeed exist and one would expect that these state-initiated reforms would be implemented swiftly and efficiently. Indeed Deng and Gopinathan (2003: 51) noted that a 'veritable hurricane of reform initiatives in Singapore schools' followed TSLN, affecting every level of the education system from pre-school right up to tertiary education.

However, despite these moves towards more diversity in the education system, a changing emphasis from content to creativity and critical thinking skills, and

encouragement to teachers to move away from a technicist view of teaching, mind sets within the education system (and society in general) are hard and/or need more time to change. For example, Sharpe and Gopinathan (2002: 157) noted that

...the centrally mandated curriculum remains in place and no independent or autonomous school has moved from the subject-based curriculum; moreover, the range of subjects offered in these schools is identical to those offered in non-independent, non-autonomous schools.

That teachers could design their own subject curriculum and move away from the technicist view of teaching is also in doubt. In a study conducted by Wong and Stimpson (2003) on environmental education in Singapore, it was found that the geography and biology syllabi drawn up by the MOE were based on environmental issues initially identified by the Ministry of Environment. Textbook publishers used the curriculum provided to guide the orientation and content of textbooks, which were then given MOE approval. The role of the teachers in schools was to select the textbook they liked best and to follow the textbooks that put the intended curriculum into practice. What was considered worth learning in school was therefore set firmly by the state.

The TSLN initiatives described had the potential to change expectations of 'good' teaching. However, Hogan and Gopinathan (2008: 370) pointed to the 'very tight coupling between the high stakes summative assessment system and classroom instruction' in Singapore schools. The Singapore education system has always been and continues to be a highly competitive one. At the time of data collection, all secondary schools and Junior Colleges had been ranked on an annual basis since 1992 and the

results were published in the local newspapers. Although steps had also been taken by the MOE to broaden the criteria by which schools were ranked to include non-academic criteria, the basis for comparing schools still remained overwhelmingly focused on academic results (Tan, J., 2005) during my research<sup>1</sup>. In fact Tan, C. (2005: 7) pointed out that despite the apparent emphasis on developing each child to his/her fullest ability, 'different talents and abilities are still valued differently'. This competition puts pressure on schools and hence, teachers, to focus narrowly on outcomes that are relevant for public ranking, and this is especially the case in the Singapore context where examinations remain a key determinant of educational and social mobility (Tan, J., 2005). These conditions have profound implications for what teachers teach and teachers' assessment of 'good' teaching. Studies have shown that teachers in Singapore were well-aware of the value of changing their pedagogy to allow for critical thinking and creativity in their classrooms, but were reluctant to do so because they were afraid to compromise their students' examination results (Chai et al., 2006; Retna and Ng, 2006). This was further supported by the fact that teachers were also ranked annually (within and across schools in the same 'cluster') with higher rankings commensurate with higher performance bonus payouts (Liew, 2008). One of the areas in which teachers were assessed was their students' performance in school-based or national examinations. These rankings also contributed to the assessment of a teachers' potential for promotion within the education service.

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<sup>1</sup> The ranking and banding of schools using academic criteria was removed in 2012, and the criteria for rankings and school excellence have also been modified.

In short, at the time of data collection the Singapore national education context was one in which state discourses played a major role in affecting not just what teachers thought needed to be taught (content) but also how a ‘good’ teacher should be doing his/her job (teaching in ways that developed critical and thinking skills in their students). However, despite the reforms undertaken in TSLN, competing discourses related to the assessment and ranking of schools and teachers still compelled teachers to follow prescribed syllabi using MOE-approved textbooks to guide their work, under great pressure to help their students perform well academically in national examinations.

### **3.3 Subject Context**

In Chapter Two, I have outlined how understandings of geography as a discipline (in school and in academia) shifted across time and space. In addition, Chapter Two also highlighted the fluid and problematic relationship between the school and academic variants of geography that pre-service teachers have to reconcile. It is therefore important to situate geography within the Singapore context, and to understand better the shape(s) that school and academic geography have taken, if we seek to investigate the subject conceptions of pre-service teachers, and/or its relationships with their practice.

Together with the History, Literature and Social Studies, geography is considered a Humanities subject in Singapore. In recent parliamentary debates, the declining status of and student enrolment in the Humanities subjects have come under the spotlight (*FY 2013 Committee of Supply Debate*, 29 Mar 2013) due to perceptions that the Humanities

are not as relevant and practical as Math and Science subjects. This sits squarely within an overall national context where education is seen as a tool for economic competitiveness at both the individual and society levels. With reference to Figure 3.1, geography is a compulsory subject at lower secondary level, and an optional subject at upper secondary level where it is taken as a ‘pure geography’ subject, or as a ‘geography elective’ subject taught in combination with Social Studies (see Appendix 3.1 for the respective syllabi).

A close look at the geography syllabi points to certain similarities across all the syllabi aims: an emphasis on understanding physical-human relationships, the development of skills related to acquiring, communicating and applying geographical knowledge, and the development of an informed concern about the environment. The syllabi also require secondary school geography teachers to be able to teach both physical and human geography components and to have a clear understanding of the relationship between these, as outlined above. Although on the surface, it might appear that the syllabi give equal coverage to both physical and human geography, this is not really the case. This is because a sizeable proportion of the physical geography component is dedicated to the consideration of the interactions between people and the environment with the management of the environment as an aim. When studying human geography topics, however, man-nature interactions are emphasised far less. My own review of textbooks from the mid-1980s up to the point of conducting research indicated that not only was human geography emphasised, but there was also a tendency to highlight the parts of geography that were deemed most relevant to Singapore’s strategic interests. This is in



line with Wong and Stimpson's (2003) argument that environmental knowledge in Singapore has a Singapore-centred bias (See Section 3.2).

Geography has been co-opted by the MOE as a subject through which the National Education (NE) programme is to be implemented. The NE programme was coined under the TSLN initiative, as the state was concerned that young Singaporeans would not feel rooted to Singapore in a period of rapid globalisation. It aimed to provide students with knowledge about Singapore's past and present challenges and its place in the world in order to develop in the youth a sense of national cohesion and the instinct for survival and confidence in the future (Sim and Chee, 2005). All of the geography syllabi for secondary schools (Appendix 3.1, under the section on 'Values') state that through the study of geography, students should demonstrate an 'awareness of Singapore's strategic vulnerabilities and constraints, and the strategies used to overcome them' as well as develop 'an instinct for survival and confidence in the future of Singapore'.

In Chapter Two, I discussed how state intervention in the school geography curriculum in the UK impacted on public perceptions of the subject. When considering the discourses surrounding school geography in Singapore, therefore, it is important to remember the role of the state in prescribing what kind of geography is taught in schools – one that is centred on both human geography and Singapore. This has the potential to impact the content knowledge of Singapore teachers and also influences their beliefs about the purpose and role of geography, and by extension, the subject conceptions of the respondents in my study.

As noted in Section 2.3, there was a split between the school and academic variants of geography in the UK. This is also true in the Singapore context, where school geography has always been in the hands of the state, while this is not the case for university geography. The Department of Geography at the National University of Singapore, or NUS (where every single one of my respondents studied), prides itself on being highly internationalized and responsive to practices and paradigms developing in Anglo-American universities (Yeoh et al., 2004) and is not much concerned understandably, with promoting a geography curriculum that matched up to the school curriculum. However, like school geography, the NUS has a marked human-geography bias. Figure 3.2 below provides a snapshot of the types of modules on offer in the department in 2004/2005 (extracted from the NUS Department of Geography Handbook 2004/2005) when my respondents were enrolled as students.

**Figure 3.2: Breakdown of Geography Modules, NUS (2004/2005)**

<b>Year</b>	<b>Human Geog</b>	<b>Physical Geog</b>	<b>Skills and techniques</b>	<b>Integration of Human and Physical</b>
1	1	0	0	1
2	6	3	2	0
3	6	1	1	2
4	6	2	1	3
<b>Total</b>	<b>19</b>	<b>6</b>	<b>4</b>	<b>6</b>

The table suggests that the NUS provided a much more robust human geography curriculum than it did a physical geography one, with a total of nineteen human geography modules offered in the 2004/2005 academic year, and only six purely physical geography ones. My review of the bibliography of theses written in the

department between 1953 and 2001 supports this impression: there were 28 pages of human geography-related theses, and only eight pages of physical geography-related ones. This bias could be linked to discourses in school geography in the sense that undergraduates in Singapore tend to opt for human geography modules since they are more familiar with the content. It could also be because of discourses operating at the institutional level (like research funding allocation or the specialties of the faculty hired at the NUS). Whatever the case, even at the NUS, the result is that geography tends to be human-centric. Given therefore that the bulk of the pre-service geography teachers come into teaching through the school system and university with more human geography under their belts, I am interested to uncover if the subject conceptions of my respondents reflect this bias as well.

In Section 2.3, I also discussed discourses surrounding geography and the body and the influences these might have on teachers' geographical conceptions. I suggested that fieldwork might be one example of how the body was especially relevant to conceptions of geography. In examining the subject syllabi at school level<sup>2</sup>, it is obvious that fieldwork skills were not explicitly tested in the examinations. Given the propensity to teach to the test observed in Section 3.2, it is not surprising that Chew (2008: 307) observed a 'lack of critical focus on fieldwork as an essential part of geography education in Singapore'. In the whirlwind of reforms following TSLN, as well as geography's co-option into a vehicle for the NE programme, Chew suggested that

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<sup>2</sup> From 2013, fieldwork is included as an examinable component of the new upper secondary geography syllabi, but this was not relevant to my respondents at the point of data collection in 2007.

fieldwork was arguably ‘both non-essential and disposable in an already packed curriculum’ (pg. 307).

This is in contrast with the perception of geography at the university level in Singapore. Fieldwork in geography has traditionally had strong roots at the NUS. For example Goh and Wong (2000: 107) noted that surveying ‘using compass, plane table, level and theodolite’ were considered essential geography skills, and Honours students were posted to do fieldwork in various parts of Malaya as a matter of course. This prompted Yeoh et al. (2004: 123) to observe that the low female enrolment at the NUS before the 1980s was the result of a conflict between ‘Asian’ notions of femininity and the perception that ‘geography was a discipline that necessitated fieldwork’. Even today, a field studies module offered at the third year, involving stays of a few weeks at a time in various parts of Southeast Asia, remains a cornerstone of the geography programme at the NUS. At the same time, however, Yeoh et al. (2004) observed a shift in the gender structure of student enrolment in the university since the 1980s, with females outnumbering males at all undergraduate levels (though not at the graduate level). Within the faculty, the authors also noted greater parity in male to female ratios, even though the numbers were not yet wholly equal. This could be linked to the heavier emphasis on human geography modules offered within the department observed earlier. In Singapore therefore, a number of complementary and conflicting discourses are at work pertaining to the subject and its relationships to fieldwork. In my study, I am interested to understand how respondents respond to these discourses in their articulations of

geography, and also to unpack the ways in which geographers' and teachers' bodies are implicated in their conceptions.

### **3.4 Teacher Education Context**

The literature suggested that the teacher education context in the UK was affected by state discourses and policies that assessed and rewarded teachers based on a competency model of teaching (see Section 2.3). In Singapore, this is also the case although I would argue that the state has more direct control over teacher education than in the UK. Teacher education in Singapore comes under the jurisdiction of the National Institute of Education (NIE), which is solely responsible for the preparation of pre-service teachers before they enter the teaching profession. It offers a diploma in education for non-graduate teachers and a post-graduate diploma in education for graduate students. After 1991, the NIE became part of the newly established Nanyang Technological University, and also began offering degree programmes in education (Chan, et. al., 2007). The NIE shares a close relationship with the MOE. For example, its students are considered employees of the MOE, which pays their tuition fees and provides them with monthly salaries. Many of NIE's research programmes are funded by, and its staff seconded from, the MOE.

It is therefore not surprising that the NIE initiated major organisation and curricular changes in all its teacher education programmes in response to the TSLN reforms occurring at the national level at the MOE (Deng and Gopinathan, 2003). Deng and Gopinathan (2003) identified the main approaches to teacher education since

independence, while Lee (2003) outlined the major changes that took place at the NIE since 1999, following the TSLN initiative. These included an increasing emphasis on constructivist models of teaching believed to engender more critical thinking and creativity in the classroom. Research related to such pedagogies also flourished. For example, within geography education, Tan et al. (2006) researched the effects of teaching and learning geography using co-operative learning methods in Singapore schools, while Lee and Chang (2005) edited a volume on exploring new pedagogies in teaching geographical content in Social Studies in primary schools. The important point to note here are the ways in which discourses at the national education level affected teacher education through the relationships that exist between MOE and NIE in the areas of funding, staffing and employment. This has the potential to influence what knowledge (content and pedagogy) is emphasised to pre-service teachers.

In Chapter Two I have discussed how research showed that within teacher education programmes, course content was generally considered less relevant to pre-service teachers compared with the teaching practice component. This was aligned with the competency discourse (Furlong and Maynard, 1995; Moore, 2004) that was advocated by the state in the UK, for example, and which coincided also with the beliefs that many pre-service teachers had about 'good' teaching. In Singapore, Deng and Gopinathan (2003) noted that there was an increased focus on practical classroom experience in teacher education since TSLN. For example, the MOE shifted its recruitment strategy and posted new applicants to schools for varying periods of time even prior to their enrolment at the NIE as Contract Teachers. At the same time, the MOE also urged the

NIE to engage those with school teaching experience as their teacher education instructors (Deng and Gopinathan, 2003: 58). The authors argued that the valence of practical knowledge in learning to teach led pre-service teachers to view what their mentors did in schools as the only possible ways to teach. In Section 3.2 I have noted that high-stakes examinations and competition amongst schools influenced teaching in Singapore with the result that rote-learning and drilling for examinations was dominant. This ironically implies that state discourses on the importance of practical knowledge are in conflict with efforts to get pre-service teachers to adopt other pedagogies advocated at the NIE.

Another conflict that pre-service teachers in Singapore face resides in the ways in which they are mentored during the Teaching Practice component of the teacher education programme. In the post-graduate diploma programme that my respondents were enrolled in, pre-service teachers are posted by the MOE to a secondary school for ten weeks. During this period, they are observed by school-based mentors known as Co-operating Teachers (CTs), who assess their classroom competence using an *Assessment of Performance in Teaching* form, or APT form (Appendix 3.2). Their classroom competence is also scrutinized and assessed by their supervisor from the NIE whom the pre-service teachers, more often than not, have not had any prior contact with until the Teaching Practice. These mentors are the key influence on whether the pre-service teacher is certified to teach because failing the Teaching Practice means failing the entire teacher education programme. It is also important to reiterate that pre-service teachers are considered employees of the MOE once they enrol into the teacher

education programme, and would have already signed a contract which guaranteed them a monthly salary as well as the payment of their course fees at the NIE. Should they fail the programme, punitive damages amounting to about SGD\$150 000 would need to be paid to the MOE.

Pre-service teachers in Singapore are therefore placed in an extremely high-stakes situation during Teaching Practice where they have to meet the expectations of different sets of assessors regarding ‘good’ teaching. Sharpe et al. (1994) studied the relationships among pre-service teachers, their CTs and their supervisors during teaching practice in Singapore. The authors found that CTs tended to focus on classroom management, providing guidance on procuring teaching resources *within the school* and planning lessons *within their own* schemes of work. This contrasted with the supervisors who were more concerned overall with analysing pedagogy in the lesson and linking these to *institutional* knowledge (at the NIE). This is in line with Furlong et al.’s (1988) observation of how school mentors and supervisors from teacher education institutes appeared to focus on different aspects of a pre-service teacher’s training. Sharpe et al. (1994) also noted that both the CTs and the supervisors tended to dominate discussions with the pre-service teachers and the latter had little voice in these conferences. All this implies that pre-service teachers may be assessed as ‘good’ teachers by mentors who emphasise different aspects of teaching. Given this situation, my research seeks to investigate the ways in which teachers both reconcile (and resist) externally imposed notions of ‘good’ teaching, and the implications this might have for whether they draw upon their subject conceptions in their work.



### **3.5 School Context**

In Chapter Two, I discussed the micropolitics literature, highlighting that relationships within schools are complex and that teachers negotiate discourse in a multiplicity of ways in their work. Ball (1993) and Hall and Noyes (2009) pointed to an increasing trend of giving schools purportedly more autonomy and power through systems of self-evaluation, while at the same time tightening controls over what schools did through these very systems of ‘quality outcome assessments’ (Hall and Noyes, 2009: 111). This is certainly the case in Singapore with the use of the School Excellence Model (SEM) framework (see Appendix 3.3 for the SEM template). At the point of doing research, schools appraised themselves using the SEM template and justified their scores with evidence (school documents, academic and non-academic achievements, survey results etc.). ‘Excellent’ schools were deemed to have met their targets over a sustained period of time. Linked to the SEM were corresponding validation and awards systems for schools conducted within the MOE itself. Figure 3.3 below provides an overview of these awards.

The SEM has important implications for school contexts in Singapore. Existing research on Singapore schools suggested that school Principals played a large part in ensuring teachers’ motivation and efficacy (Cheong, 1986; Yong, 1986; Chen, 1989; Ho, 1997; Lee, 1998; Lee, C.M., 2001). Under the SEM, this dependence on the Principal intensified. Principals are expected to function like Chief Executive Officers (CEOs) and provide the vision and direction for the school to become ‘excellent’.

**Figure 3.3 MOE Master Plan of Awards for Schools**

Special Awards	School Excellence Award			
	School Distinction Award			
Level Two Awards	Sustained Achievement Awards		Outstanding Development Awards	Best Practice Awards
	Academic Value-Added	Physical & Aesthetics	Character Development	
	Academic Value-Added	<ul style="list-style-type: none"> <li>•Academic</li> <li>•Sports</li> <li>•Uniformed Groups</li> <li>•Physical Health</li> </ul>	<ul style="list-style-type: none"> <li>•Character Development</li> <li>•National Education</li> </ul>	<ul style="list-style-type: none"> <li>•Organisational Effectiveness</li> <li>•Student All-Round Development</li> <li>•Staff Well-Being</li> <li>•Teaching and Learning</li> </ul>
Level One Awards	Achievement Awards		Development Awards	
	Academic Value-Added	Physical & Aesthetics	Character Development	
	Academic Value-Added	<ul style="list-style-type: none"> <li>•Academic</li> <li>•Sports</li> <li>•Uniformed Groups</li> <li>•Physical Health</li> </ul>	<ul style="list-style-type: none"> <li>•Character Development</li> <li>•National Education</li> </ul>	

This has raised the concern, however, that school leaders are under great pressure to score well at all costs. Research has noted that schools launched more and more elaborate projects and expended a lot of energy collecting evidence - all aimed at satisfying the criteria spelled out in the SEM, and to qualify for the awards that went in tandem with high scores (Ng, 2005; Hogan and Gopinathan, 2008). This CEO mentality also led to schools spending more of their time and resources marketing their schools to the academically gifted or otherwise talented pupils (Tan, J., 2005), who could help raise the school profile and contribute to school ‘excellence’.

This orientation towards high SEM scores, awards and marketing has effects on intra-school relationships, as well as teachers’ work. Researchers working in the UK context

noted that teacher isolation and individualism, and increased monitoring and competition, resulted from a system of bureaucratic rationality (Section 2.3). This is also the case for Singapore teachers. For example, Liew (2008) documented how the stricter accountability requirements added administrative pressures on those with headship positions in schools, and increased the need for surveillance and control of the teachers under them. This finds credence in Kok's (1999) study that reported that department heads were often caught up in managing the ever-changing curriculum and monitoring teachers at the cost of facilitating improvement in their departments. This is especially problematic given research showing that teachers relied on their department heads to bolster their confidence and ability to implement the MOE's initiatives (Wee, 1999). Liew (2008) also observed the effects of SEM and institutional accountability on teacher stress and workloads, with teachers spending more of their time on activities outside classroom teaching since these yielded 'more visible dividends in the form of trophies, medals and titles than those won from the daily invisible grind of classroom teaching' (Liew, 2008: 117). This effect was compounded by the annual ranking exercise of teachers within schools noted in Section 3.2 leading to 'insidious effects on collegial relations' (Liew, 2008: 122).

Not all the research however, pointed to competition within the school context. Research into teacher collegiality and collaboration in Singapore also found that teachers were generally willing to collaborate and learn from one another (Seet, 2003). Klassen et al. (2008) found in a comparative study of teachers in Singapore and Canada that in Singapore people relied more heavily on group-oriented motivation beliefs like

collective efficacy to do their work well. Tan (2003) argued that collaborative projects among teachers exposed them to a diversity of perspectives and skills that benefited them in problem solving. Yeoh (1999) noted that peer coaching of new teachers benefited both experienced teachers (through helping them to question established habits) and new teachers (by socialising them into the educational environment of the school). Wong (2002) found that the beginning teachers valued more experienced teachers for their help with instructional skills, information on school practices and advice on classroom and pupil management.

The contradiction above regarding teacher collegiality is not surprising considering that school micropolitics vary, depending on a complex web of relationships between school leaders, teachers, students and other stakeholders. Discursive pressures therefore may interact in different ways depending on the school context. However, it must be remembered that almost all schools in Singapore operate against a national backdrop of intense competition and accountability at both inter- and intra-school levels, and that this competition stems in large part from institutional structures like appraisal and awards systems and the discourses that surround them. The extent to which pre-service teachers are drawn into school micropolitics and how the culture of the schools they conduct their Teaching Practice in affects their notions and performance of 'good' teaching, and the decisions they can make about whether to draw upon their subject conceptions in their work, will be investigated in my research. In addition, I also explore how practising in the school context might affect the ways in which pre-service teachers think about geography.

### 3.6 Personal Context

In Chapter Two, I noted that researchers in education have argued that data on teachers' personal lives is important to understanding the decisions teachers make in the workplace (Goodson and Hargreaves, 1996; Goodson, 2003; Brooks, 2007). Within subject conceptions research, Brooks (2007) also explicitly theorised the role of teachers' 'personal cultures' in affecting how they thought about geography and the work that they did. I have also suggested that an important part of *who* teachers are relates to personal embodied attributes. In the following discussion, I provide (non-exhaustive) examples of how different aspects of embodiment are implicated in the work that Singapore teachers do.

The Singapore state's role in controlling what is deemed valuable knowledge, as well as the paradoxical discourses that stem from state education policies, have already been discussed in the preceding sections. In the same way, the Singapore state and its policies also play a large part in shaping the subject identities of the Singapore population. For example, Teo (2011) described the ways in which state policies produced Singaporean society through the ways in which it shaped practices and produced meaning around family and gender roles. In this section, I illustrate how discourses in Singapore around different aspects of the material body can frame teachers' identities and practice by focusing on the research available on the gender, race and sexuality of teachers. I also outline the expectations surrounding teachers' conduct and appearance in the Singapore context.

Singapore society has often been charged with being overtly patriarchal in nature, revealed in both state policies and in the utterances of state officials (PuruShotnum, 1998; Chan, 2000). In 1993, then Prime-Minister Goh Chok Tong stated that in

... a largely patriarchal society, minor areas where women are not accorded the same treatment should be expected so long as the welfare of women and the family is protected. I would not regard them as 'pockets of discrimination' or 'blemishes' but as traditional areas of differential treatment. (cited in Chan, 2000: 39-40).

This is not to say that women did not benefit from the social advancements that came with education in Singapore. I would however argue that this social advancement took place within a larger patriarchal national context. This differential treatment has implications for female and male teachers' roles and responses in the workplace as well. Studies found that male teachers in general tended to be more positive about their work while women experienced lower morale and levels of motivation (Ho, 1985; Wong, 1986; Lee, 1999; Lee H.P., 2001). In a study of pre-service teachers, D'Rozario and Wong (1996) suggested that females reported more stress during Teaching Practice as they perceived that others had higher expectations of them due to teaching's feminised character as a whole.

Another example of the importance of teachers' personal attributes and how these linked to teachers' working lives in the literature lies in the intersection of education and race (and cultural) discourses. Singapore is a Chinese-dominated state (numerically, politically and economically). The state espouses a race-neutral meritocratic ideology, while at the same time assiduously cultivating an East Asian/ Confucian values system

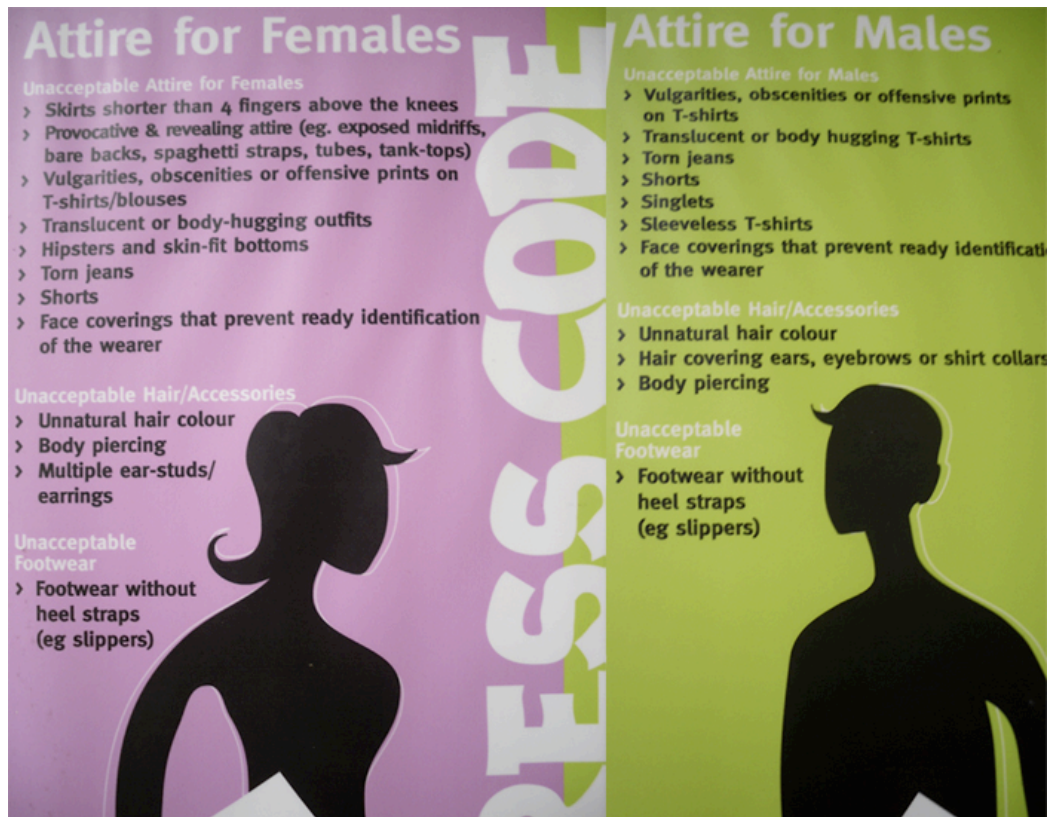
in society. Within this system, Malay under-achievement is attributed to a Malay culture that is not aligned with the larger society's emphasis on hard work and sacrifice (Ooi & Shaw, 2004), an impression that is perpetuated even within the stereotypical depictions of race depicted in primary school textbooks (Barr, 2006). At the same time, because the state vigorously upholds a race-neutral meritocratic ideology, especially in education discourse, these differences are often invisible and left unexplored in education research in Singapore.

Cultural differences associated with race may also affect teaching and learning in Singapore. For example, research found that when it came to pedagogical preferences, Malays professed a greater affinity for constructivist methods of teaching and learning compared with the Chinese (Chan et al., 2007; Lim, 2010). The authors of both studies attributed this to a traditional Chinese view of teachers as the sole custodians of knowledge and a preference for a top-down approach to pedagogy, with a low threshold for ambiguity and a great need for instant correction (Kennedy, 2002: 433 cited in Chan et al., 2007). Given the dominance of the cultural characteristics and values of the Chinese in the education context in Singapore, Malay teachers may face discursive pressure to abandon their own preferred pedagogies in the classroom.

The literature cited in Chapter Two also noted the taboo on overt signs of sexuality for teachers and a general preference that teachers dress conservatively. This is no different in the Singapore context. Figure 3.4 is an image from a poster found throughout the

NIE. From the poster, it is clear the preferred image of pre-service teachers is one that reflects decorum and respectability.

**Figure 3.4 Appropriate Attire for Pre-Service Teachers**



A look at the APT form with which pre-service teachers are assessed also stresses the importance of dressing ‘professionally’. Indeed the furore in the Singapore media over a Singaporean teacher taking part in an online bikini contest, as well as the public outcry over her image as a ‘gangster girl’ complete with tattoos on her blog (*The New Paper*, Oct 31 2008), points to the conservative image that is expected of teachers in Singapore.



In addition, the sexuality of teachers is also scrutinised in Singapore in a number of ways. For example, ‘schools have guidelines and measures to ensure that the daily interactions between teachers and students’ are conducted in ‘open spaces’. School leaders also ‘regularly remind teachers about appropriate behaviour through briefings and case studies’ (*MOE Parliamentary Reply*, 19 Jan 2012). Even the sexual orientation and preferences of teachers has come under scrutiny with MOE’s statement in June 2012 that only teachers ‘whose values align with the ministry’s values’ can teach sexuality education in schools (*Today Online*, 6 June 2012). These values included state-defined norms of abstinence before marriage and heterosexuality.

### **3.7 Summary and Implications**

In this chapter, I have highlighted the key features of the Singapore education landscape, with particular attention to the discourses that shape the various contexts within which pre-service teachers are embedded. The dominance of (sometimes competing) state discourses in Singapore society in general is paralleled by their dominance within the national education domain. However, it is important to remember that I do not conceptualise power as wielded by the state alone. Instead state discourses complement or compete with other discourses in society. It is the individual who ultimately reconciles and resists these discourses and makes decisions about what geography is and whether to draw upon this knowledge in his/her work. The focus of the study therefore remains on the individual and his/her perspectives and decisions (as reflected in Figure 2.1). This focus on the individual has important methodological implications for my study.

The focus on the individual also includes teachers' personal embodied contexts. This has important implications for my research design and methods. For example, in selecting my research respondents, I have to ensure diversity in terms of embodied attributes. Discourses important to shaping Singapore teachers' professional conduct and appearance also need to be elicited in the data collection methods. At the same time, ethical issues related to eliciting data on and discussing the sexual orientations and practices of my respondents have been raised in this chapter. In the next chapter, I discuss my research approach, design and methods in light of my research questions as well as the observations and issues raised in this chapter.

## Chapter Four: Methodology

### 4.1 Introduction

Chapter Two outlined the relevant literature that has informed this research and discussed a conceptual framework that undergirds this study. Chapter Three explored the Singapore context, outlining the particular discourses that affect pre-service teachers' articulations of their subject conceptions and which have the potential to influence the extent to which they draw upon these articulations during Teaching Practice. This chapter focuses on my research approach and design, as well as on data collection and analysis. In particular, it draws the links between the research questions to be investigated and the methods that were used to investigate them, taking care to outline the epistemological considerations that informed the development of my research methodology.

To reiterate, the research questions fall under two main categories:

#### What respondents say they know

- 1. How do pre-service geography teachers in Singapore reconcile (and resist) discourse about geography to articulate their conceptions of the subject?**

#### The relationships between what they say they know and what they do

- 2. How do pre-service teachers reconcile (and resist) discourse in their decisions about *performing* 'good' geography teaching? To what extent do they draw upon their subject conceptions of geography in doing so?**
- 3. How and why do pre-service teachers' conceptions of geography change after Teaching Practice?**

At this juncture it is important to make explicit what this research is *not* about. The research is not about whether teachers' understandings of geography are accurate or purposeful, or whether they are 'good' teachers (evaluated against externally imposed criteria). It is also not about whether teachers' reports of classroom practice are accurate (as verified by observers). Instead my research remains firmly grounded on what individual teachers say they know, what they say they do, *and why*. Obviously, this raises epistemological questions about the extent to which respondents can make claims to knowledge (Hammersley, 2002). Fenstermacher (1994: 51) observed that 'the challenge for teacher knowledge research is not simply one of showing us that teachers think, believe, or have opinions but that they *know*' [italics my own], that is, that these claims have 'epistemic merit' (pg. 44). This observation is very important to the development of my research design and methodologies and I was aware from the outset that I needed to ensure that I could transform the 'tacit quality of the teacher's knowing to a level of awareness that opens the possibility for reflective consideration'. It was my task to provide the means through which these tacit understandings could be 'surfaced' (Fenstermacher, 1994: 45-46). It was only if through this reflection, the respondent was able to explain his/her actions in a way that was coherent with other evidence and which made sense to me, that I could make a justified claim about what my respondents knew. The implications of this understanding will be elaborated on in the rest of this chapter.

Another important consideration resided in how I was going to manage power relationships within my research. Intended to unpack the discourses that influence pre-service teachers and their personal responses (reconciliations and resistance in their

decisions about what geography is and in their decisions about performing ‘good’ teaching) to discourse, my research therefore also needed to be sensitive to power and the ways in which asymmetrical power relationships might affect my research outcomes. Throughout this chapter therefore, even as I describe each component of the research design, I will address the issue of power and its implications for my study.

#### **4.2 Using Case Studies as a Research Approach**

Cohen and Manion (1994), in their introduction to research methods in education, presented a binary view of the social sciences, and suggested that the assumptions made about the nature of social science would affect the approach taken by the researcher. Denzin and Lincoln (1998: 8-9) made a similar argument, suggesting that a belief that reality was ‘out there to be studied, captured, and understood’ led to a normative, quantitative research paradigm, whereas a view that ‘reality can never be fully apprehended, only approximated’ led to an interpretive, qualitative research paradigm. In thinking about the best possible approach for my study therefore, I needed to be clear first what assumptions undergirded my research questions. I was seeking to describe and understand the ways in which pre-service teachers reconciled and resisted the discourses that influenced their subject conceptions as well as the decisions that teachers made about how to perform ‘good’ teaching and its relationships to the subject conceptions articulated. This necessitated an understanding of each respondent’s contextual situation. Patton (1985: 1) suggested that when the effort is ‘to understand situations in their uniqueness as part of a particular context’ and when this ‘understanding is an end

in itself', an interpretive approach was called for – one that strove for 'depth of understanding'.

A positivist approach towards my research would not do justice to the complex and multi-faceted nature of the phenomena I sought to understand. Merriam (1998: 6) suggested that while quantitative research took apart a phenomenon to examine its component parts, a strength of interpretive research is its ability to reveal how 'all the parts work together to form a whole'. While a quantitative approach might help to identify the factors that affected teachers' thinking and decision making, it would not be able to describe in detail how these factors interacted, for example. I therefore decided that my research called for a data-rich interpretive approach that placed respondents at the heart of the project. Indeed, other recent studies on subject conceptions also used the interpretive approach in order to describe their respondents' knowledge and beliefs and to understand the influences that shaped them (Corney, 2000; Martin, 2005; Hopwood, 2006; Brooks, 2007).

There are various ways in which a researcher interested in interpretive research can go about designing a research strategy. Yin (1994) suggested that the research questions would determine if a case study approach was an appropriate research strategy. A case study design would be employed to gain an in-depth understanding of a situation and uncover meaning for those involved. The interest lay in the process rather than in outcomes, in context rather than in specific variables, and in discovery rather than confirmation (Merriam, 1998: 19). Bromley (1986: 23) argued that case studies would

get as close to the ‘subject of interest as they possibly can by means of direct access to subjective factors’ (thoughts, feelings, desires), and ‘spread the net of evidence widely’. Provided that the research was set up and conducted properly, this approach therefore had great internal validity for my research because it set out to describe and understand what was being studied as thoroughly and holistically as possible (Lincoln and Guba, 1985; Bromley, 1986).

### The Case Study Approach

What makes a case study approach different from other types of interpretive research is that it involves intensive descriptions and analyses of a single unit or bounded system (Smith, 1978), be it at the level of the individual, or a school, or a community. Stake (1995: 2) also defined the case as ‘an integrated system’, while Miles and Huberman (1994: 25) presented the case as a phenomenon of some sort ‘occurring in a bounded context’. While the scale of the case might vary, what made something a case was its intrinsically bounded nature. My study aimed to discover how an individual reconciled (and resisted) discourse in his/her own academic and personal contexts to articulate subject conceptions of geography and to study the relationships between these conceptions and the decisions made about performing ‘good’ teaching during Teaching Practice. Each pre-service teacher (or case) was examined in relation to his/her particular context. This context was a multi-tiered and complex one, incorporating (as discussed in Chapters Two and Three) the national education, subject, teacher education, school and personal contexts. Given the complex interactions between discourses within these different contexts and the individual’s own unique responses towards them, a case

study approach was most appropriate in helping to unpack and understand these complex interactions.

Case studies have been criticized (Yin, 1994; Tripp, 1985) for lacking reliability (the extent to which research findings could be replicated) as well as generalisability (the extent to which the results could be applied to other cases). These critiques stemmed, however, from a view that reality was single-faceted, objective and static. When one accepted that reality was complex and multi-faceted, socially constructed and changing, these conceptualisations of reliability and generalisability needed to be recast. Lincoln and Guba (1985: 288) argued that rather than expect the same result to be replicated, it would be more useful to think about the dependability or consistency of the results with the data collected. They suggested careful attention to the researcher's position within the research project, using multiple methods of data collection and analysis, and leaving an audit trail so that external judges could authenticate the findings of the study.

It would also be unfair to expect the results of case study research to be applicable to many other cases because 'a single case or small non-random sample is selected precisely because the researcher wants to understand the particular in depth, not to find out what is generally true of many' (Merriam, 1988: 208). Sayer (2000) also noted that generalisability only indicated that a relationship was common, but did not help us to understand its nature. Brooks (2007) suggested that the question therefore was how the relationship in each case could be described and understood, which then allowed for similarities or differences across different cases to be identified. I would suggest that

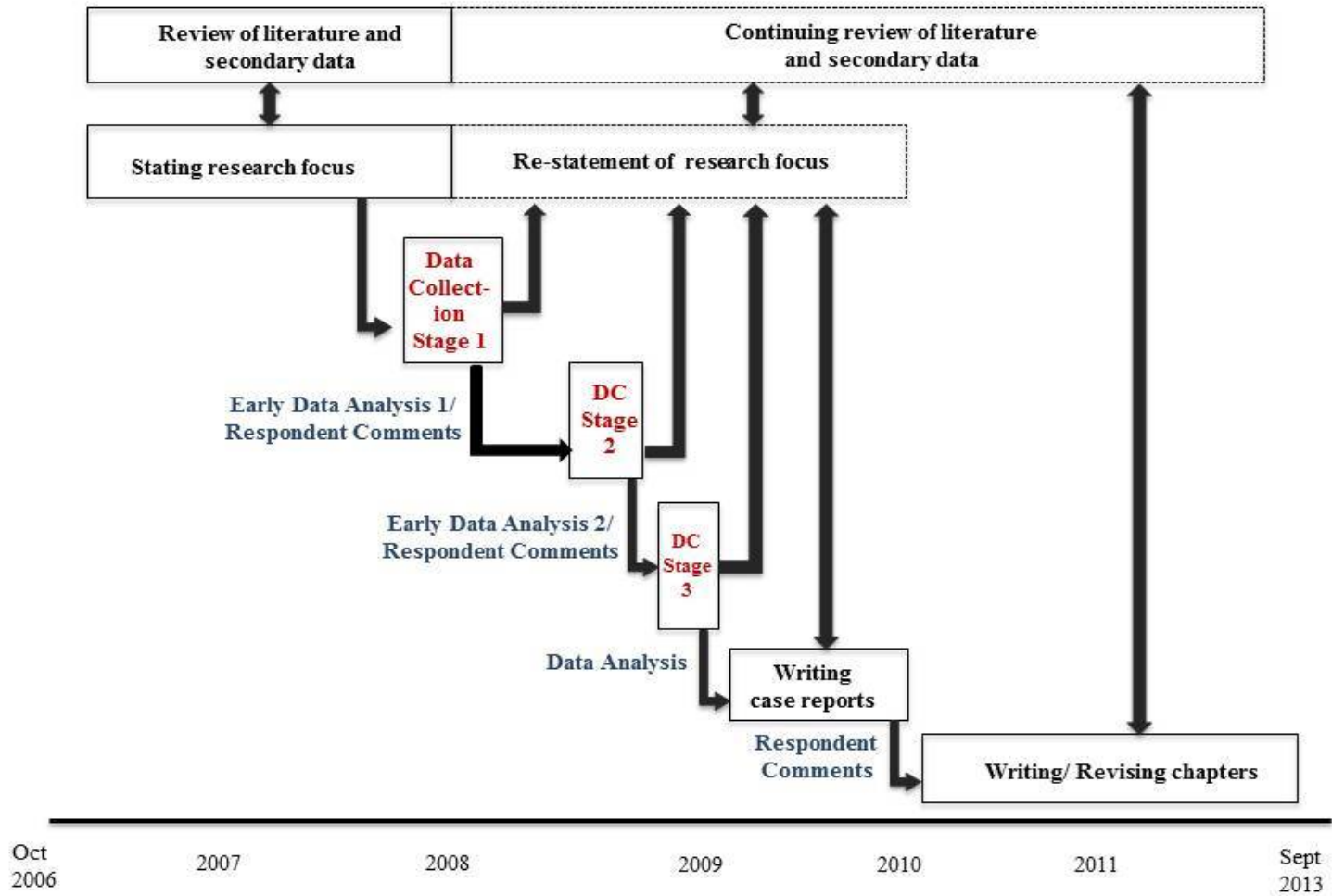


having a conceptual framework that examined the relationships within each case in a systematic way (as I have suggested in Chapter Two) goes some way in helping to make the type of meaningful cross-case analyses that Brooks (2007) alluded to.

### **4.3 Research Design**

I designed my research around a number of considerations. First, I was conscious that my interpretive approach required a design that was re-iterative in nature. Although my research focus was, from the first akin to the research questions outlined in Chapters One and Two, the exact wording and scope of the questions were subject to reconsideration and restatement throughout the research process (see Figure 4.1). This is because the data gathered suggested that certain avenues were more important to pursue than others if I wanted to understand the phenomena being studied better. For example, I initially wanted to explore how gender and race affected respondents' teaching, but found that respondents were either unwilling or unable to discuss these issues. Instead all the respondents maintained that their 'gendered' and 'raced' bodies were irrelevant to their teaching. Discussions of their bodies always led to issues related to either fieldwork or 'professionalism'. This therefore led me to re- focus my interrogations of respondents' personal contexts (and bodies) on the discourses surrounding fieldwork, 'professionalism' and what constituted 'good' teaching rather than on gender and race. Another aspect of the re-iterative principle in my research design related to the piloting and fine-tuning of my data collection methods (as reflected in Figure 4.4). Each stage and each method of data collection was piloted at least once and feedback was then collected for consideration on how to improve the data collection process.

Figure 4.1 Research Design

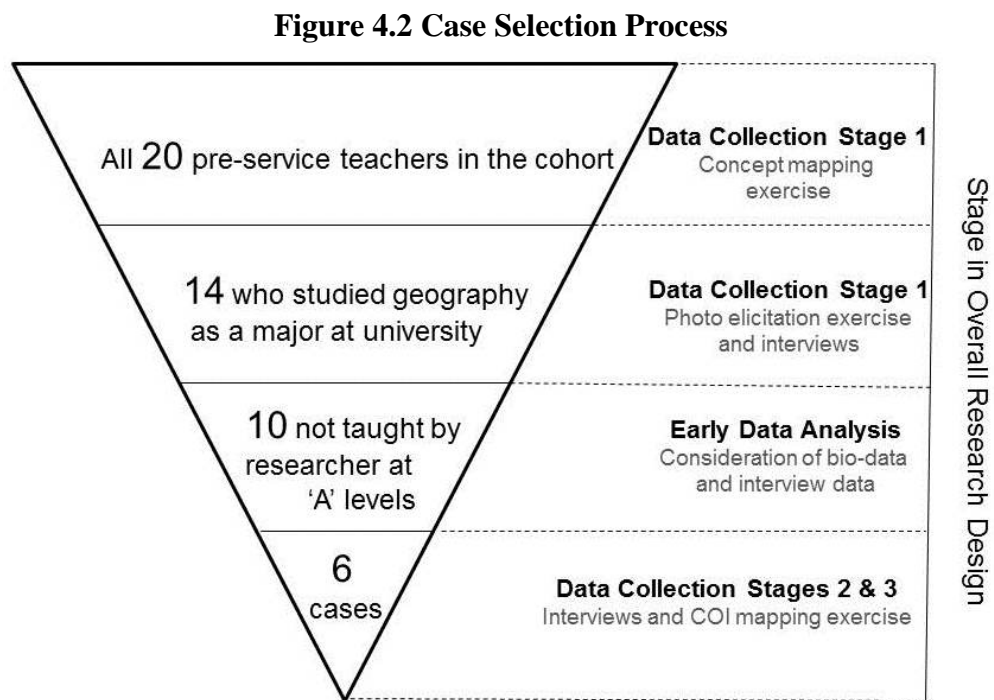


I also considered the epistemic merit of my findings in designing my research. Lincoln and Guba (1985) argued that validity in the social sciences relied on the trustworthiness of the data, which rested on the external and internal validity, and reliability, of the research project (discussed in Section 4.2). One aspect of this trustworthiness also lies in the authenticity of the data collected (Guba and Lincoln, 1989) – ensuring that the respondents themselves see the research findings as authentic and representative of their accounts. Maxwell (2002) referred to this as descriptive and interpretive validity. In my research design, I took care to share my preliminary analyses with the respondents after Stages 1 and 2 of data collection (see Figure 4.1 above) and solicited respondent comments. After I had analysed my data, I also created case reports for each respondent. I then emailed these case reports to respondents and invited them to comment on their own individual reports. This was to ensure that my descriptions and interpretations of the data accurately reflected what respondents intended during the interviews and data elicitation activities.

Asking respondents to comment on the analyses is not without controversy however. Various scholars have pointed out problems regarding who ultimately owned the responsibility of interpreting the data and drawing conclusions in the research process, and whose interpretation should ultimately prevail when there were conflicts between the researcher and the respondents (Robson, 1993; Brown and Dowling, 1998). However, as Brooks (2007) pointed out, if such validation focused on descriptive and interpretive validity and in understanding the data, then any conflicts over its interpretation should be welcomed, and should lead the researcher to evaluate his/her analyses of the data. This

evaluation and consideration would then serve to strengthen the validity of the research conclusions.

Finally, I had to make a decision about the number of cases to study. This decision had to be balanced with what would be feasible given the time and resources available for a PhD study. Figure 4.2 illustrates the case selection process.



When I first started my data collection, I had no idea of the bio-data of the pre-service teachers just starting their teacher education course. As such, I conducted the concept mapping exercise (see Section 4.3) with the entire cohort. Following that, I went on to conduct interviews and a photo elicitation exercise with only fourteen of the pre-service teachers. This initial selection was based on the fact that these fourteen had studied

geography as a major at university. The remaining six did not read geography at university. In Chapters Two and Three, I have outlined the literature on the disconnection between school and academic geography. I felt that respondents who did not have a university-level experience of geography would not be able to discuss the differences between these two variants of geography, nor the relationships these have to their subject conceptions in the same way as the other respondents.

A second round of selection was conducted during the early data analysis stage using the bio-data and interview data collected in Stage 1. At this point, I eliminated four respondents because I had taught them geography at 'A' level and the awkwardness that clearly arose during the interview process when they had to recall and discuss their experiences of geography at school made it clear that my position as their former teacher would affect the data. I was also concerned that my position as their former teacher and a Head of Department at the school they attended would affect the power relationships between us during the interviews (I discuss the issue of power relations and the researcher's positionality in Section 4.6). I then selected the final six respondents based on their subject conceptions, academic and school backgrounds, as well as their personal and work experiences. At this point, I would like to stress that I was not concerned with selecting respondents whom I felt were representative of certain 'types' as I did not wish to generalise the data I had collected to the rest of the pre-service teachers in Singapore. Instead I selected them because of the breadth of experiences that they had. Figure 4.3 below is a summary of the bio-data of the selected respondents.

**Figure 4.3 Bio-Data of Selected Respondents**

<b>Respon- dent<sup>3</sup></b>	<b>Gen- der</b>	<b>Race</b>	<b>Hon Deg</b>	<b>Work Experience</b>
Anna	F	Eura- sian	Yes	Media relations for the Singapore Armed Forces; geography textbook publisher
Baozhu	F	Chinese	No	Cabin crew with Emirates Airlines
Catrina	F	Malay	No	Nil
Daniel	M	Chinese	Yes	Trainer for education consultancy company
Eddie	M	Chinese	No	IT sales and support; Owned his own manpower recruitment agency
Frederick	M	Chinese	Yes	Nil

Due to my initial concern with their personal contexts, which included aspects like their gender, race and age, I was careful to ensure that I had equal numbers of male and female respondents. In addition, the only two non-Chinese respondents out of the ten were selected to be in the final six. All the respondents in the cohort were in their twenties and I therefore felt that age (and attendant health issues) was not a defining feature in the selection. I did not think that sexuality was something I wanted to directly ask them about as it would raise many ethical dilemmas in my research. This is especially so not only because homosexuality is illegal in Singapore, but because teachers are required to uphold certain ‘values’ related to sexuality. MOE’s statement in June 2012 that only teachers ‘whose values align with the ministry’s values’ can teach sexuality education in schools (*Today Online*, 6 June 2012) reinforced the MOE’s expectation that teachers were to conform state-defined norms of abstinence before marriage and heterosexuality.

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<sup>3</sup> The names of the candidates have been changed, but I have maintained the forms of their names in this research. For example those with Christian names have been given pseudonyms which reflect that (Anna, Daniel, Eddie, Frederick). Similarly, ‘Catrina’ was intended to reflect the Malay name of the participant while ‘Baozhu’ mirrors the Chinese name of the respondent concerned.

However, I was open to the discussion of any aspects of their personal context that *they* brought up in the interviews.

Given my interest in their academic experiences of geography, I also ensured that there were equal numbers of those with an Honours Degree in geography and those who did not. At the National University of Singapore (NUS), only the 'best' students in the graduating cohort are selected to do an additional year in their majors. Amongst the geography graduates therefore, only the Honours graduates would have done a module that focused on the philosophical traditions and paradigm shifts in the discipline that was offered in this final year. I felt that there might be a difference in the perspectives of those who had done the Honours year from those who had not. I was also interested to bring on board people with different conceptions of geography to discover how for these respondents, their various contexts came to influence their subject conceptions. As such, I also selected the respondents whom I felt brought the most varied mix of perspectives on geography to the table. After taking all these considerations into account, I realised that the above six respondents would allow me to meet all my selection objectives. There is precedent for using between four to six respondents for studies on subject conceptions. For example, Hopwood (2006) and Brooks (2007) both studied six individuals, while Martin (2005) did her study with four respondents. I believed that six respondents would be a good number to begin with in my sample in the event that anybody wanted to drop out.

#### 4.4 Data Collection Methods

In designing the data collection methods (see Figure 4.4), I was influenced by Fenstermacher (1994) who argued that research data had epistemic merit if the respondent was able to make a justified claim to know.

**Figure 4.4 Overview of the Data Collection Process**

<b>Stage/ Research questions</b>	<b>Date/</b>	<b>Methods Used</b>	<b>Participants/ Stage of NIE programme (if relevant)</b>
Pilot Stage 1(a) <i>Question 1</i>	Aug 2006	Survey Concept mapping	42 NIE pre-service teachers (Jul 2007 intake)/ Start of NIE Programme (Geog component)
	Sep 2006	Interviews	2 NIE pre-service teachers (Jul 2007 intake)/ Start of NIE Programme (Geog component)
Pilot Stage 1(b) <i>Question 1</i>	Dec 2007	Revised concept mapping Photo elicitation Geographical questions	2 personal friends in the UK + 1 PGCE student in the UK
Pilot Stage 1(c) <i>Question 1</i>	Jan 2008	Revised concept mapping Photo elicitation Interviews	2 PGCE students in the UK
<b>Stage 1 Data Collection <i>Question 1</i></b>	<b>Feb-Apr 2008</b>	<b>Revised concept mapping</b>	<b>20 NIE pre-service teachers (Jan 2008 intake)/ Start of NIE Programme (Geog component)</b>
		<b>Photo elicitation Interviews</b>	<b>14 NIE pre-service teachers (Jan 2008 intake)/ Start of NIE Programme (Geog component)</b>
Pilot Stage 2 <i>Questions 2 and 3</i>	Aug 2008	Interviews	3 teachers in Singapore
<b>Stage 2 Data Collection <i>Questions 2 and 3</i></b>	<b>Sep-Oct 2008</b>	<b>Interviews using previous concept map, materials in Practicum File</b>	<b>6 NIE pre-service teachers (Jan 2008 intake)/ After Teaching Practice</b>
Pilot Stage 3 <i>Question 2</i>	Nov 2008	Cultures of influence map	3 teachers in Singapore
<b>Stage 3 Data Collection <i>Question 2</i></b>	<b>Dec 2008</b>	<b>Cultures of influence map Interviews</b>	<b>6 NIE pre-service teachers (Jan 2008 intake)/ End of NIE programme, before being posted out to schools</b>



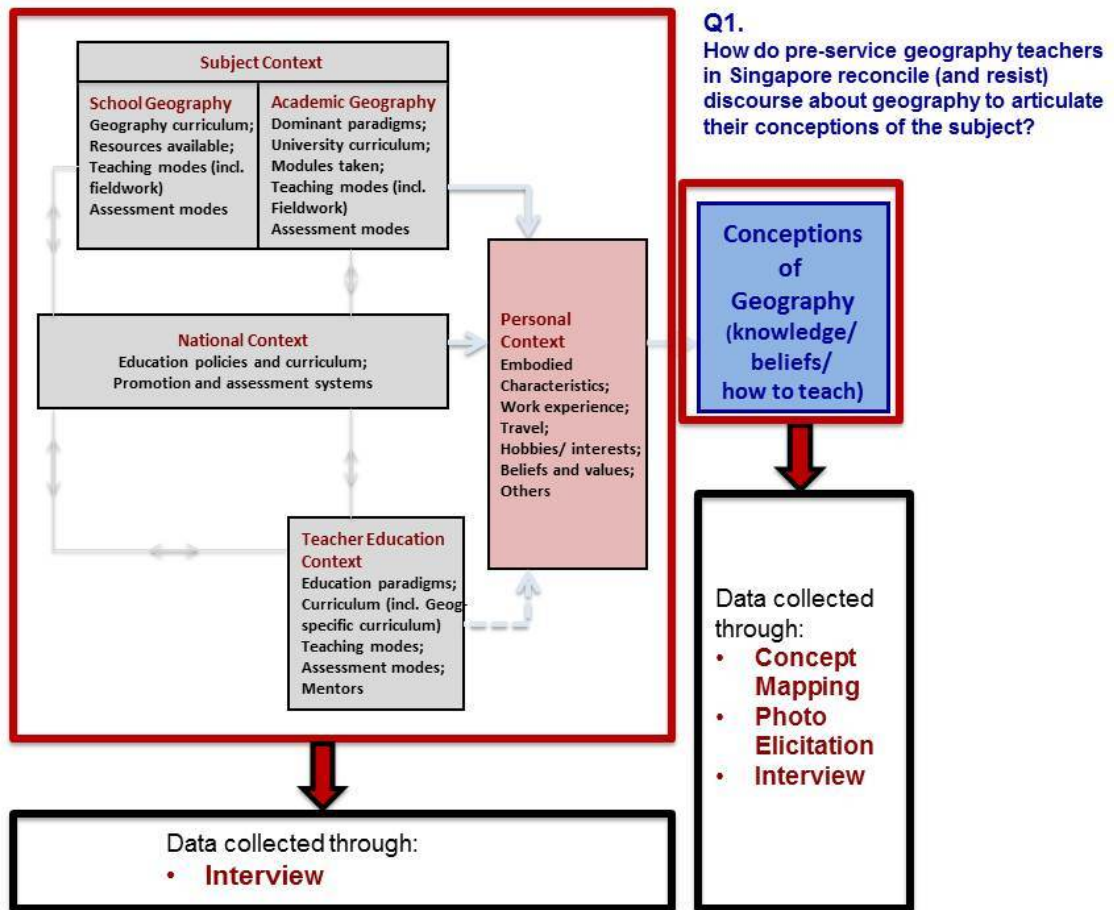
This partly required data collection methods that both surfaced respondents' tacit knowledge and facilitated the respondents' explanations of their thoughts and actions. The data was collected in three stages.

Stage 1 of the data collection process was concerned with exploring how respondents reconciled and/or resisted the discourses that affected the articulation of their geographical conceptions prior to the teacher education course (Question 1). This stage was conducted at the very start of the teacher education programme. Stage 2 focused on the relationships between these articulated subject conceptions and whether respondents drew upon their subject conceptions during Teaching Practice through an examination of respondents' decisions about performing 'good' geography teaching (Question 2). This stage also explored how and why their articulated subject conceptions might change after Teaching Practice (Question 3). Finally, Stage 3 extended the examination of how respondents reconciled or resisted discourse during Teaching Practice further, and also served the purpose of confirming and validating the data collected with the respondents as well. In the following sections, I focus on the *methods* developed/used to elicit data at each point.

#### *4.4.1 Exploring Subject Conceptions*

The figure below (Figure 4.5) illustrates the links among Stage 1 of the data collection process, the research question addressed and my conceptual framework as outlined in Chapter 2. In particular, it depicts the data collection methods used to explore Question 1.

**Figure 4.5: Links Among Stage 1 of Data Collection, Research Question and Conceptual Framework**



Investigating Subject Conceptions through Concept Maps

When deciding on the methods to investigate respondents’ subject conceptions, I was influenced to some extent by Calderhead (1996: 711) who stated that

...Observation alone is of limited value, for the cognitive acts under investigation are normally covert and beyond immediate access to the researcher.

Bearing in mind Fenstermacher's (1994) injunction that it was the researcher's responsibility to *surface* these covert cognitive acts, I decided to explore the use of concept maps since these were an established means to probe the perceptions of the structures of disciplines and the links between topics (Novak and Gowin, 1984; White and Gunstone, 1992). The meanings that were attributed to content already acquired and held by respondents could also be indicated through concept maps (Ghaye and Robinson, 1989), and Morine-Dersheimer (1993: 16) argued that concept mapping 'provided the most information in the most economical way'. This method was also used by other researchers in geography education (Martin, 2005; Hopwood, 2006) to explore their respondents' subject conceptions. I decided to pilot the technique with a cohort of 42 pre-service teachers in Singapore, who were starting their teacher education course in July 2007.

Each respondent was asked to construct a concept map to illustrate his/her conception of 'What is geography?'. As acknowledged by Martin (2005), it is difficult for some pre-service teachers to create a concept map on the spot, and hence, I used a scaffolded approach, providing the participants with a number of key geographical concepts and topics<sup>4</sup>, and then inviting them to create links between them, adding to these as they saw fit. It is also important to note that concept maps only show a person's perceptions at a given point in time, and as such, the concept map generated is actually only a partial representation of the individual's conceptions. However, I did not perceive the concept

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<sup>4</sup>These included commonly accepted geographical 'concepts' from publications like *A Different View* (2009) and *National Geography Standards* (1994), as well as 'topics' that appeared in the Singapore school and university curricula.

map in itself as the end (or the only) product that surfaced participants' subject conceptions. Instead I saw it as a tool to enable further discussion and reflection during the interviews in order to unpack how respondents reconciled and resisted discourses to articulate these conceptions. Participants were also given opportunities to update and develop their concept maps at different stages of the data collection process.

Martin (2005) devised a method of scoring the concept maps she collected based on the systems suggested by authors like Haseman and Mansfield (1995), Ghaye & Robinson (1989) and Artiles et al. (1994). For the pilot, I decided to adapt her scoring system to my purposes. This quantitative approach was used because I wanted some way to differentiate between the maps in terms of their sophistication levels or complexity, and then compare this to the respondents' school and academic backgrounds. However, there were a number of problems with this approach. Firstly, while I was able to assign a score to the maps, much of what was interesting or important could not be captured through a numerical sum. I also discovered that I could not correlate the scores to the other background data in any meaningful way, suggesting that the nature of the analysis was not suited to my research question.

I also found that the concept maps that the respondents drew during the pilot were difficult to analyse. Most of the respondents did not annotate the links between nodes, hence making it hard to understand the nature of the relationships between them. This was especially problematic since it was the links that were important to understanding the respondents' conceptions of geography. This implied that the concept mapping exercise

needed to be revised and that respondents needed even more scaffolding and clearer instructions. After reading up more on how other researchers used concept maps (Leat and Chandler, 1996; O'Brien, 2002), I decided to do a worked example with the respondents first on a completely different topic to introduce the concept mapping process in a systematic way, and to emphasise the importance of links and annotations. I tested this new way of introducing concept maps with a number of volunteers (see Figure 4.4 for details of volunteers), and found that by and large respondents were able to produce properly linked and annotated concept maps of geography with the guidance provided.

Stage 1 of the actual data collection exercise was conducted with my research respondents during their first meeting with their geography tutor at the start of the teacher education course at the National Institute of Education (NIE) in January 2008. I felt it was important to 'capture' their subject conceptions at the beginning of the programme since one of my intended aims was to explore the relationship between the teacher education course (including the Teaching Practice component) and the development of their subject conceptions later on in the project. The tutor introduced herself and gave a brief outline of the course aims, before introducing me. She then left me alone with the class for the next hour and twenty minutes as we had both agreed that her presence as the course tutor might be perceived as stressful for the respondents – if they had trouble developing a concept map, would the tutor view them as less proficient in their subject matter knowledge?

I gave a brief introduction of my research agenda and what their participation entailed, stressing that it was strictly voluntary. The respondents were then introduced to the concept mapping activity, where I first outlined the main components of a concept map, followed by a worked concept mapping exercise on an unrelated topic, carried out collectively by the whole class and facilitated by myself. Each student then individually constructed a concept map on *What is geography?*. They were also asked to fill up a reflection sheet outlining any changes they decided to make while constructing the maps, and to explain their decisions or annotations. The purpose of the sheet was to help them recall the main issues and emphases made later during the interviews. They were given about 45 minutes for this exercise, and all the respondents managed to complete it in the time given. All their 'rough work', as well as the reflection sheet and concept map, was collected.

All the materials collected from this exercise were then used in the subsequent interview segment to provide the respondents with a base from which to discuss their subject conceptions of geography, and to clarify their understanding of the links and relationships between the different components of their maps. Where respondents felt it was necessary, they were given the opportunity to revise their concept maps. The concept maps, and the interview transcripts where respondents reflected on these concept maps, were then triangulated with other data collected from a photo elicitation exercise to provide me with insight into the respondents' conceptions of geography.

### Exploring Subject Conceptions through a Photo Elicitation Exercise

Commentators on research in the social sciences and education (Guba and Lincoln, 1981, 1985; Merriam, 1998; Seidman, 2006) have pointed to the need to augment internal validity in research projects through using multiple methods of data collection, and triangulating the data before arriving at any conclusions. I therefore felt that it was important to elicit respondents' subject conceptions using other data collection tools. I piloted two other techniques to do this: a photo elicitation exercise and an exercise using geographical questions.

Drawing upon the work of Prosser and Shwartz (1996) on image-based research, and Hopwood's (2006) use of photographs to elicit pupils' conceptions of school geography, I designed an exercise that asked respondents if each photo in a series of thirteen photos was about geography. Respondents were requested to sort the photos from the *Most Geographical* to the *Least Geographical*, and then explain the rank order. For the geographical questions exercise, respondents were shown a series of thirteen questions and asked if the question was about geography (see Appendix 4.1 for the questions). The theme of these questions and the subsequent task mirrored those in the photo elicitation exercise. This technique originated with Driver et al. (1996) and was adapted for use by Hopwood (2006) in subject conceptions research in geography. Like the concept mapping exercise, I meant to use these techniques as heuristic devices to help respondents surface their conceptions of geography in the interview. The outcome of the exercises was not meant to be taken as an end in itself.

The respondents in the pilot exercise commented that the photo elicitation and geographical questions exercises were repetitive, and that the photo elicitation segment was better because it allowed them to interpret the photo freely. For example, a photo of a factory could be interpreted from conservation and sustainability, industrial location, globalization, transport or settlement viewpoints, depending on the respondent. However, a question like ‘*Where do I site a factory?*’ was likely to get the respondent to consider industrial location alone. I therefore decided to drop the geographical questions technique. The respondents also gave suggestions for changing existing photographs and adding new ones to the photo set to enhance the photo elicitation exercise. In the end, the photo set for the actual data collection came up to sixteen in total (see Figure 4.6 for thumbnails of the photos and Appendix 4.2 for larger images and their sources).

#### Exploring Individual Responses to Discourse through Interviews

In order to explore what discourses influenced the respondents’ subject conceptions, I initially conducted a questionnaire survey to get a broad sweep of the background of the participants (see Appendix 4.3 for the questionnaire survey). I had intended to run a statistical analysis (using the SPSS software) in order to correlate the respondents’ school and academic backgrounds with my quantitative scoring of their concept maps. Even though I anticipated that the most important source of data for my research would come from qualitative data collection methods, the efficacy and usefulness of quantitative methods as part of a multiple method research design had been noted in the literature (Hopwood, 2004a, 2000b; Sharp, 2005).



**Figure 4.6 Photographs Used in the Photo Elicitation Exercise**



The survey also asked questions related to respondents' work experiences, what respondents thought geography was about (after Leat, 1996), and their feelings towards teaching it. However, not only did my attempt to search for correlations through statistical analysis fail, I also found that the one-line responses often provided in the survey were not useful in helping me develop the 'thick' descriptions that I needed. I therefore abandoned the questionnaire survey, and decided to obtain information on the discursive influences as well as respondents' responses to discourse through interviews instead. Seidman (2006: 4) suggested that interviews provided access to the *context* of people's behaviour and therefore served as a way to understand the *meaning* of that

behaviour. I used interviews at every stage of the data collection process to better understand the other forms of data collected by encouraging respondents to reflect on this data where relevant, and to surface the relationships between discursive influences and their personal responses to discourse.

The first set of interviews was conducted in various tutorial rooms within the NIE, and each was recorded using a digital voice recorder. I opted to use tutorial rooms at this stage of data collection because of the privacy the rooms afforded and also because we needed table space to lay out the concept maps, photographs and other materials. These tutorial rooms were also air-conditioned (an important consideration in hot and humid Singapore), and familiar to the respondents since they were the venues for most of their lessons at the NIE. Respondents were reminded of the purpose of the research and informed that participation was completely voluntary. During these interviews, respondents were asked to discuss their concept maps and revise them if necessary, taken through the photo elicitation exercise, and then invited to discuss their school, academic and personal experiences of geography (See Appendix 4.4) for the interview themes.

#### Preliminary Analysis of Stage 1 Data

This section outlines how the data collected for the first stage of research was analysed. Miles and Huberman (1994: 50) strongly advocated early analysis as a means to help the researcher 'cycle back and forth between thinking about the existing data and generating strategies for collecting new, often better data'. This included creating contact and document summary sheets, creating codes, transcribing and coding the data collected and

creating interim case summaries (Miles and Huberman, 1994: 50-89) for each respondent. Merriam (1998) also recommended the use of such within-case analysis as the first stage of data analysis. However, not all researchers agreed that data collection and interviews should go hand in hand. Seidman (2006) advised that interviewing and analyses should be kept separate, and in-depth analysis should be avoided till all the interviews were completed. He did, however, recommend transcribing the interview texts and then crafting profiles or vignettes for each respondent.

After considering the various points of view on data analysis, I decided that it would be necessary to transcribe the interviews (see Appendix 4.5 for an example), and conduct some early data analysis on the concept maps produced as well as the discursive influences on them (see Appendix 4.6 for an example) for each respondent at this stage of the research project. This would help me to plan ahead for the next stage of data collection and provide 'a healthy corrective for built-in blind spots' (Miles and Huberman, 1994: 50), but would not lead to my 'imposing meaning from one participant's interview onto the next' (Seidman, 2006: 96). I also planned to use this analysis to elicit respondent comments and feedback in the next interview. I did not, however, assign codes or do any coding at this point. All in-depth analyses were only conducted after all the data had been collected.

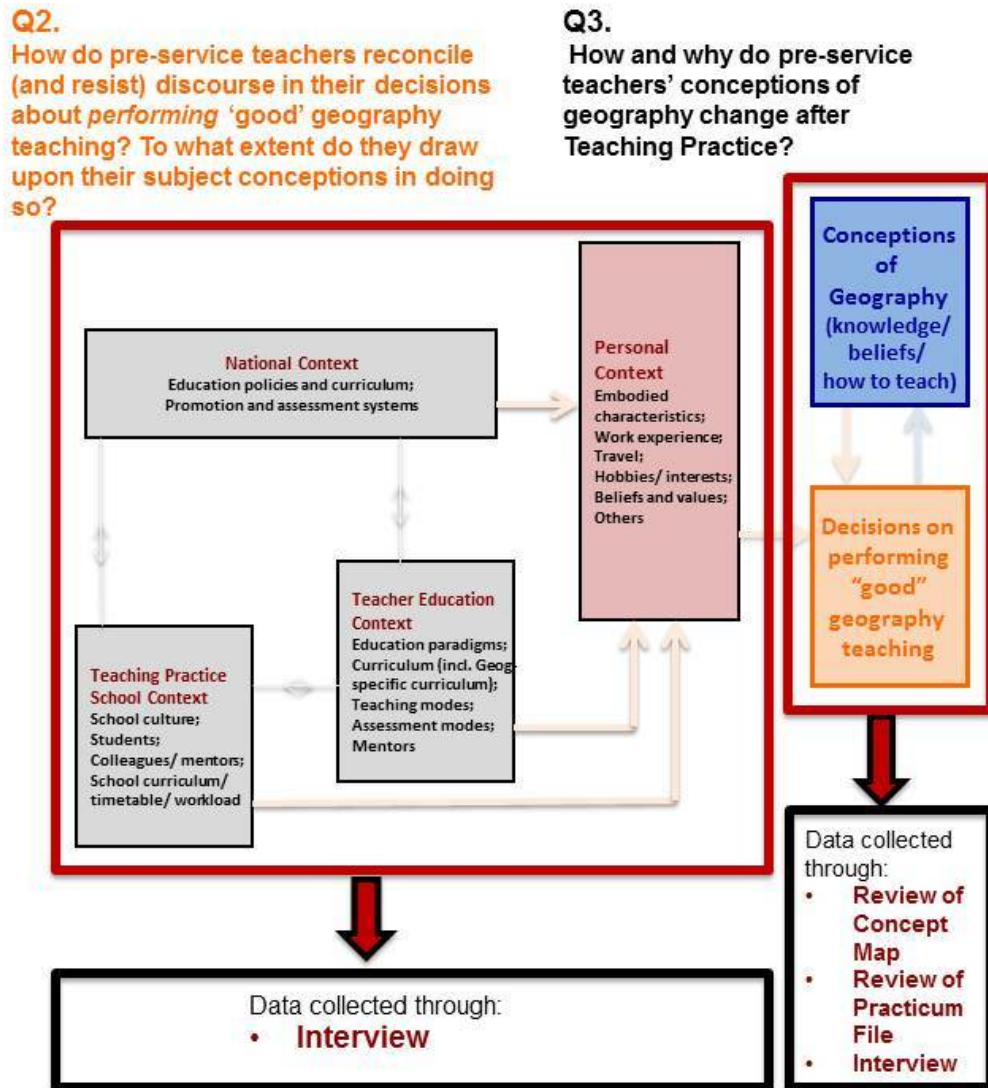
#### *4.4.2 Exploring the Relationships among Subject Conceptions and the Performance of 'Good' Teaching*

This stage of data collection focused on understanding the relationships between respondents' subject conceptions and their teaching through interrogating the ways in which they reconciled (or resisted) discourse on 'good' teaching during Teaching Practice. Figure 4.7 outlines the links among the research questions, the conceptual framework and the research methods used here. The data collection involved interviews conducted at the NIE (in various tutorial rooms that had been booked for the purpose) from September to October 2008. The respondents had just finished Teaching Practice and had returned to the NIE to continue with their coursework. I believed that that was the best time to interview them since their experiences of teaching in a secondary school would still be fresh in their minds.

The respondents had also allowed me access to their Practicum Files prior to the interview. The Practicum File is a compilation of all the documents pertaining to the Teaching Practice. Pre-service teachers were required to file the following documents: any relevant materials about the school they were posted to (rules, policies, department schemes of work, timetables), their lesson plans and relevant teaching resources, assessments and worksheets set for the students, and the forms used by their mentors to assess and provide feedback on the lessons. The file was checked by the NIE supervisor and pre-service teachers usually maintained them meticulously as a result. These files therefore provided snapshots of the school contexts and the expectations and assessments

of the mentors, as well as information on the lessons respondents conducted during Teaching Practice.

**Figure 4.7: Links Among Stage 2 of Data Collection, Research Question and Conceptual Framework**



The Practicum File documents were also used as heuristic devices to facilitate the discussion of the interview themes outlined in Appendix 4.7. For example, using particular lesson plans chosen by respondents, they were asked to discuss why they planned their lessons in these ways, if the actual lessons had turned out differently from what they planned, how successful they felt the lessons were, and how they would change their lessons if given the chance to do so. In addition, respondents were also encouraged to review their concept maps to consider the extent to which the subject conceptions they had earlier articulated affected their lesson planning. This extended to a discussion on the feedback respondents received from their mentors and their feelings about the feedback. I believed that the Practicum File documents and the interview data provided me with the means to ‘unearth and expose the politics of knowledge’ (Winter and Firth, 2007) that framed respondents’ thoughts and actions during the Teaching Practice. Understanding the discourses that undergirded respondents’ efforts to perform as ‘good’ teachers, as well as how they reconciled conflicts in discourse about ‘good’ geography teaching was important to my research.

I had considered, and then rejected, using lesson observations as a data collection method even though these had been used as a type of data in similar research (Corney, 2000; Martin, 2005; Hopwood, 2006; Brooks, 2007). This is because I felt that observations, as noted by Calderhead (1996), did not allow access to the *thoughts* of the respondents. Nor would observations enhance my understanding of the ‘politics of knowledge’ (Winter and Firth, 2007) affecting the respondent. Perhaps observations would allow me to assess whether the lesson plans for or respondents’ descriptions of one or two lessons were

accurate (depending on the number of times I observed them). However the accuracy of lesson plans and descriptions were not as important to my research as respondents' explanations of *why* they decided to perform 'good' teaching in particular ways, which the interviews and Practicum File data could already provide insights on.

I also weighed the little I could gain with observing the lessons against the potential harm this could do to my research. Winter and Firth (2007: 343) made the deliberate decision to exclude lesson observations from their research in order not to 'privilege' the observer and to focus instead on 'accessing students' voices about their knowledge, beliefs and practices in their own terms via documents and interview responses'. Other writers like Merriam (1998) and Robson (2002) noted that the presence of an observer potentially affected the phenomenon being observed. In my study, the pre-service teachers were already in a highly stressful situation where their lessons were being observed and assessed by both their school mentors and their NIE supervisor. The presence of these observers in their classroom, as well as the unequal power relationships these respondents were implicated in, would have had important effects on respondents' practice, which I was interested to investigate. I was aware that if I were to be an additional observer in this situation, it would be difficult to untangle the effects of my presence from that of these mentors. This consideration further augmented my decision to focus on interviews and the materials in the Practicum File rather than on lesson observations as a source of data.

Another methodological issue related to how to probe respondents' understandings of the ways in which the body was implicated in both their conceptions of geography and 'good' geography teaching. In devising my methodology, I was aware that Singapore was a particularly difficult context within which to conduct research on how embodiment was implicated in shaping identities. For example, Teo (2011) discussed how gendered practices and roles which shaped Singapore society were often tacit and taken for granted by her respondents. Ho (2010) suggested that Social Studies teachers in Singapore subscribed to the state's central narrative on meritocracy and either 'lacked awareness of the possibility of institutional privilege and discrimination in the Singapore context' (pg. 235,) or were unwilling to discuss race construction and race-based discrimination in order to avoid getting into trouble. This could be because the relationships among class, race and social mobility in Singapore are often swept under the carpet (Ooi & Shaw, 2004). In addition, an influential state-sponsored National Education report (2007: 16) suggested that educators 'had concerns about how open and candid they could be in discussions and how they could manage debates on areas of controversy, without... clear out of bounds markers [issued by the state] to guide them'. These underscore a climate of self-censorship by teachers, which also applies to their discussions of potentially complex and controversial issues related to geography, to teaching geography, and to the bodies that teach geography.

The fact that my respondents might be unwilling or unable to discuss embodiment to the extent that I would have liked placed me in a methodological and ethical quandary. I considered elicitation methods like using controversial quotes about different aspects of



embodiment in Singapore, and getting them to rank photos of a diverse group of teachers (in terms of gender, race, age, sexual attractiveness etc.) in different classroom-based and field-based contexts. However, I also balanced these means of getting direct data on embodiment from respondents against the consideration that my respondents' identities were known to their tutor and classmates who were aware they were participating in my research. I did not want to force them to talk about issues they were uncomfortable with, and which might potentially compromise them later in their careers. I felt it was important to give them a chance to bring up these issues themselves during the interviews when we discussed their experiences of geography and teaching and learning geography.

#### Exploring the Links Between (Changing) Subject Conceptions and Practice

The interviews also focused on the issue of respondents' subject conceptions and whether these conceptions affected the ways in which they planned their lessons. In addition, respondents were asked to review and modify their concept maps, where relevant, in order to glean information on how the Teaching Practice had affected their subject conceptions.

#### Preliminary Analysis of Stage 2 Data

Due to the constraint that the respondents were due to be posted out to schools in January 2009, I needed to conduct the final interviews in December 2008. This short period between the second and third interviews (refer to Figure 4.1) meant that I did not have much time to conduct a preliminary analysis of the data collected. The only analysis at this stage was to prepare a summary of the types of lessons the respondent conducted

while in school and the influences on these by going through all the materials in the Practicum File and listening to the interview recordings again (See Appendix 4.8 for an example). This was important because I wanted the respondents to validate my impressions of their responses to discourse during the next interview (as discussed in Section 4.2).

#### *4.4.3 Exploring Subject Conceptions and Performing 'Good' Teaching*

##### Cultures of Influence Maps

The main aim of the final stage of data collection was to further investigate and confirm the *relative* influence of respondents' subject conceptions vis-à-vis the other types of discourses during Teaching Practice. This was to triangulate the impressions I had already formed in Stage 2 of the data collection. Figure 4.8 illustrates the links among Stage 3 of data collection, my research question and conceptual framework.

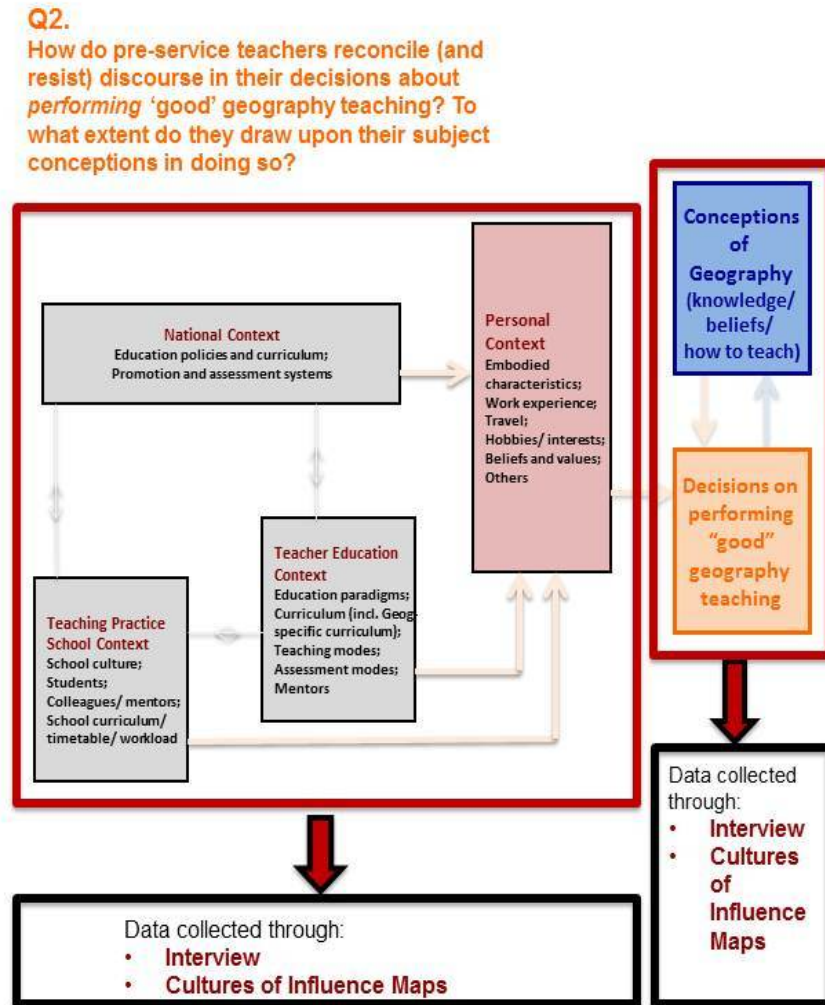
I adapted the Cultures of Influence mapping technique from Brooks (2007). The extent of the influence of each factor was shown in terms of the size of the rectangle used to represent it, while the significance of each factor was illustrated through its situation within the diagram. The representation of size and location on these diagrams allowed them to be seen as 'maps'. These maps therefore provided a diagrammatic means through which to represent ways in which respondents reconciled their subject conceptions vis-à-vis other types of discourses when they made decisions about performing 'good' teaching. Brooks (2007) defined the cultures of influence as personal culture, school culture, educational culture, geography culture and geography education culture, but did

her research on 'expert' geography teachers. These cultures of influence were relevant to her particular group of respondents within the UK context.

My own research was on pre-service teachers in Singapore. Based on the earlier interview, as well as my understanding and analysis of the Singapore context in Chapter Three, it was obvious to me that the discursive contexts that influenced Brooks' respondents would differ from those that affected mine. For example, 'expert' teachers would not be influenced by the curriculum and assessment procedures of the teacher education course unlike pre-service teachers. The national education and school policies that affected 'expert' teachers would also be felt differently by them than would be the case with pre-service teachers. As such it was clear to me that a wholesale adaptation of Brooks' (2007) categories was not appropriate. Instead I referred back to my own conceptual framework (Figure 2.1) and developed my own conceptual categories. These included the subject conceptions of respondents vis-à-vis the national education context, the teacher education context, the school context and the personal contexts.

I piloted the technique in November 2008 with three teacher volunteers in Singapore. The first respondent found difficulty understanding the exercise and my instructions on how to construct the cultures of influence map. She suggested that I do a worked example for her first. I was reluctant to present any example that would influence respondents' own construction of their maps, so I drew upon one of the examples from Brooks' (2007) study.

**Figure 4.8: Links among Stage 3 of Data Collection, Research Question and Conceptual Framework**



I felt that using the UK context and 'expert' teachers (with their different categories of influence) would affect the mapping exercise less than if I used an example based on the local context. My respondents might then emulate the worked example or be influenced by my explanation of the map when constructing their own. The next two respondents constructed their maps with little difficulty. None of the three respondents suggested any changes to the categories themselves.

I carried out the final round of interviews in various cafes across Singapore. This contrasted with the previous interviews that were conducted in the privacy of the tutorial rooms at the NIE. Although I would have preferred to conduct the interviews on campus itself, this would be at odds with my aim to minimise inequalities in power relations with the pre-service teachers. It was convenient to conduct the interviews in Stages 1 and 2 in the tutorial rooms at the NIE as it was expedient for the respondents, given that they were on campus for classes anyway. However, Stage 3 of data collection occurred while the respondents were on term holiday and I did not want to impose on them by making them travel to the NIE, which involved a long journey to a relatively inaccessible campus, for the sake of my interview. Instead I travelled to wherever was convenient for them and carried out the interview at a venue they suggested, which all turned out to be coffee shops. This was because I wanted them to feel comfortable in a venue of their choosing, and I believed that a neutral place like a cafe would not interfere with my data collection.

The cultures of influence mapping exercises were conducted before respondents were invited to validate my analysis of their lesson planning (see Appendix 4.9 for the interview themes for Stage 3). Respondents were asked to describe and explain the maps they had drawn, in order to get them to reflect on why they drew or did not draw upon their subject conceptions. Where necessary, respondents also changed aspects of their maps to more accurately reflect their intended meaning during the discussion.

## 4.5 Analysis of Data

Miles and Huberman (1994) outlined the main stages of qualitative data analysis. This process often incorporated:

- annotating and coding data according to research questions initially and then letting the coding scheme and research questions evolve with the data
- building up within-case displays from which to draw both descriptive and explanatory conclusions, verifying these conclusions and writing up within-case reports
- repeating the cycle across cases to draw cross-case conclusions

They authors also stressed that the researcher must expect iteration in the process as research questions, conceptual frameworks, analytical frameworks and research methods evolved at each stage of the research. I was mindful of these stages in my research design, incorporating each of these aspects in my data analysis – from building up a coding system with the data, developing matrices to present my data for each respondent, writing individual case reports and getting my respondents to validate these reports. Figure 4.8 provides an overview of the data analysis process in my research. Once all the interviews had been conducted and all the data was in-hand, I coded the data based on categories derived from my research questions and conceptual frameworks. As Merriam (1998: 183) suggested, ‘categories should reflect the purpose of the research’ and are in essence ‘the answers’ to my research questions.

Dey (1993) and Merriam (1998) also pointed out that there were different levels of analyses, ranging from straightforward descriptions and narratives, to a more abstract level that involved using concepts to describe phenomena, to theory generation. In my

research, the descriptive analysis of concept maps and practicum file documents, as well as the individual case reports were examples of the first type of analysis. The coding of the data was an example of the second type of analysis, as I made a concerted attempt to systematically classify data into a 'schema consisting of categories, themes or types' (Merriam, 1998: 187).

The final type of analysis involved the process of moving up 'from the empirical trenches to a more conceptual view of the landscape. We are no longer dealing just with observables, but also with unobservables, and are connecting the two with successive layers of inferential glue' (Miles and Huberman, 1994: 261). In my research, this involved a 'cognitive process of discovering or manipulating abstract categories, and the relationship among those categories' (LeCompte et. al., 1993: 239) both within and across my cases. The final stage in my data analysis concerned cross-case analyses, where I sought to build generalities that could fit across all cases within the study, even though the cases varied in their detail (Yin, 1994: 112). Miles and Huberman (1994: 205-206) explained that this was a process of theory-building, whereby the researcher attempted to understand the processes and outcomes across cases in order to understand how they were 'qualified by local conditions' and to develop 'more powerful explanations'. These processes and outcomes are explored more fully in the following chapters.

**Figure 4.9 Overview of Data Analysis Process**

<b>Action</b>	<b>Preliminary Analysis Stage 1</b>	<b>Preliminary Analysis Stage 2</b>	<b>Within-case Analysis</b>	<b>Cross-Case Analysis</b>
Data Used	Concept mapping documents; Interview 1 transcripts	Interview 2 transcripts; Practicum File Documents; Revised concept maps (where relevant)	Concept maps and revisions (where relevant); Analysis of concept maps; Transcripts of Stages 1-3 interviews; Practicum File Documents; Analysis from Stage 2; Cultures of Influence Maps	Individual case reports
Analysis	Qualitative Analysis of Concept Map	Identification of subject conceptions and changes to subject conceptions, curricular and pedagogical decisions and influences on these decisions	Coding of data against research questions and conceptual framework categories, revisions to the coding structure where necessary.	Identify codes that apply to all cases; Identify relationships between codes that apply to all cases
Summary Type	See Appendix 4.6 for an example	See Appendix 4.8 for an example	See Appendix 4.10 for an example of individual case coding; See Appendix 4.11 for an example of an individual case report	Thematic Matrix (See Appendix 4.12 for an excerpt)
Purpose	To plan for Stage 2 interviews; To clarify what was discussed and to probe more deeply into explanations where necessary in the next interview; To revise research questions/ conceptual framework where necessary	To plan for Stage 3 interviews; To clarify and probe more deeply into explanations where necessary in the next interview; To revise research questions/ conceptual framework where necessary	To identify the main categories that emerge in relation to the research questions and conceptual framework; To revise research questions/ conceptual framework where necessary; To develop or generate theory	To understand the main themes that are relevant to all cases; To develop or generate theory
Verification	Respondents were asked to comment on the analyses during the Stage 2 interviews	Respondents were asked to comment on the analyses during the Stage 3 interviews	Respondents were asked to comment on Case Reports	Checking conclusions against data



#### **4.6 Ethical Considerations**

My research was informed by the British Educational Research Association (BERA, 2004) guidelines, which outlined the duties and responsibilities of the researcher. In summary these included ensuring: informed consent, honesty regarding the purpose of the research and how the information collected would be used, the privacy and confidentiality of the respondents and data collected, and the accuracy of the data reported. My own research approach also had to involve a consideration of ‘the relationships among the people in the research process, the actual conduct of the research and process through which the research comes to be undertaken and completed’ (Moss, 2002: 12). Due to its theoretical orientation, I felt that that my study needed to be mindful not just of the rights of my participants and my duties towards them, but also to explicitly recognise that knowledge was situated and that there were competing social constructions that testified to power relations and which allowed particular versions of knowledge to be realised in particular places and times (Haraway, 1991; Harding, 1991). As a result it was necessary to recognise the specificities of the Singapore education system and to acknowledge that the data collected and analysed in this case was particular to this group of respondents, at the point in time in which the data was collected, within the socio-spatial context discussed in Chapter Three.

Moreover, it was also imperative to highlight issues of power and control in the researcher-participant relationship, and to acknowledge the subjectivity and complexity inherent in qualitative research methods, and more specifically in this case, interview methods. Feminist methodologies were influential in my research as they advocated

reflexivity in the research process, defined as a 'self-critical sympathetic introspection and the self-conscious analytical scrutiny of the self as a researcher' (England, 1994: 82). Feminists have argued that researchers were instruments in the research, and that each was a differently positioned subject with a different biography that influenced research. Tied up with reflexivity was the issue, therefore, of the researcher's positionality vis-à-vis the respondents' within the research context.

Although I was a student researcher and was approaching the respondents as a supplicant, and this was reflected in my conscious decisions to minimise inequalities between myself and the respondents in the data collection process, I was at the same time someone with substantially more years of experience within the Singapore education profession. As a former geography subject teacher, Head of Department in a Junior College, and a part-time teacher educator within the NIE, I was aware that I would be perceived as more experienced and better connected to those with influence than my respondents were. Moreover, a number of their course mates had been my students while at Junior College. Added to this was the fact that my research had been introduced to them during their first session with their geography course tutor. I was aware that I would not be perceived as a student researcher per se, but also as someone with more clout within the profession than they had. Seidman (2006: 93-94) suggested that researchers cannot be expected 'to resolve all the inequalities in society reproduced in their interviewing relationships, but they do have the responsibility to be conscious of them', and to 'devise methods that attempt to subvert those social constraints'.

This consciousness of power inequalities in the research process contributed to a number of my methodological decisions. For instance, I chose not to observe any lessons directly. While other researchers who studied subject conceptions in geography (Martin, 2005; Hopwood, 2006; Brooks, 2007) used lesson observations as a source of data, I was concerned not to add to the complexity of the analyses by considering how my presence in the classroom would affect the respondents at a point where most of their lessons were already being observed and assessed by the school mentors and NIE supervisor. The situation was hence different, for example, from Hopwood (2006) who was observing students in the classroom or from Brooks (2007) who was studying expert teachers. Neither of this group of respondents was in a situation where they were being assessed and graded for what they did in the classroom. Instead I relied on primary data gleaned from the interviews and also used the materials in their practicum file as discussed above. Similarly, I also took the decision to rely only on the interviews for data on embodiment and its influence on respondents' conceptions and practice, even though it would not lead to as much direct data compared with the use of elicitation techniques. This was because I did not want to force respondents into making potentially controversial statements about their own or other teachers' bodies and identities, and which might have consequences for them later on in their careers.

It was also important to stress to respondents that their recruitment was completely voluntary and that I was in no way connected to the teacher education programme they were enrolled in. I was careful not to take on any teaching or supervisory positions with the NIE that would lead me to assume any official position of power over them during

this period. I also ensured that I had received their written informed consent by discussing with them and getting them to sign a document (Appendix 4.13) that spelt out the research aims and methods, as well as the purposes to which the data collected would be used.

Another issue related to the privacy of the respondents and the confidentiality of the data collected. The respondents were aware that while I would use pseudonyms and not name any of the schools they were posted to, their anonymity could not be completely guaranteed. This was because their course tutor and course mates were aware of their participation in my research project and would be able to discern who had made any particular statements I reported from the biographical data given alone. However, they still agreed to take part because they felt that my research theme and focus interested them, and that talking about their subject conceptions and teaching decisions made them more aware of their own thinking about geography and how to teach it. One concern I had was that my respondents inevitably discussed people who had influenced them in the past and during the teacher education course. Where these people were not public figures who had published their work and were being quoted about their public statements, but were colleagues, family members, friends or mentors, I felt it necessary to change their names and to omit giving biographical data that might make it easy to identify them and the respondents who had named them.

The issue of accuracy of reporting was also imbued with power relations as I still had the power, as noted by feminist researchers (McDowell, 1992; Butler, 2001), to represent my

respondents in particular ways, based on my own subjective responses to them once the interviews were over. In order to avoid this, I had to be very careful in my analysis and reporting of data not to leave out data that contradicted my own views or to give undue attention to comments that may have fit into my overall thesis neatly, but did not as a whole, represent the respondent's views. In order to try to minimise the risk of misrepresenting the respondents, I was mindful to triangulate the data collected (Denzin, 1970; Denzin and Lincoln, 1994), and to prepare preliminary analyses and vignettes on data previously collected (Miles and Huberman, 1994; Merriam, 1998), which I shared with the respondents to get their feedback and clarification on.

In the next two chapters, I present and analyse the data I collected using the methods described in this chapter. Chapter Five focuses on Research Question 1 – how respondents reconcile (and resist) discourse in order to articulate their conceptions of geography. Part of the discussion also focuses on the issue of what *doing* geography entails and what types of bodies *do* geography. In Chapter Six I then explore Research Questions 2 and 3, focusing on how power affects the relationships between respondents' subject conceptions and their performances of 'good' teaching. More specifically, I examine the extent to which these pre-service teachers draw upon their subject conceptions and how discursive power affects this relationship. The ways in which each individual responds to discursive power in their performance of 'good' teaching is also interrogated, the analysis of which includes how the body is also implicated in such performances.

## Chapter Five: Conceptions of Geography

### 5.1. Introduction

In this chapter, I use the lens of discursive power (as outlined in Figure 2.1) to analyse and present my participants' understandings of geography. Through this frame, I not only describe the subject conceptions articulated by my respondents, but more importantly, I also explore *why* they articulated one version of geography within the Singapore teacher education context (and not another). Central to this investigation is the examination of the relative influences of different types of discursive power operating within and across the national education, subject, teacher education and school contexts – and the ways in which each individual reconciles and even resists power through his/her personal context (see discussion in Sections 2.3 and Section 2.5). This process is captured in my first research question:

**1. How do pre-service geography teachers in Singapore reconcile (and resist) discourse about geography to articulate their conceptions of the subject?**

These geographical conceptions were analysed, where applicable, mainly in terms of Grossman et al.'s (1989) conceptualisation of the four dimensions of subject matter knowledge (See Section 2.2): Content Knowledge for Teaching, Substantive Structures, Syntactic Structures and Beliefs. As noted by Grossman et al. (1989) and Calderhead (1996), however, it is not always possible to discuss all of these dimensions separately in accounts of teacher knowledge (see discussion in Section 2.1). I therefore discuss the accounts under the umbrella term 'subject conceptions', rather than artificially split them. With reference to Figure 2.1, I also examine how respondents think that geography

should be taught as part of their larger subject conceptions. A final thread in this chapter pertains to an analysis of the role of the body within pre-service teachers' subject conceptions, particularly with regard to what types of bodies they imagine *do* geography, and what *doing geography* means to these participants. This addresses a gap in the literature on subject conceptions which discusses teachers' subject conceptions from a purely cognitive point of view.

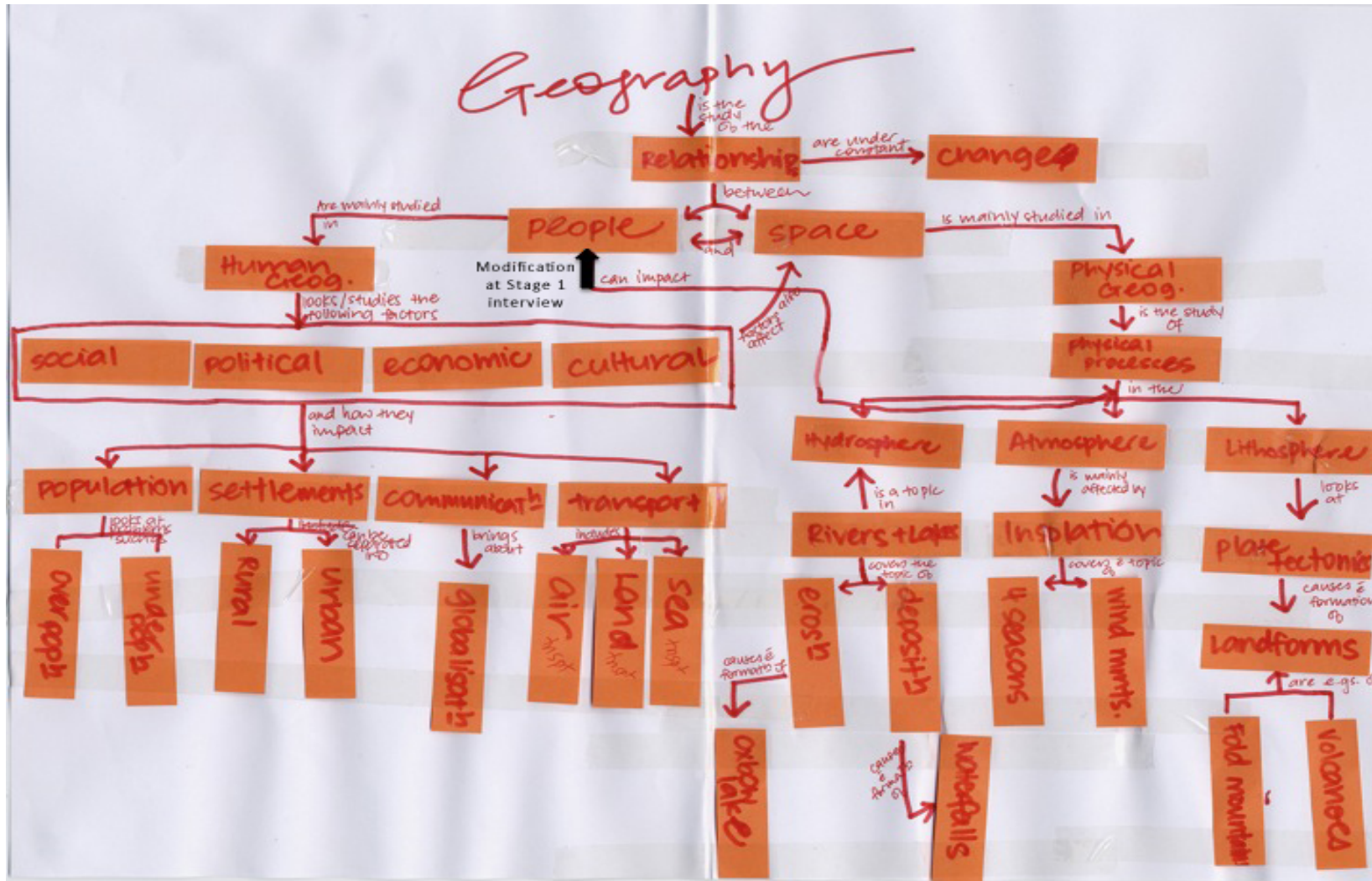
## **5.2 Subject Conceptions and Individual Responses to Discourse**

### *5.2.1 Anna*

#### Conceptions of Geography: Articulating 'What'

Anna's concept map was an organised description of the content knowledge of geography for teaching (Figure 5.1). The organising principle (substantive structure) in the concept map was the study of the 'relationships between people and space', which was conceived as a dynamic one that constantly changed. From the first interview, it was clear that for Anna, relationships between people and space were the most important conceptual category in geography. Initially Anna focused only on how people affected space and physical processes. During the first interview, however, she clarified that physical processes also affected people and modified her concept map accordingly (reflected in Figure 5.1).

Figure 5.1 Anna's Concept Map





For example she stated that,

Geography, to me, is about, I suppose the relationship about people and... and space, you know, a man's environment or something like that? Erm, and I think it has to be a two-way thing... How the environment affects man, and how man has the ability to change or affect the environment.

In articulating this point of view, Anna drew directly on the national curriculum for schools, which explicitly framed the study of geography around physical-human relationships. In addition, it was clear in the interview that Anna's focus in geography centred primarily on people. For example, in the photo elicitation exercise (see Section 4.4.1 for details) she ranked the photos with people in them as 'more geographical' than those without because those were the ones where 'you can see the Physical Human interacting'. Anna believed that geography 'had to do with people' whereas just physical landforms and processes had more 'to do with Science'. Again, she attributed this specifically to the national education context because the subject syllabi for geography stressed the interaction between people and the environment as the main focus of geography.

This conception of geography was also augmented by Anna's work experience. After graduating from university (where she majored in geography and sat an extra year for her Honours degree in geography), Anna edited school geography textbooks for a publisher in Singapore for a year and a half. Anna referred to this personal work experience with the textbook publisher as central to helping her draw her concept map. She explained that her job scope

... concentrated mostly on the geography textbook - Earth Our Home (lower sec) and Geog Elective (upper sec) - I think I am a little bit more confident... simply because I did the textbook before, I kind of know the syllabus and the content.

In addition, Anna had experience teaching geography in both secondary school and at Junior College (JC). She had worked at various secondary schools for between three to six months as a geography relief (substitute) teacher, as well as having done Contract Teaching for a few months at an A-level institution, prior to her enrolment at the NIE (see Section 3.4), which made her knowledgeable about the relevant school geography syllabi. These past experiences therefore reinforced her conception of geography, which was dominated by the national curriculum documents and textbooks.

However, Anna also organised her map using categories that were commonly accepted *academic sub-divisions* in the discipline (Social, Political, Economic and Cultural for Human geography, and Hydrosphere, Atmosphere and Lithosphere for Physical geography), under which she listed examples of the *school content* of geography (Population, Settlements, Transport and Communication, Plate Tectonics etc.). In doing so, Anna appeared to have synthesised both academic and school geography at a structural (or substantive) level. Among the respondents, Anna had the most experience of geography. She had studied it throughout her secondary and JC education, majored in geography at university, and even had an Honours Degree in geography from the National University of Singapore (NUS). Anna therefore appeared to have reconciled both these variants of geography in her concept map.

At the same time, Anna made a clear distinction between these different variants of geography in her interviews. This was because she felt that many aspects of geography were not relevant to school geography, and as such ‘what I have been trained in and the kind of geography that I learned in uni and all, really does not get incorporated’. This included disciplinary sub-divisions like ‘Gender - I did all the cultural geography modules, then I also really liked Economic and Political geography’. Anna pointed out that

...ultimately, as much as I like this *other type of geography*, we’re preparing them [the students] for the exams... *And this is what is needed* [italics my own].

The quote above illustrates the distinction Anna made between school and academic geography and the *deliberate decisions* she took about what to include in her concept map. At the same it also belied the tension between the type of academic geography that Anna preferred and the examinable content of school geography which she felt obligated to record on paper. In the end, the discursive power of the centrally mandated curriculum was deemed more important. Anna explained that the

...reason why I drew this [concept map] was because I thought going into school, this is the kind of geography *that is expected of us* [italics my own], to be taught to the students.

What struck me in analysing the data was that Anna seemed to have positioned herself at this stage of the data collection process as a *geography teacher*. As such, she had already made decisions about what type of geography was more important in the pre-service

teacher education context. She even aligned herself ideologically with the MOE and its curriculum when she commented that

...what *we* ingrain in people is that the important part is not so much how the processes take place, but how it affects humans. So that's why that's always something I have kept in my mind [*italics my own*].

Barratt-Hacking (1996) suggested that teachers coped with the split between school and academic variants of geography by putting academic geography aside and focusing only on school geography to cope with the demands of school. In a sense, we could argue that this was also the case with Anna. However, it was not the pressures of the school context that led her to privilege school geography before she had even gone for Teaching Practice. Instead it was discourses operating within the Singapore national education context, filtered through Anna's assumed professional identity as a *geography teacher* that shaped how Anna *chose* to articulate the subject. This deliberate inclusion of only aspects of geography which were relevant to the national curriculum was also seen when Anna expressed a marked preference for Human geography at university, but tried to produce a concept map which she felt was more 'balanced' and in line with the national curriculum. She also observed that as a geography teacher, she had certain responsibilities to her students to teach the national curriculum first.

I think that after doing this exercise right, my conception of what geography is, I find it very skewed. And to go into a class and impart that onto the students would be unfair... a good geography teacher would actually give equal weightage to whatever topic that he is teaching... *because that's what a teacher's supposed to do* [*italics my own*].

### Conceptions of Geography: Articulating 'How'

When discussing how she believed the content of geography should be taught, Anna made reference to her own experience as a student where school geography was all about drilling for examinations.

And at that time, what we did to try to do well at geography was to make our own notes, and then we would like draw all the diagrams and label them and practise drawing them, and memorise the notes from A to Z.

She recalled not enjoying geography then and vowed 'if I ever become a teacher, I'll become a geography teacher, just so I can teach geography the *right way*' [italics my own]. This recalls Brown et al.'s (1999) finding where pre-service teachers often cited negative examples of classroom teaching from their experiences as students, and how they would avoid teaching in those same ways. Anna therefore drew upon her own personal experiences in articulating how geography should be taught and did not refer to other types of discourses in doing so. This was also seen when she expressed the view that teaching for understanding was key and that teaching would be most effective if students 'could understand the concept, because that's what it's about to me, you know'. She also stressed the importance of understanding links between concepts. She felt that teaching to the test and rote-learning worked only in the short run,

...but you forget everything. If you ask me things that I studied in secondary school the initial part, that's how I used to learn what, just memorise everything, I cannot remember anything. But for my O levels, I can still remember certain things because I was explaining it in stages to myself'.

### Conceptions of Geography: Discourse and the Body

Another aspect of my discussions with Anna related to the body in geographical conceptions. During the interviews, Anna made enthusiastic reference to doing fieldwork as a student. She recalled that while at JC, she had a teacher who really inspired her and

... it'd be like it's raining, let's all go stand under this hut and watch saturation overland flow. And because [name of JC] is on a hill, we would do slope studies and have lessons on the hill and learn about the sheer impact and stress and all that kind of stuff.

She stressed the importance of these experiential lessons and observed that 'those are the lessons that I remember and made an impact'. In the interview, Anna made specific reference not only to geography as a subject that involved physical activity, but also to geography teachers as fit and active individuals who were positively-inclined towards such physical activities. For example, she stated that 'for a geography teacher right, they have to be very gung-ho, let's go trekking up Bukit Timah [hill] today' and 'not be afraid to go and rough it out in the mud'. Anna also referred to a 'Crocodile Dundee' style of dressing for her previous geography university professors and endorsed a style of dressing for herself as a teacher that was more 'casual' and 'comfortable', eschewing what she termed the 'corporate look'. Therefore, in articulating her conceptions of geography, Anna also drew upon discourses within the subject context that related geography to the 'masculinist traditions' discussed in Section 2.3. In addition, for Anna geography teachers had a particular inclination for the outdoors which could also be seen from their physical appearance.

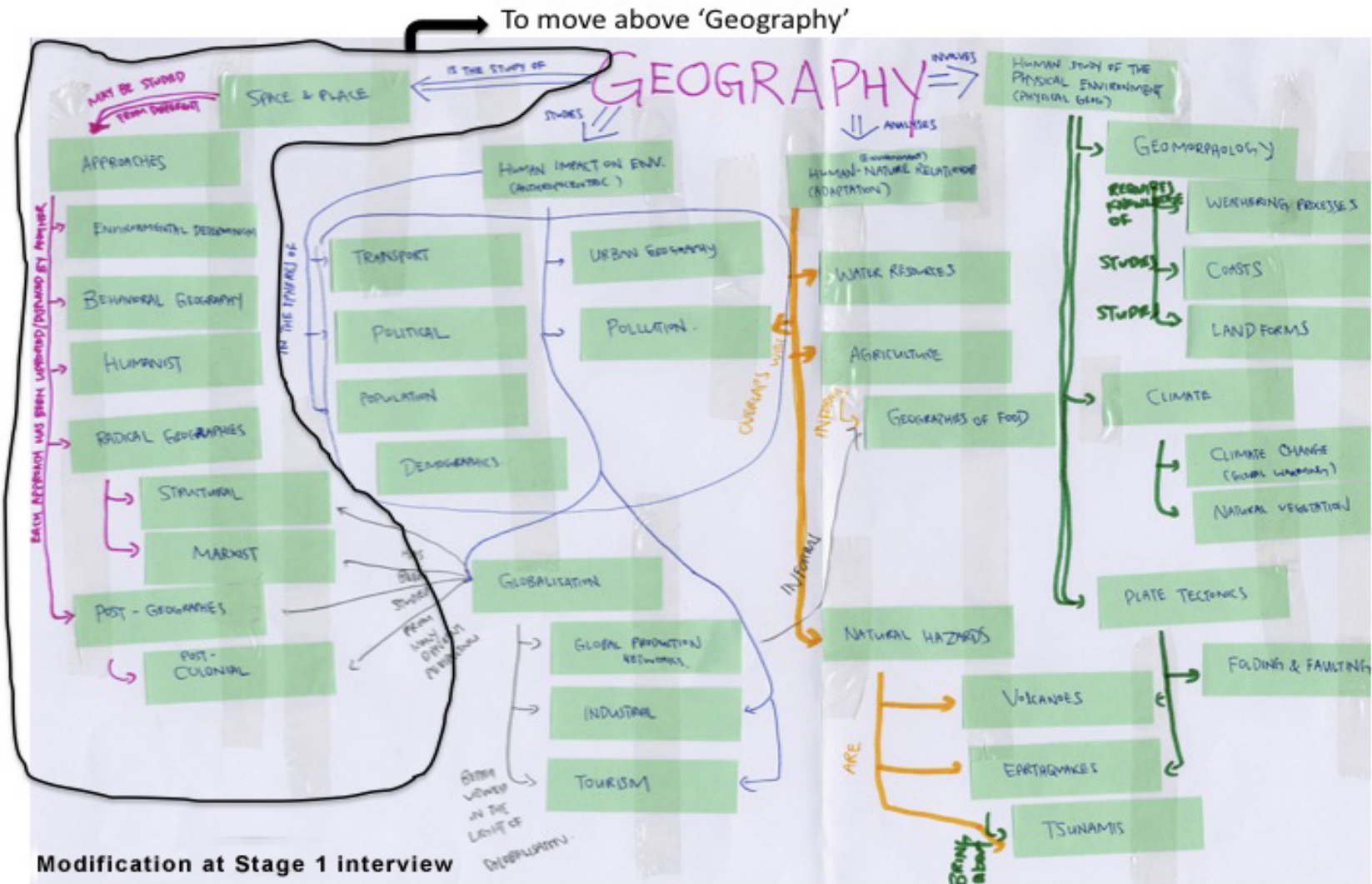
However, despite Anna's clear association of geography to fieldwork and active bodies, she did not include these aspects in her concept map. Instead the concept map focused mainly on school and academic content. A clue to why this was so came from Anna's frequent references above to 'what was needed' and 'what needed to come out' from her teaching. Anna pragmatically made reference to how 'the exams are what counts', and that 'having done my textbook planning and working with curriculum development people in MOE... I knew why they wanted them [teachers] to cover things'. The national curriculum made reference to fieldwork skills but these were not tested in the examinations. As such, in reconciling these different discourses as a pre-service teacher, Anna once again prioritised the national curriculum and what was emphasised in school geography instead.

### *5.2.2 Daniel*

#### Conceptions of Geography: Articulating 'What'

Daniel took a completely opposite approach from Anna in drawing his concept map, organising it less as a school subject, and more around an analysis of the main intellectual undertakings within geographical study (see Figure 5.2).

Figure 5.2 Daniel's Concept Map





In describing geography from his concept map, Daniel suggested that there were three main components to geography.

Geography is first the environment in the sense that the physical processes, the natural phenomenon that people study, so that on one hand like Earth Science. That is one aspect of geography. The other aspect of geography is human-centred or anthropocentric is what I use. And what it is, is then the role of the human in adapting, in moving around this environment, what do they do, how do they deal with limitations, how do they deal with... how they live their lives within any particular environment. So I put these two together in a third category, and that one was *human interaction with the natural environment*. Human adaptation... *I think this is the part that is in the syllabus* [italics my own].

From the concept map and from the quote above, it seemed that Daniel had chosen to articulate a much broader conception of geography than Anna, although he was also able to identify the part of his concept map in which the school curriculum was situated. While Anna chose to focus on a partial representation of what she knew about geography, Daniel drew upon his disciplinary knowledge to produce a substantive framework for geography *as a whole*. Daniel was less influenced than Anna by the split between school and academic geography in his interview. Instead his perspective was that geography was ‘a lens through which to view the world’, and that trying to understand ‘space and place’ provided the content of geography with a unified focus.

Daniel also acknowledged that this lens shifted across time. He explained that changing geographical paradigms meant that people looked at the world using different lenses, and that this had to therefore move above the content of geography (reflected in Figure 5.2).

So those phenomena existed but there are many ways of understanding them. This would be a separate branch by itself. If I had space I would just pull up the, erm, another arrow up... In a sense this whole train is like erm meta-cognitive, meta-geographical.

Not only did Daniel use these different lenses as an organising frame for his concept map, he also acknowledged that at a syntactic level, these approaches ‘stem from different eras, different times’ and ‘they cannot be applied throughout’ but should be understood in the contexts within which they developed. Daniel therefore appeared to be drawing upon discourse in the academic subject context to a large extent in his discussions of geography as opposed to Anna who had chosen to discuss school geography.

There were a number of marked similarities in Daniel and Anna’s past experiences of geography. Both had had the same number of years learning geography using the same national curriculum. Both had also studied at the same geography department at university. They had each majored in geography and done an extra year of geography for their Honours degrees. From the interviews, it was clear that both respondents had a firm grasp of geography in terms of its main concepts, as well as how the content of geography was organised and connected. They were also able to distinguish between the structure and content of school and academic geography in their discussions. However, they had *chosen* to draw very different concept maps. In trying to understand the reasons for this, I was struck by the differences in the *professional identities* they had adopted at this stage of the data collection, as well as how their *personal contexts* had led them to reconcile geography in markedly different ways.

Daniel seemed to have positioned himself as a *geographer* first rather than as a geography teacher. This might have been due to factors in his personal context. Daniel had an especially prestigious academic background and was an alumnus of some of the best schools and academic streams available in the Singapore education system. While most of the other respondents, Anna included, described their secondary school geography education as involving the rote learning of content and drilling for examinations, Daniel traced his incipient conceptions of geography as a lens through which to understand the world to his time in the Gifted Education Programme in an elite all-boys' secondary school.

I had a wonderful teacher. And she was the one who asked us in class, bring an article to class and tell us what is *geographical* about this... along the way it developed into a genuine love for the subject... where I could actually read about geography in the headlines... It was very *good in helping me see the world in this lens*. It helped me to develop a broader perspective [*italics my own*].

Daniel continued to study geography at 'A' levels, where he was admitted into the Humanities Scholarship Programme at a top JC. Daniel believed that 'more experienced teachers, teachers with the broader grasp of the subject' were assigned to teach students in this programme. In this respect, Daniel stood apart from the other respondents because no one else had described such an experience of school geography. For all the other respondents, school geography was distinct from what they learnt at university and tended to focus only on the content of both Physical and Human geography without an explicit consideration of how this content or their lived experiences were *geographical*.

This might explain why to Daniel, there was no need to choose between school and academic geography content in his map. His experience of geography as a student had from the first been more coherent and unified.

As the recipient of a prestigious government scholarship at university, Daniel was also earmarked to be an 'Administrative Officer' within the civil service, a special category of civil servants whose members were expected to rise quickly through the ranks in a short period of time. His stint as a teacher was anticipated to last only a few years, before he was transferred to another government ministry to broaden his experience of the civil service as a whole. This implied that perhaps Daniel did not conceive himself solely as a *teacher*. Indeed during the interview he had referred to himself as a 'civil servant' as well, a term none of the other respondents used. In discussing geography, Daniel stated that it was crucial to have both 'a good depth of content knowledge' as well as to be able to 'see the panorama of all the subtopics' and the larger theoretical links between these. Such a broad disciplinary perspective would have been applicable to many aspects of the civil service (e.g., in urban, financial or social policy making). In contrast, Anna positioned herself as a geography teacher and stressed what was important for a geography teacher to know about the school curriculum.

In the above discussion, I have suggested that both Anna and Daniel's articulated subject conceptions were related to both their past experiences and subject knowledge of geography, but also to the professional identities they had assumed during this stage of the data collection process. Arguably, this was intimately connected with larger

discursive structures in Singapore's political and social contexts, and by extension, its national education context (see Section 3.2). The few deemed to be 'more able' would early on in their schooling be streamed into elite tracks where their educational experiences were different from that of everyone else. Discourses related to the grooming and career advancement of 'elite' scholars may have also contributed to the different professional identities adopted by Anna and Daniel at the start of the course at the National Institute of Education (NIE). This professional identity appeared to influence the ways in which the two respondents chose to reconcile what they knew about geography to me.

#### Conceptions of Geography: Articulating 'How'

In discussing his beliefs about how geography should be taught, Daniel expressed the view that subject matter knowledge was the key. Daniel stressed the importance of good content knowledge, a knowledge of the links among the content knowledge (substantive structure), as well as knowledge about how geographical knowledge might change with different philosophical orientations (syntactic structure). He argued that it was only with this knowledge 'of what I know' that a teacher would be able to teach with 'passion and enthusiasm'. Daniel referred to constructivist notions of teaching and learning and observed that a good geography teacher would be able to draw upon his/her subject knowledge to create 'a little bit of dissonance, a little bit of disequilibrium at the beginning' such that the students would then be able to construct the knowledge for themselves.

While Anna also subscribed to a constructivist approach as a good way to teach geography, she neither used the term explicitly, nor did she refer to educational theory. For her, this approach was based on her own successful past experience of learning geography at school. In contrast, Daniel drew specifically on a ‘Piagetian sort of philosophy of education’ which he had developed while working part time at an education consultancy firm in the private sector and interacting with the founder of the company, whom he referred to as his ‘mentor’.

### Conceptions of Geography: Discourse and the Body

Like Anna, Daniel too drew upon disciplinary discourses that linked geography to fieldwork and geographers’ bodies to active and fit bodies. He commented that a geographer was ‘someone with a love for the outdoors, an outgoing person’ who ‘really believe[d] in the field’. In addition, geographers were ‘tough people who can take physical hardship, not those kinds that are afraid of charging up a hill’. By extension, he therefore also felt that geography teachers stood apart from other types of teachers because they were

...never unwilling to bring a child out of the classroom, always keen to. Other teachers might balk and say, what for, everything's in the classroom, but the geography teacher would be unstinting in wanting fieldtrips. I think the geography teacher believes in that. *I believe in it because of the discipline*, because of the discipline I have to impart it. *You can't do one without the other*, it's amalgamated [italics my own].

Here we can see that to Daniel, geography and fieldwork went hand in glove, and that because he was a geographer, he was committed to teaching through fieldwork. He even

explicitly reflected that fieldwork would ‘give the students an *embodied* [italics my own] experience... and it's something they will never forget’. Like Anna, Daniel felt that fieldwork experiences were memorable and important aspects of learning geography because they involved the students *physically*. In fact this interest in the fieldwork aspects of geography was reflected in his Honours Year thesis on ‘The World as Classroom’.

It was interesting to note however that like Anna’s concept map, fieldwork was not reflected in Daniel’s either. Instead he focused on geographical perspectives and content alone. When I asked Daniel why this was so, Daniel mused that fieldwork was not really emphasised in school geography and he somehow associated it more with *research* done at university level. Daniel’s discussions of his fieldwork experiences all centred on his university experiences of geography. For example, he recalled a number of field trips made while at university to study mangroves, rivers, rainforests and the impact of people on natural environments, and described his wonder that ‘I never knew that within Singapore there was so much you could do’. It was therefore only at university that he learnt to appreciate how through fieldwork, geographical knowledge was the outcome of where ‘theory and reality intersected’, whereas before that, geographical knowledge had been ‘all theory’ to him. Therefore, while Daniel appeared to have drawn his concept map from the position of a geographer, and had not distinguished between school and academic geography in doing so, he was still cognisant of the focus on content and conceptual knowledge at school level and the lack of emphasis (at the point of my study) on the fieldwork components of the subject.

This distinction between academic and school geography's relationship with fieldwork took on an embodied dimension to Daniel as well. Geography 'professors working in universities' who did real research and fieldwork could dress in a 'rugged manner', while teachers, even geography teachers, had to dress more formally for work.

I think in... in the name of portraying a professional image, teachers should follow the [MOE/NIE] guidelines... there should also be a certain formality because in the classroom, this teacher-student relationship is really a formal one, *it's instituted by the laws of the land, we are civil servants...* so there is a certain accountability in our public image [italics my own].

Daniel's professional identity as a 'civil servant' mediated between his identity as a geographer and his physical appearance while at work. As such he felt bounded by discourses outside of the subject context but within the state bureaucracy. The relationships among subject discourse, fieldwork and the body in both Anna and Daniel's cases were clearly complex, and influenced partially as well by the professional identities they had assumed.

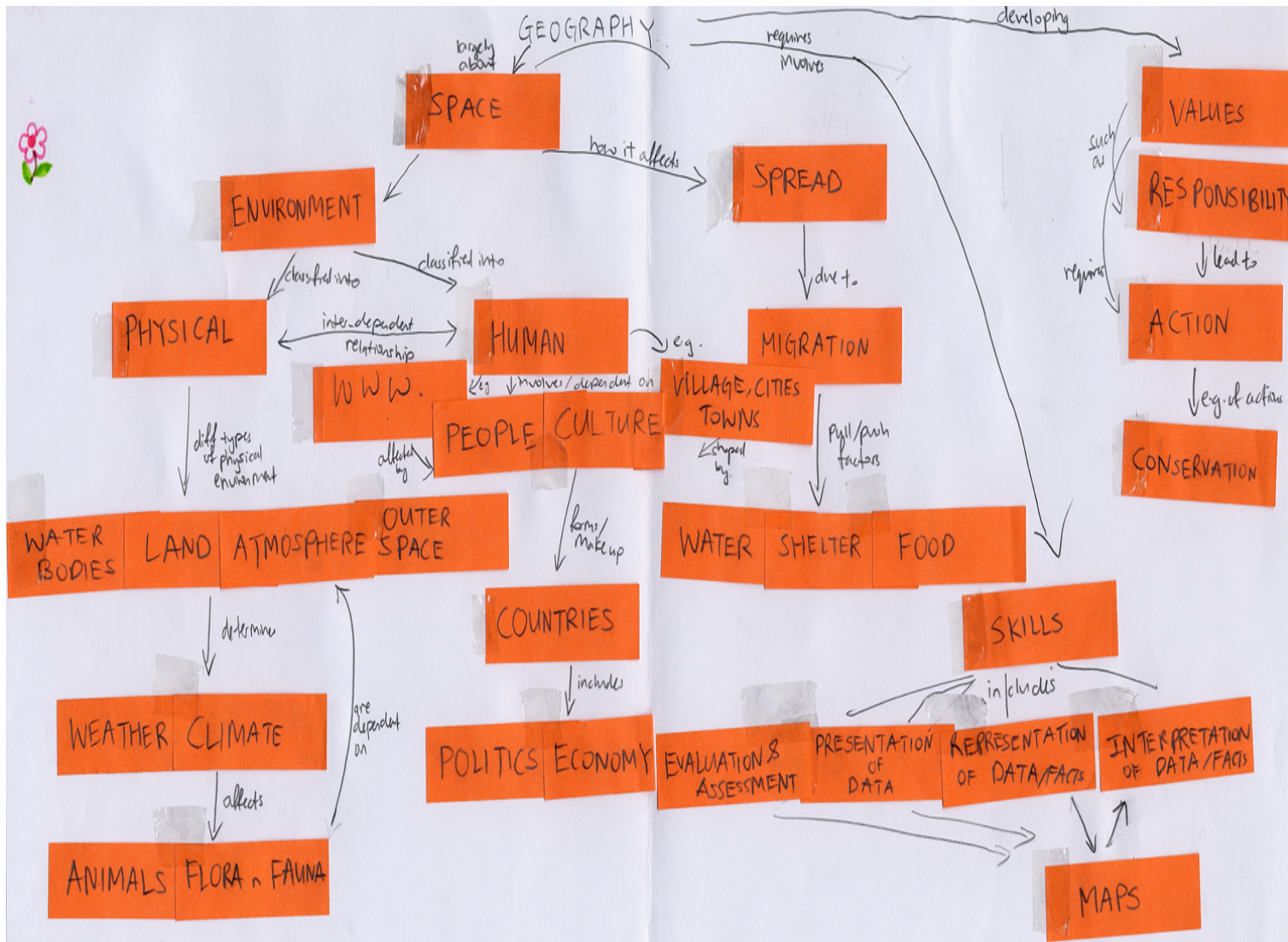
### 5.2.3 Baozhu

#### Conceptions of Geography: Articulating 'What'

Baozhu organised her concept map around her understanding of key geographical *concepts* (Figure 5.3), as opposed to focusing primarily on geographical *content* at school or university levels.



Figure 5.3 Baozhu's Concept Map



In terms of its substantive structure, Baozhu appeared to have drawn on academic geography rather than the school curriculum for her concept map. To her, geography involved three main components – *Space*, *Skills* and *Values*. Baozhu classified *Space* as comprising ‘the environment and spread... as in how things are situated’.

She also explained that geography involved having an ‘overview of our environment. You can’t look at a place in isolation; you have to look at surroundings as well’. Baozhu also referred to the movement and spread of people across *Space*, with migratory flows as an example in her concept map. During the photo elicitation exercise, Baozhu explained that ‘to me, as long as there’s *Space* involved and there’s movement, it’s geographical’. Like Daniel, this understanding of our world through a spatial lens (situation and context) was to Baozhu quintessentially *geographical*, and she expressed this as a ‘geographical eye’.

...you ask yourself questions about why something is here and why did it end up here... I thought that geography was more of a *perspective* than a discipline... more about *how you see things* [italics my own].

Baozhu attributed this conception of geography to her time at university where she ‘became quite enlightened’ about such matters. Apart from discourses in academic geography that influenced how Baozhu chose to organise her concept map, she also referred to her two-year work experience as a flight attendant with Emirates Airlines after graduating from university. Baozhu suggested that during this time, she got to experience for herself the ‘differences between places’ and to ask herself why this ‘spatial

differentiation occurred'. Baozhu therefore applied the perspective she had learnt at university to her personal experiences to make sense of the world.

However, Baozhu had also had experience teaching geography prior to enrolling at the NIE. She had taught it at a tuition centre in Singapore while still an undergraduate and she had also been placed in a secondary school by the MOE for a few months as a Contract Teacher. Baozhu drew upon the national curriculum for school geography in both her concept map and in the interviews. For example, she included Physical-Human interactions as a key component of geography in her map and related this to *school* geography, distinct from academic geography, in the interviews. She explained that when she was in secondary school,

...we were just told that geography was about stuff *about our environment and how we were affected by it*, but at uni we were told that we had to look at things through the geographical eye [italics my own].

Baozhu also tended to draw more on the school curriculum during the interview compared with in her concept map. In fact in the photo elicitation exercise, she appeared to adopt the identity of a *geography teacher* when she ranked pictures that were more cultural or political in content as 'least geographical' because while they were 'still geographical, *as geography teachers* right, we need to present the bigger picture to the children' [italics my own]. This bigger picture in school geography focused on 'how humans affect the environment and how the environment affects humans' – a clear reference to the national school curriculum. In addition, when rationalising whether a

photograph was geographical or not, Baozhu would decide based on whether she could ‘fit it into a chapter in the textbook, then it’s geographical’.

Baozhu also included geographical *Skills* like representing data and interpreting and evaluating spatial data in her concept map.

It’s how we represent the world, which is a very important aspect of geography as well. Because if we can’t represent something, then it’s very hard to study... we use different ways to represent the world... so through maps... Because one of the very important parts of geography is space and the best way to represent space is to draw it out.

Baozhu’s conception of geographical *Skills* in the interview appeared to stem both from her position as a geographer who was concerned with spatial phenomena, as well as a geography teacher. Baozhu suggested that a good geography teacher knew how to ‘prepare students for exams’ and these geographical skills were important to doing well in examinations. Unlike Daniel, who had positioned himself mainly as a geographer when discussing his subject conceptions, or Anna, who had adopted the identity of a geography teacher, Baozhu’s position appeared more mixed. In crafting her concept map, she drew more on academic discourse of geography from her university experience, but in the photo elicitation exercise, she tended to privilege aspects of geography that were emphasised in schools. Baozhu therefore seemed to be actively reconciling discourse in the national education, subject and teacher education contexts in relation to her evolving professional identity. This suggested a certain level of fluidity in both subject conceptions

and professional identities as she made sense of the different types of discourse affecting her articulation of geography to me.

Baozhu was unique amongst the respondents in emphasising the *Values* (affective component) that she felt were crucial to geography. Instilling ‘care and concern for the environment’ was a value outlined in the national curriculum at all levels of geography education, but only Baozhu referred to it explicitly in her concept map. Deng and Gopinathan (2001) observed that Singaporean teachers tended to think of teaching as the transmission of knowledge and skills alone and this might be the reason why this affective component was not part of the subject conceptions articulated by the other respondents. This was not the case for Baozhu, however. Despite the relative lack of emphasis on the affective components compared with examinable knowledge and skills in Singapore classrooms, Baozhu resisted this dominant exam-centred discourse in discussing her geographical conceptions. She spoke at some length in the interview about ‘conservation and management, what are your responsibilities as a global citizen, what actions you should take’. To her, geography was important to conservation efforts because it studied the relationship between people and the environment - ‘it’s also about how we interact with the environment... how we use resources’.

I just *strongly believe* you know, that very cliché... earth is our only resource and we should try to conserve it for the future generation [italics my own].

Baozhu explained that this interest in environmental conservation began in secondary school because of her ‘wonderful geography teacher’ who influenced her love for the subject, ironically, not during classroom lessons, but outside of it. She was the teacher-in-charge of the National Police Cadet Corps in the school, of which Baozhu was a member. She recalled that ‘when we are out on maybe like camping trips, she would refer to things that are geographical to her and she shared with us’. This included appreciating flowers, plants and other animal and insect life. This led to Baozhu developing an interest in the natural environment and she began reading up about nature, which she later connected to geography. For example, she was especially interested in the conservation aspects of geography in magazines like the *National Geographic*. Baozhu therefore resisted the overarching discursive focus on examinable content and skills to articulate this dimension of her subject conceptions because of this interest and belief in the role of geography in furthering environmental awareness and conservation.

#### Conceptions of Geography: Articulating ‘How’

Like Daniel, Baozhu stressed the importance of developing the ‘bigger picture’ and ‘essential understandings’ of geography in her students. This related to geographical perspectives that she outlined in her concept map. Drawing upon her own personal interest in geography, which led to her reading up on conservation issues in her spare time, Baozhu also believed that it was important to get students interested in the subject, arguing that ‘once they are interested, they will probably go out and find out more by themselves’. This same personal investment also gave rise to the view that teaching

geography involved promoting values related to conserving the environment, and stated that a geography teacher had a responsibility to

...be a good global citizen herself, her way of life, practise conservation wherever possible. Because it's hard to talk to your kids about these kinds of things when you're not practising it yourself'.

### Conceptions of Geography: Discourse and the Body

As discussed above, Baozhu connected geography with nature and the outdoors from early on and this also translated into her belief that when

...you're studying geography it *requires a lot of fieldwork* and you *can't be those kind of very ladylike person*, don't dare to touch the mud that kind of thing... and you should be concerned about the environment enough to maybe want to touch a few leaves [*italics my own*].

Baozhu, like Anna and Daniel, referred to a geographer as someone who was comfortable with the outdoors and who eschewed ladylike characteristics. This embodied aspect of the geographer was to her mind closely associated with the subject – one which required physical contact with the natural world because one cared about it. This perception stemmed from and reinforced geography's roots with the exploratory tradition (discussed in Section 2.3).

However, like Daniel, Baozhu appeared to separate school geography from academic geography and geographers from *geography teachers*. For example, she believed that geography teachers should look 'professional' at work and dress more formally even

though geographers at university were allowed to ‘wear khaki, safari clothes’. She also did not include fieldwork in her concept map. When asked why this was so, Baozhu referred to the national curriculum and suggested that this was because fieldwork was not important and she had ‘overlooked it’. Like Daniel and Anna, Baozhu appeared to have been affected by the national curriculum for school geography which did not emphasise fieldwork as an examinable component of geography during the concept mapping exercise.

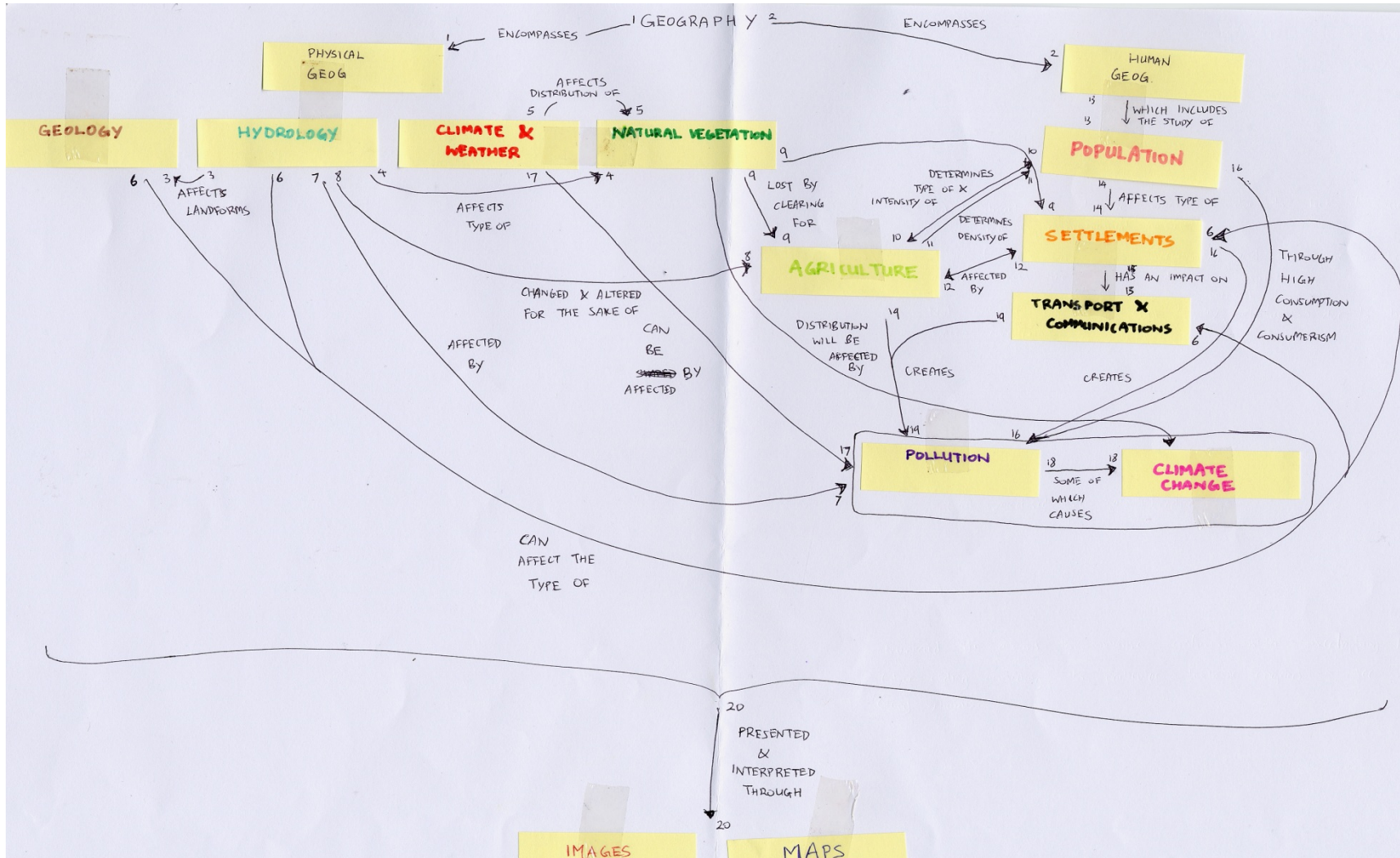
#### *5.2.4 Frederick*

##### Conceptions of Geography: Articulating ‘What’

On the surface, Frederick appeared to have drawn largely upon the school geography curriculum for his concept map. The main labels used related to textbook chapters or units outlined in the national curriculum (Figure 5.4). The central organising principle, unsurprisingly, was the relationships between different components of Physical and Human geography, which Frederick took pains to enumerate on his map. Frederick explained that when he was drawing the concept map, he tried to ‘separate out’ the different topics/units ‘based on the secondary school syllabus. So the basic divergence is Human and Physical geography’.



**Figure 5.4 Frederick's Concept Map**



The geography curriculum in Singapore tends to be anthropocentric in nature (see Section 3.3) with more emphasis placed on the interaction between people and the environment (this influence was clear in Anna's concept map) than on physical processes and systems (which was also reflected in Daniel's). In this respect, Frederick was more like Anna in that he discussed geography mainly in terms of man-nature relationships. When presented with a photo of a physical landscape, Frederick tended to muse, unprompted, about what the interrelationships between people and that landscape might be. For example, for the photo of a volcano, he felt that it would be geographical if 'let's say there's a village on the mountain slope, how would any seismic activity affect the people'. Similarly when presented with the photo of a river, he explained that 'if there's a human feature over here, maybe a boat, or a house or a dam somewhere, you can tie in things like how people are affected by fluvial processes, or how fluvial processes affect the human landscape, or how people affect the landscape'.

Frederick explicitly attributed this conception to the national curriculum – 'the syllabus tends to focus on the role of man in managing resources and reacting to the environment'. The influence of human-centred discourses in the school curriculum was also seen in Frederick's discussion of spatial representations in geography. For example, he described the world political map as 'one way of representing our understanding of the world, in terms of geopolitical boundaries... so in a sense this *gives people an overview* of the world... it's one way of representing the world so that *people can understand it*' [italics my own]. Again he attributed this point of view to his experience of secondary school

geography - 'all of this we have *learnt in secondary geography* was represented through maps and images' [italics my own].

Like Anna, Frederick expressed conscious decision making when constructing his concept map.

There are other aspects that I covered in university but *I chose not to include them here... I deliberately left things out* because I guess those were the things that I felt were beyond the scope of secondary school geography [italics my own].

What was left out of Frederick's articulated conceptions was a somewhat sophisticated and multi-layered view of the links and relationships that shaped both physical and human landscapes, which Frederick termed as 'the big picture'. When prompted to elaborate on this, Frederick used a GIS metaphor.

So let's see you have a very very basic view of the world here [blank world map], and then you zoom in then you add the ground level view, the rocks, the climate, the vegetation. And then you add one layer of human landscape, the urban, the transport and communications and all that. Then you add in the social relationships between people, and then the relationships between people and the landscape and how they all interact. It's like GIS basically... all these layers, and then you can also cut across the layers and put in an arrow here and there, very three dimensional actually.

Frederick attributed this understanding of geography's complexities to his experience of geography at university. He cited the influence of his NUS lecturers whom he referred to as 'great' because 'they actually opened up new ideas of geography to me', as well 'opened up new connections... they helped me draw the lines, the connections'.

However, he explained that he did not think these complexities were relevant to teaching geography in school and that a ‘simple focus on how man and the environment interact is enough’. Like Anna therefore, Frederick chose to draw mainly on the school curriculum for geography, suggesting that both his own personal experiences of secondary school geography and his professional identity as a geography teacher were important to how he reconciled discourse in the process of articulating geography within the teacher education context.

### Conceptions of Geography: Articulating ‘How’

Frederick stressed the importance of using maps and other types of images in teaching geography, explaining that this was an important way to get students to understand interactions between people and the environment. Like Daniel, he felt that to teach geography well, a geography teacher should ideally be able to grasp the ‘big picture’ of the elements that shaped landscapes and see the relevance of this to their own lives.

A geography teacher is someone who is able to understand the big picture, definitely, to *know the link and relationships*, very important. I guess people who... based on my biases, *I see Geography everywhere I go* actually. So how the link is, it’s still there. I think that’s important [italics my own].

The statement above suggested that like Daniel and Baozhu, Frederick was referring to a geographical lens that enabled him to understand his own lived experiences, which was knowledge that he valued. However, Frederick then went on to observe that such knowledge was not necessary for *teaching* geography. It was alright for geography teachers not to ‘see it in their daily lives, *if at least they know it in their syllabus*’ [italics

my own]. This further suggested that Frederick was both able to distinguish between what he knew about geography, and what he needed to teach school geography. As such when articulating his subject conceptions (for example in the concept mapping and photo elicitation exercises), Frederick tended to consciously and selectively draw upon discourses within *school* geography to frame what he needed to teach, and how.

### Conceptions of Geography: Discourse and the Body

Like the respondents discussed above, Frederick associated geography with active bodies doing fieldwork outdoors. To him, studying geography necessarily included authentic encounters with real world phenomena. For example, he stated that

For me the most meaningful part... was that I actually did some research rather than reading papers, talking about theories... I think *outdoors still matter the most* in geography [italics my own].

Frederick recounted ‘impactful field trips’ while at university, conducted in Singapore, Malaysia and Indonesia, where he studied various aspects of coastal and river environments, as well as natural vegetation. In his descriptions, Frederick kept referring to how these experiences were genuine and authentic by referring to ‘a *real* beach, a *real* spit, a *real* headland’ and also how ‘there was a *real* current’ in the rivers [italics my own]. Unlike all the other respondents, Frederick professed a preference for studying physical geography. This was related to his personal context and his interest in nature. Frederick recounted how as a child, he ‘liked animals a lot’ and would always be ‘in the library and bookstores looking at books’ on geography and botany and also paying attention to the landscape when at the beach. He also ‘watched a lot of TV, these nature

documentaries... wow I enjoyed it'. As an adult Frederick also volunteered as a guide with the *Raffles Museum of Biodiversity Research* and stated his intention to continue as a volunteer even after becoming a teacher. This interest in nature connected with physical geography and with fieldwork for Frederick where there were opportunities to observe and interact with 'real' landscapes and phenomena. Like the others, Frederick also observed that geographers had to be willing to endure some physical hardship to spend time out in the field, 'getting a bit sunburnt is alright, getting a bit tired is good – it's just part of it [fieldwork]'.

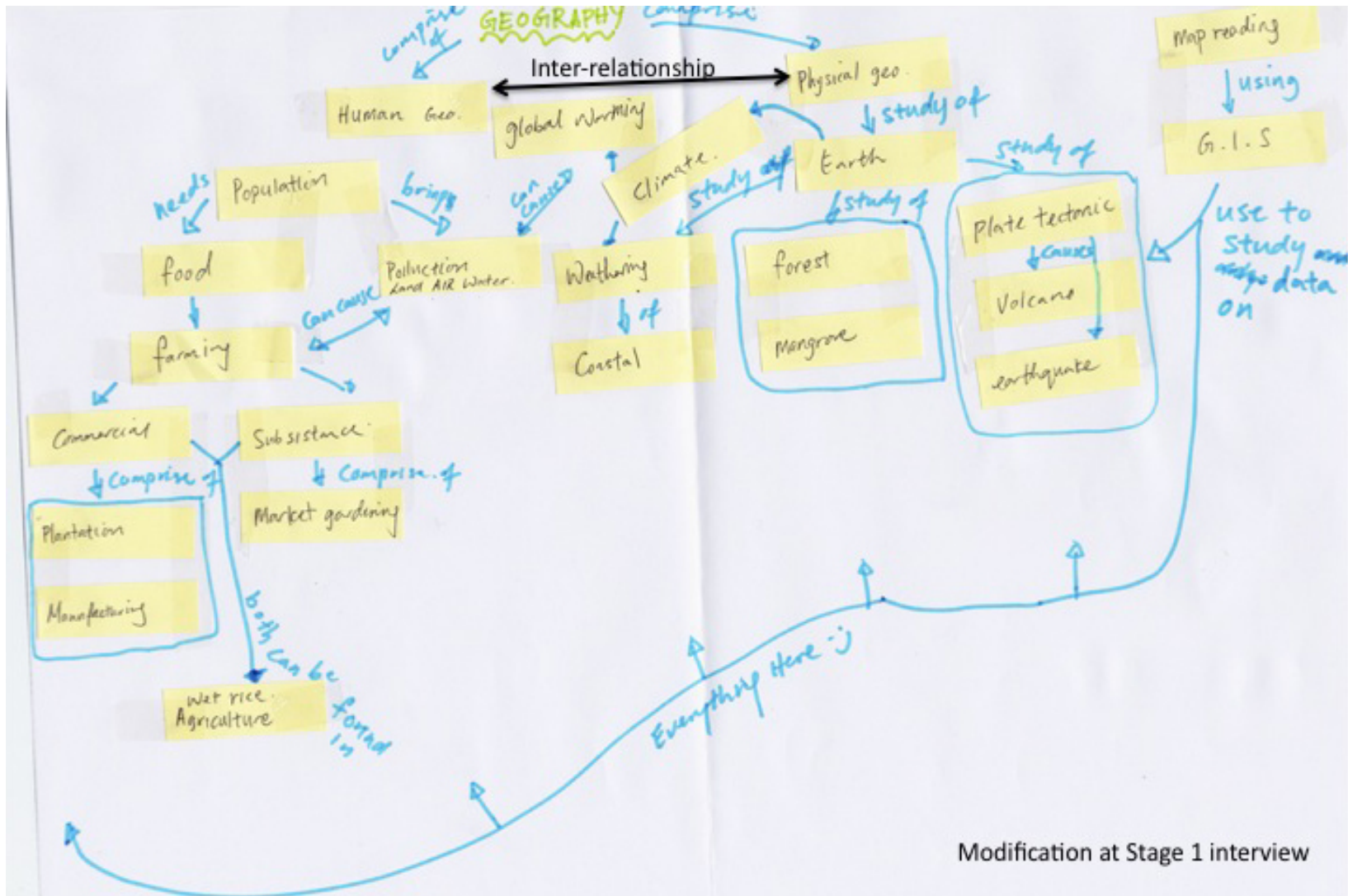
However, Frederick also did not include fieldwork in his concept map. Like Daniel, he connected fieldwork with 'research' done at university, citing that it was only there that he had any real opportunities to interact with the physical environment in his geography studies. As such, much as he valued fieldwork, it was more important to the study of *academic* geography. Frederick also did not perceive geography *teachers* to embody any particular attributes that distinguished them physically from other teachers. Instead he discussed how it was important as teachers to go to school and 'look smart', in keeping with professional standards.

#### 5.2.5 Eddie

##### Conceptions of Geography: Articulating 'What'

Among the respondents, Eddie's concept map (Figure 5.5) was one of the least comprehensive content-wise.

Figure 5.5 Eddie's Concept Map



Modification at Stage 1 interview

In the first interview, Eddie stated that his map was 'just a gist of my thoughts... a very rough draft, and not everything is embedded inside'. Eddie's map also contained errors. For example, he cited 'Market Gardening' as a type of 'Subsistence Farming', and placed 'Manufacturing' under 'Farming'. Initially, Eddie's concept map lacked any larger substantive framing of geography, apart from separating the content of Physical geography from Human geography. However, in the first interview, he clarified that geography was 'mainly about the interaction between the Human and the [Physical] landscape', and he modified his concept map accordingly (reflected in Figure 5.5). This interaction was quintessentially geographical to Eddie when he explained that the study of weather was 'Science' when it focused only on the physical processes, but became 'Geography' when the focus shifted to weather's effects on people. In the photo elicitation exercise, Eddie ranked photos that showed plainly the interrelationships between people and the environment as 'most geographical'. He also categorised photos that only showed people without a larger context - 'the situation, the place they [people] are in and even the interaction between they and the environment' as not geographical.

The interview data suggested that prior to his decision to become a teacher Eddie had not developed any coherent frames of geography's substantive structures. This was in contrast to Anna, Daniel, Baozhu and Frederick who had all developed a larger organisational framework for geography before, or while at, university. Whereas all the respondents above described an interest in the subject at a personal level, Geography was 'just another subject' to Eddie and his choice to read it at university was a purely practical one as he found it easy, 'frankly speaking, can smoke [bluff] your way through'.



Eddie revealed that at school, he did not put in much effort in his studies, which he admitted might explain the general sketchiness of his knowledge of geography's content. As a result, 'I didn't get good grades of course, I managed to pass'. Outside of formal schooling, Eddie observed that he did not think about or discuss geography as 'not much people talk to me about geography.'

It was only after he was posted to a secondary school as a Contract Teacher that Eddie felt the need to think about geography in any substantive way. His conception of geography as the interaction between people and the environment was drawn purely from the curricula content - 'what kinds of concepts can I drill into them [the students]'. This interaction also provided him with a means for synthesising geography *for teaching*. Eddie's discussions of geography were often framed around how to *teach* it. He expressed the view that 'students don't actually treasure geography as a subject. Because they see it is useless, they don't see the relation [to their lives]'. Therefore he believed that teaching geography as a subject that emphasised the 'relationship between us and the environment' would 'help me *market* [italics my own] the subject to them'.

The application of the marketing metaphor to teaching geography was aligned with Eddie's personal context as a practical and business-savvy individual. While at university, he worked as a computer salesperson to earn money to pay for his tuition fees. He chose to read geography because it was 'easy', but the subject itself was unimportant to him because 'frankly speaking, geography cannot earn money'. Instead he was more interested in commerce-related modules both at JC and at university. Upon graduation, he

went to work in the banking sector and started a company matching blue-collar workers to jobs at the same time. During the interview, he also described how he was moving into a food catering business for workers in industrial areas because his 'current company has an excess of funds so it's a waste not to use the money and because there's also two interested parties interested in the investment'. He also confessed that the decision to become a teacher was a practical one because

...I want to spend my time with my family so I join teaching, so I will have more time. Because my previous jobs don't allow me to have time... basically I worked eight a.m. to ten, twelve p.m. No matter how long teaching is, cannot match... so I find still a breeze... although a lot of work, still manageable.

Eddie's adopted professional identity was also interesting to note. Whereas Daniel's subject conceptions were related to his identity as a geographer and civil servant, and Anna and Frederick had assumed that of a geography teacher, Eddie appeared to me to be *a teacher who happened to teach geography*. For example, Eddie stated that his choice to teach geography was purely due the MOE's assignation of his teaching subject. He referred back to his work experience in banking and in business and stated that he was 'teaching geography because I don't have Economics [as a major at university]'. He admitted that his content knowledge was weak, especially for Physical geography but that the gaps in content could be easily remedied - 'I brush up on the Physical now, I do readings now'. In fact Eddie also believed that he could 'also teach other subjects' because 'you can always build up content, you can read up'.

From the above discussion, it was clear that in articulating his conceptions of geography, Eddie drew mostly on his experience of teaching it at secondary school level. Unlike Anna and Frederick, and to some extent Baozhu, who *consciously limited* their conceptions to a discussion of school geography content, Eddie's conceptions were based mostly around his personal experience of teaching it in a way that he felt was relevant to students. He made no reference to the relative discursive influence of past experiences of school or university geography nor did he discuss any need to reconcile and select from competing variants of the subject in doing so.

#### Conceptions of Geography: Articulating 'How'

Eddie believed that to teach geography well, a teacher had to convince students that the subject was relevant and useful to their lives. This need to 'market' the subject to them was made even more urgent in a larger discursive context where the study of the Humanities was seen as less valuable than 'Science, the Math and the Language, which actually have more *power*' [italics my own]. Therefore, as a Geography teacher, Eddie felt that it was important that students

...see the relationship between us and the environment, you see. Everything we do actually impacts the environment, yah, like it's raining now. Why is it so, in March? Like you can understand why, you can even predict when the rain will come. This is a simple everyday life thing... it is relevant. The challenge is to relate to the student.

#### Conceptions of Geography: Discourse and the Body

Like the other respondents, Eddie did not include fieldwork in his concept map for geography. However, unlike the other respondents, Eddie did not appear to associate

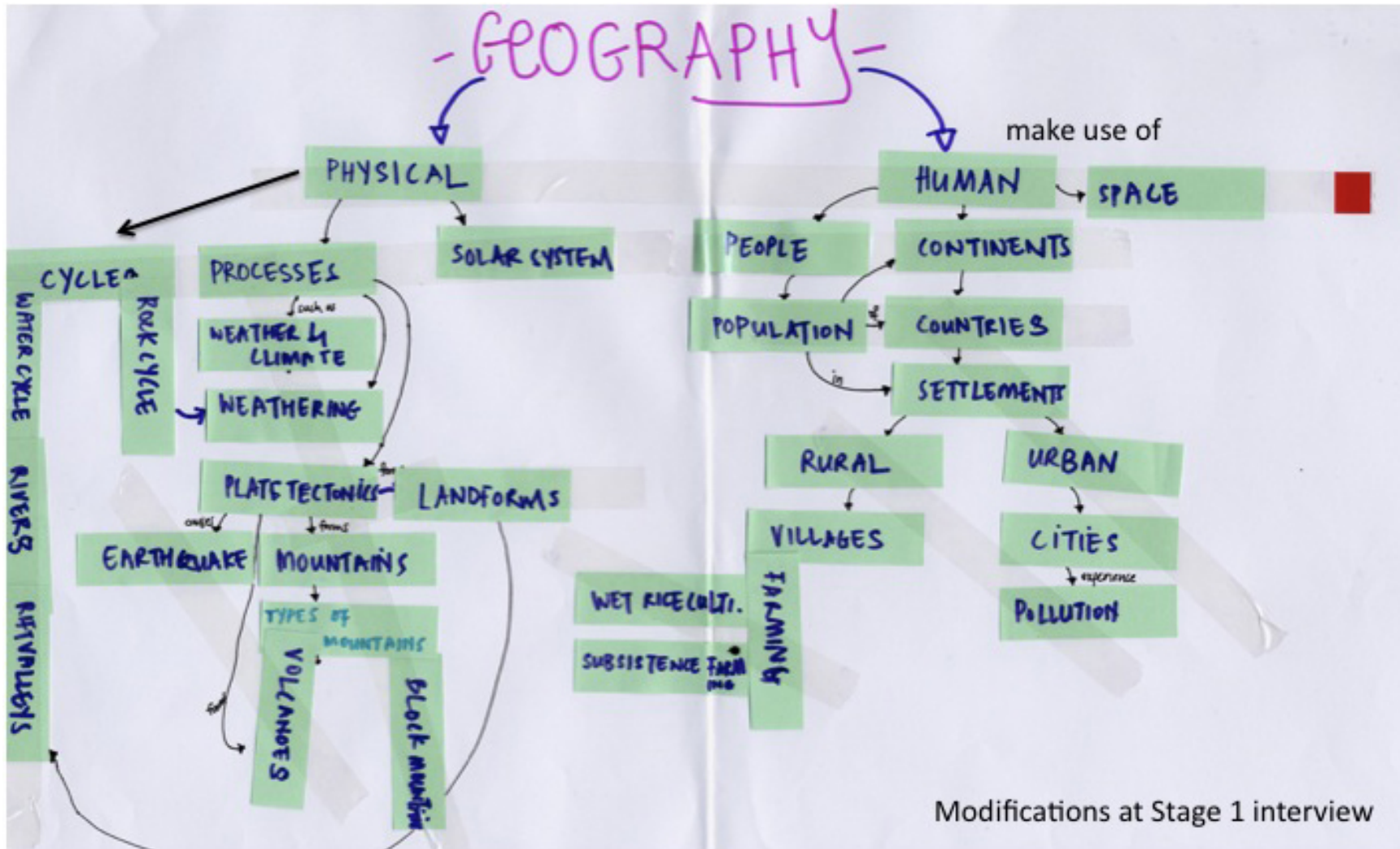
geography with fieldwork or the outdoors, nor did he believe that geographers or geography teachers had any identifiable physical attributes. For example, Eddie stated that his role as a geography teacher was to ‘deliver the *content* of the syllabus’ [italics my own]. He also stated that ‘a teacher and a geography teacher, they’re both teachers’ and that you ‘cannot, really cannot, tell them apart’. Instead he felt it was important for teachers to look professional – ‘dress smart, iron your shirt, wear long sleeves’. This was because *a teacher* was a role model to his/her students and had to conduct himself/herself in accordance with MOE’s rules.

#### 5.2.6 *Catrina*

##### Conceptions of Geography: Articulating ‘What’

Catrina’s concept map was similar to Eddie’s in that it lacked a larger substantive structure beyond dividing the content under the labels ‘Physical’ and ‘Human’ (Figure 5.6). There was also evidence of misconceptions about how the various components of geography connected to one another. For example, Katrina placed conceptually different items such as ‘Cycles’, ‘Processes’ and ‘Solar System’ on the same level in the map, and left ‘Solar System’ unconnected to the other elements on the map. Katrina also placed ‘Rift Valleys’ erroneously under the ‘Water Cycle’.

Figure 5.6 Catrina's Concept Map



In the interview, Catrina could not explain the links that she had made in her concept map. She started correcting her concept map, for example, linking 'Physical' to 'Cycles' with an arrow, and specifying that humans 'make use of' space (reflected in Figure 5.6). However, she gave up after a while, expressing that 'I don't understand my own map' and declined to annotate the links any further. She explained that at the point of constructing the map, she was 'caught off guard' and that there was a lot of 'confusion, I am trying to be organised but somehow, some things I don't know where to put some stuff'. Instead she had drawn on what she could recall of 'the topics in the textbook, how they tried to put it', but admitted that she 'didn't do a good job because my content is like zero' and 'I cannot find the links, I find it hard to separate them'.

During the photo elicitation exercise, Catrina also found it difficult to articulate her conceptions of geography beyond acknowledging that the photo depicted content she had learned in school or at university. For example, when asked to explain why the picture of the rainforest was geographical, Catrina explained that it was 'geographical because we studied about it in school'. When shown the photo of the beach, Catrina mused that 'Well, I can see, yah, the coast. So it's geographical... Because? Geographers are interested in it, they study it. There must be something about it right'? She articulated a number of disconnected and general statements about what she thought geography was. For example, it was 'just a way of life... studying about the world and... everything that happens in the world' and 'It's all about the tangible stuff... about what we can see'.

In the discussions that followed it became clear to me that Catrina had never before reconciled variants of the subject to herself prior to this study nor had she been tasked to see geography's 'big picture' and 'links'. Geography to her had always comprised discrete and unconnected sets of content.

They were different, different topics... somehow I am sure that all of them are... linked in some way or another, but for me, I just took it as a *modular thing, no links* [italics my own].

Catrina felt that while at university 'the *modules* I took interest me but not geography [as a discipline]' and the only reason she had chosen to study it was 'because it was easy... it's easy to pass. It's one of the *modules* that you can breeze through' [italics my own]. She had favoured Human geography courses because she could 'relate to' the content, and eschewed all Physical geography modules 'because it's difficult'.

Catrina's interviews as well as the data from Eddie suggested that it was possible for an individual to have done four years of geography at secondary level, and three years at university (neither of the them studied geography at JC), without understanding what geography's substantive and syntactic structures were. This also implied that only *specific content and skills related to sitting for examinations* were necessary to get a degree in geography. It was perhaps this past experience of getting through geography that made both Eddie and Catrina sanguine about their ability to teach it. For example, Catrina felt that the content needed for geography could be easily mastered, and she would just 'need to do homework' as 'geography is simple because you can just recall easily'.

It was not surprising therefore that during the concept mapping exercise Catrina, like Eddie, did not develop a map that displayed a coherent substantive structure for the subject. While Eddie was later able to draw upon his Contract Teaching experience to verbally articulate a substantive structure that he believed would help him teach geography, this was not the case with Catrina. Although Catrina had had half a year of Contract Teaching experience at a ‘neighbourhood<sup>5</sup>’ secondary school prior to the interview, she stated that in all that time she had only taught twice and had spent the rest of the time merely observing other teachers conduct their lessons. As such, she ‘didn’t really learn very much then. The teachers just used the textbook’.

However, Catrina acknowledged that since she started her Curriculum Studies module in geography at the NIE, she had felt a greater need to ‘know how to organise’ the geography content in order to ‘to teach it’. She mused that ‘somehow from the group work and all’ and ‘my friends showing me their concept maps, through our interactions something is exchanged’. She was therefore ‘more motivated to do something about it’ and ‘learn about geography’. This suggested that while Catrina had yet to think about or reconcile discourses about ‘what’ geography was, she was cognisant of discourses in the teacher education curriculum which emphasised the importance of developing an organisational structure for geographical content. To some extent, it could also be argued

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<sup>5</sup> ‘Neighbourhood’ schools in common Singaporean parlance refers to mainstream, government-run schools. The student population of such schools generally live in the public housing estates nearby. Although most of the Singapore population lives in these housing estates and studies in such schools, the term still carries a slightly pejorative undertone, since ‘neighbourhood’ schools are usually contrasted against ‘elite’ independent or autonomous schools, whose secondary level students are admitted on the basis of their better than average academic scores.



that Catrina was aware of her professional identity as a *teacher* although it was not clear if she also saw herself as a *geography teacher*.

Notably, Catrina's stated desire to develop an organising framework for geography was limited to what was necessary *for teaching school geography* alone. Catrina felt that there was no need to be concerned with the content of university geography or to worry about how academic geography connected with school geography since 'whatever we learnt at uni is not what we're going to teach at secondary school'. To some extent, this echoed similar decisions made by some of the other respondents (e.g., Anna and Frederick) to concentrate on school geography in their concept maps. The difference, however, was that Anna and Frederick were more than able to discuss geography from an academic point of view in the interviews and during the photo elicitation exercises, whereas Catrina was not.

#### Conceptions of Geography: Articulating 'How'

Catrina did not articulate any specific pedagogies or approaches that she felt were relevant to teaching geography, apart from expressing the importance of keeping the larger picture of Geography in mind when planning her lessons so that her students 'will see the light of Geography'. However, as discussed above, she commented that this larger picture was still developing through her teacher education experience.

## Conceptions of Geography: Discourse and the Body

Like Eddie, Catrina also did not appear to associate any particular ‘type’ of body with geography teachers and did not speak of any fieldwork experiences while studying geography. However, she also insisted on the importance of looking ‘professional’ and dressing appropriately for work.

### **5.3 Discussion**

#### *5.3.1 Subject Matter Knowledge and Selecting From What They Know*

I began this research with the intention of discovering *why* pre-service teachers articulated their geographical conceptions in particular ways (and not others) through an examination of the ways in which my respondents reconciled discourses about the subject. Although obvious, it is important to state that a key factor that influenced the subject conceptions articulated by respondents was their subject matter knowledge. Most of the respondents (Anna, Daniel, Baozhu, Frederick) appeared to be comfortable talking about geography in terms of its main content areas as well as its possible substantive and/or syntactic structures. For these respondents, this involved a process of *selecting* from all that they knew about geography in order to *assemble one version* of it based on a particular organisational framework (the reconciliation of discourse in this process is discussed in the next section).

One aspect of this process that was of interest to my research was how teachers reconciled the competing discourses between school and academic varieties of geography. Rynne and Lambert (1997) suggested that geography undergraduates had the

intellectual tools to cope with these divisions and this was clearly reflected in my study for most of the respondents, where there was a diversity of approaches to selecting and organising school and academic geographical knowledge. For example, Daniel constructed a conceptually sophisticated map that displayed his knowledge of geography's shifting philosophical orientations, while at the same time consciously subsuming school geography within it in the area of human-environment relationships. Like Daniel, Baozhu relied on concepts learned at university to present her understanding of geography even though in her discussions, she showed she was also cognisant of the content of school geography. In contrast, the data on both Anna and Frederick suggested that there were other ways that they could have chosen to organise their concept maps but that they consciously drew upon a version that most closely resembled the national curriculum in terms of its substantive structure.

However not all the respondents were involved in a process of selecting one version of geography from what they knew about geography. Initially, Eddie and Catrina both had trouble constructing their maps because they felt their subject matter knowledge was inadequate, and they were still in the process of building up their content knowledge. Eddie later managed to draw upon his working knowledge of the school curriculum to articulate a basic substantive structure for geography, but Catrina was still unable to do so during the first interview. In her case, the argument in the literature (e.g., Barratt-Hacking, 1996; Rynne & Lambert, 1997) about whether teachers discarded their academic knowledge when they started teaching was irrelevant. Instead Catrina appeared to be in a process of developing her conceptions at the start of the data collection process.

Putting aside this understanding that respondents had different levels of subject matter knowledge which affected the extents to which they could then be said to be actively *exercising choice* in articulating their conceptions of geography, the data suggested certain commonalities the ways in which the respondents negotiated discourse. In the next section I discuss the most important discursive influences on respondents' subject conceptions, and argue that despite the dominance of these types of discourse, the impacts on conceptions still varied. This was because discourse was mediated by both respondents' own personal contexts, as well as their assumed professional identities.

### *5.3.2 Subject Conceptions as Individual Responses to Discourse*

#### The National Curriculum

Researchers in the UK have shown that the enactment of the first National Curriculum there had serious implications for teachers' involvement in curriculum development and constrained how they thought about and framed their subjects (Graves, 1996; Rawling, 1996, 2001). In Singapore, Yeoh et al. (1994) suggested that teachers did not hold strong curriculum beliefs themselves, but instead expressed the curriculum beliefs of those in authority. In my research I found this to be true to some extent. Most of the respondents tended to organise geographical content around the idea that people and the physical environment were interrelated in various ways. In addition, most of the respondents also drew upon the national curriculum to supply the content/ labels for their concept maps and to decide which photographs were 'more' or 'less' geographical in the photo elicitation exercise.

This point of view could be attributed to the influence of the national curriculum for schools, which explicitly framed the study of geography around physical-human relationships. Anna explained that she had opted to draw a concept map for *teaching* geography, given her keen awareness of the requirements of the curriculum. Frederick drew upon the secondary geography syllabi to provide the content for his map. Baozhu also made explicit reference to what was within the scope of school geography when deciding if certain topics were geographical or not in the photo elicitation exercise. The national curriculum for school geography was therefore dominant in how respondents articulated geography. This dominance was further supported by a national education context of great competition among schools and teachers to get their students to do well in high-stakes examinations. In addition, pre-service teachers were already MOE employees and had compulsory Contract Teaching experiences even before beginning their teacher education courses. This created a situation where respondents were already familiar with the national curriculum. This is reminiscent of Foucault's argument that power produces knowledge and that power and knowledge directly imply one another (Foucault, 1979; Goodson, 1997).

### Professional Identities

The dominance of the national curriculum was mediated by the professional identities assumed by the respondents during the first interview. Where the respondents had assumed the professional identity of a *geography teacher*, there was a greater tendency to use the national curriculum as a basis for making decisions about what to include in their conceptions of geography. For example, although Anna was able to discuss academic

geography coherently and at depth like Daniel, her identity as a geography teacher led her to focus on constructing a map for school geography, observing that what she learnt at university was not going to be relevant to school. Frederick also assumed the identity of a geography teacher and drew upon the national curriculum mainly for his concept map even though he was able to articulate a more complex and ‘layered’ view of the many dimensions and relationships in geography which he had learned at university. The national curriculum was the only influence in the case of Eddie (and perhaps Catrina). This was partly related to his identity as a *teacher* who also taught geography. To Eddie, it was his duty as a teacher to master the content of the subject he had been assigned. Geography itself, as a larger discipline, was not important to him.

In contrast, where respondents did not embrace the identity of a *geography teacher* or *teacher* as strongly, the subject conceptions they articulated included more explicitly academic perspectives. For example, Daniel focused on the changing philosophies and perspectives of geography over time as a discipline rather than on school geography in his subject conceptions. This was related perhaps to his identity as an Administrative Officer who would only spend a few years within the education service. Baozhu’s concept map and her discussion of it also appeared to be more oriented towards academic geography perspectives and their applications to her daily life. This suggested an identity as a geographer. Baozhu’s case was however more complex in that she also seemed to embrace the identity of a geography teacher at times, the fluidity of her professional identity supporting Moore’s (2004) observation that teachers’ professional identities were

not always fixed. For example, in the photo elicitation exercise Baozhu referenced school geography content as more ‘geographical’ than academic content.

### Personal Experiences of Geography

Another important influence mediating between the national curriculum and respondents’ conceptions of geography was the pre-service teachers’ *personal* experiences of geography. In some cases, personal experiences of geography led respondents to *resist* dominant discourses when articulating their subject conceptions. The competitive Singapore education context and focus on results in both school and teacher appraisals tended to cause teachers to be so exam-oriented (Deng and Gopinathan, 2003; Dixon and Liang, 2009) that affective dimensions of subjects were not usually emphasised in school classrooms. However, Baozhu had a deep-seated appreciation for nature, stemming from her secondary school experiences and the influence of her teacher. This translated into an ethic of environmental responsibility that she associated with geography and which was very important to her conceptions. As such, Baozhu resisted dominant discourses in the national education context and included the affective dimension in her conceptions.

This resistance could also be seen to some extent in Frederick’s case. In Section 3.3, I noted that both school (and academic) geography in Singapore were skewed towards Human geography. It was therefore unsurprising that most of the respondents expressed a greater level of affinity for Human geography. Frederick was the exception in preferring Physical geography. He attributed this to his interest in nature since childhood. To Frederick finding out about natural landscapes and botany extended naturally into ‘an

appreciation of how things were formed, of the features and all that' in Physical geography. In contrast, he was less interested in Human geography because it did not connect with his personal inclinations.

Daniel's personal experience of geography as a school subject was markedly different from that of the other respondents. This might have caused him to privilege his personal perspective of geography in his concept map and subsume school geography as only part of this overall conception. This can be seen as a form of resistance to dominant discourses at the national education level. The influence of the personal context took Anna in the opposite direction. Her work experience as a geography textbook editor augmented the dominance of the national curriculum and led to a conception of geography that was specifically oriented around teaching it.

Finally, weak personal links to geography for Catrina and Eddie led them to conceive geography as *just content* that they had learned. Up to the time they enrolled at the NIE, there had therefore been little need to consider its substantive and/or syntactic structures. In both cases, the national curriculum served as a de facto guide to how they articulated their conceptions of geography. For example, Eddie drew directly on school geography in his interview and Catrina stated that only the examinable components of school geography were important to her teaching.



### 5.3.3 *The Body and Geography*

Another aspect of my research related to disciplinary discourses about geography's fieldwork traditions and their implications for the types of bodies that 'did' geography (Section 2.3). The data suggested that with the exception of Eddie and Catrina, the other respondents perceived geography as a subject that had a close connection to physical activity outdoors. Among these respondents, there was also a sense that the teaching and learning of geography was more authentic when it involved fieldwork. None of these respondents reflected this in their concept maps however. When asked why this was the case, they suggested that fieldwork was not an examinable component of the school curriculum. Instead it was equated more with university research. Here discourse in the academic context was clearly in conflict with the examinable school curriculum and national education context.

Similarly, most of the respondents (again with the exception of Eddie and Catrina) tended to characterize Geographers as fit and active individuals who were comfortable outdoors. Despite their enthusiastic description of and identification with the rugged geographer figure however, respondents generally distinguished geographers from *geography teachers* or *teachers*. They subscribed to the point of view that teachers had to embody a professional image and look smart, and that it was their responsibility to uphold the rules and regulations regarding teachers' appearance. This split in their conceptions of the bodies of school teachers versus academic geographers therefore mirrored a divergence in their conceptions of school and academic geography.

## 5.4 Summary

In this chapter I have sought to answer the following research question:

**1. How do pre-service geography teachers in Singapore reconcile (and resist) discourse about geography to articulate their conceptions of the subject?**

I have argued that framing the study of pre-service teachers' subject conceptions through the lens of individual responses to discursive power helps to explain the myriad ways in which subject conceptions have been articulated in the extant research. That is to say, it helps us to understand *why* teachers privilege one version of geography over other possible versions, as well as *why* some influences are more dominant than others across contexts.

My examination of discursive power in the Singapore pre-service teacher education context led me to discover that the *national curriculum was the most important discursive element* affecting respondents' articulated subject conceptions. The role of the state in education in Singapore has traditionally been a dominant one (as outlined in Chapter Three) and the pre-service teachers in my study also took reference from official documents and textbooks when deciding what to include in their subject conceptions of geography at this point of research. However the impact of the curriculum on subject conceptions was not uniform. Instead three other factors came into play to affect the ways in which respondents responded to the school geography curriculum.

First, respondents' own *subject matter knowledge* was important as those with broader and firmer understandings of the subject were better able to appreciate the similarities and differences between school and academic geography as well as Human and Physical geography. These respondents reconciled dominant discourse in various ways – limiting their concept maps to school geography content or incorporating school geography as part of their larger organisational framework. Respondents who had relatively weaker conceptions of geography, however, drew completely on the school curriculum in their articulations of geography.

A second factor that mediated pre-service teachers' responses was their own *personal experiences* of geography. Where respondents did not have a rich personal relationship with geography, they drew upon the national curriculum. When respondents resisted the national curriculum most explicitly, they did so by drawing upon their own deeply held beliefs and experiences of the subject. That is to say, they were most likely to include elements that they held most dear in their conceptions of geography regardless of whether it was emphasised in the national curriculum.

The third factor was respondents' own adopted *professional identities* at the point of data collection. The respondents did not appear to hold uniform professional identities at this point in time, and for some respondents, this identity was still in flux. However, the data suggested that these adopted identities were nevertheless still important to how respondents responded to discourse. Those who had assumed professional identities as *geography teachers* or *teachers* were more likely to take reference from the national

curriculum compared with those who still identified as *geographers* during the interviews.

Finally, for most of the respondents, *doing* geography involved spending time outdoors, getting dirty and engaging in physical labour. They conceived geography as a subject that intimately connected with active and fit bodies out in the field. However, all of the respondents associated these conceptions more with academic geography and with academic geographers' bodies. As school teachers, however, they drew upon discourses that regulated teachers' bodies to construct conservative and professional images instead.

In the next chapter, I turn my attention to what respondents did during Teaching Practice with the subject conceptions they had articulated. More specifically, I examine the extent to which their conceptions of geography and how they believed it should be taught were enacted in their decisions regarding performing 'good' teaching. I also unpack the dominant discourses in the Teaching Practice context that affected the decisions that were made relative to the influence of these subject conceptions.

## Chapter Six: Subject Conceptions and Performing ‘Good’ Teaching

### 6.1. Introduction

In the previous chapter, I discussed how pre-service geography teachers articulated their conceptions of geography as a result of reconciling the dominant discourses surrounding geography education, including that within their own personal contexts. In particular, I discovered that my respondents’ conceptions were largely influenced by the national curriculum for school geography which they negotiated vis-à-vis their own subject matter knowledge and personal experiences of geography, as well as the professional identities they had adopted at the point of data collection. In this chapter, I examine what then happened with these articulated subject conceptions when respondents went out to schools for Teaching Practice.

Research on the links between teachers’ subject conceptions and their practice has been contradictory (see Section 2.4). In my study, I argue that examining how respondents negotiate the discourses surrounding ‘good’ geography teaching in their decision-making would provide insight into this contradiction in the literature. In this chapter I therefore focus on answering the following research question.

- 1. How do pre-service teachers reconcile (and resist) discourse in their decisions about *performing* ‘good’ geography teaching? To what extent do they draw upon their subject conceptions of geography in doing so?**

In this chapter, I also examine the impact of Teaching Practice on the subject conceptions that respondents had earlier expressed. This is encapsulated in the research question:

**2. How and why do pre-service teachers' conceptions of geography change after Teaching Practice?**

Martin (2000, 2005) showed that teachers' subject conceptions were affected by their teaching experiences in school as they came to draw more on their knowledge of school geography and how to teach it. However, in my research I do not consider these changes to be the outcome of just development in subject matter knowledge or pedagogical content knowledge. Instead, I view changes in subject conceptions to be part of an on-going process of reconciling subject conceptions with the discourses affecting teaching. In addition, these changes were also studied in relation to the evolving professional identities adopted by the respondents since the data suggested to me that respondents' professional identities were unstable, yet important, to their subject conceptions (see Section 5.3.2).

## **6.2 Subject Conceptions and Performing 'Good' Teaching**

### *6.2.1 Anna*

#### Drawing upon Subject Conceptions

In Chapter Five, I discussed how Anna had identified herself as a geography teacher who had constructed her concept map as one for *school* geography. Anna also had developed a clear substantive structure of geography around the relationships between people and the environment. In her discussions of how geography should be taught, she made a case for teaching geography 'the right way'. This included ensuring that her students understood

geographical concepts by helping them make links among these concepts. It was clear from her Practicum File documents and lesson plans that Anna had drawn on her geographical conceptions during her Teaching Practice, as well as on her personal understanding of how to teach geography. For example, Anna consistently provided overviews of the content being taught and showed how each lesson linked to other lessons. Anna also drew links across the topics that she was teaching, for example, between earth's rotation, weather, climate and natural vegetation and then connected them to the impact on people.

Although Anna had consciously decided to develop a concept map for school geography and had been strongly influenced by the school curriculum in doing so, she was not necessarily limited by the school curriculum. For example, Anna made decisions to *resist* the national curriculum by going beyond it where necessary. She taught the students about cloud formation even though it was not in the lower secondary syllabus because she 'felt that the conceptual understanding behind that was important' in helping students to understand precipitation. Anna was aware that this confidence to go beyond the curriculum was rooted in her subject matter knowledge of 'What is important, what is not important, how I teach it, my understanding also'.

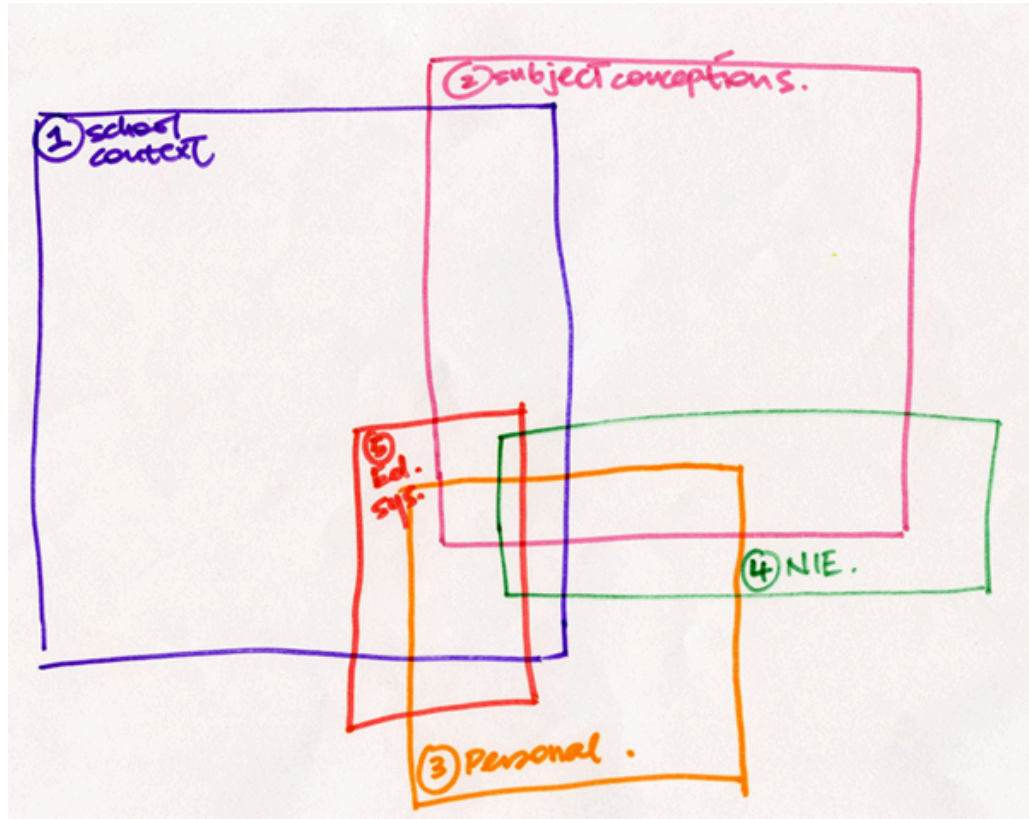
In Section 5.2.1, Anna discussed the importance of fieldwork and experiential learning in her conceptions of geography although she had left it out of her concept map. Recalling the types of lessons that had made an impact on her in the past, Anna expressed the opinion that this style of teaching and learning was superior to an 'armchair' style that

was more commonly adopted in schools. Although teaching by taking students outside the classroom was not mandated by the national curriculum, she took her lower secondary students out of the classroom to learn about where to site weather instruments, and also to observe the trees in the school grounds as an introduction to the topic of *Natural Vegetation*. Regarding the latter activity, Anna felt that it was important to make learning about vegetation 'real'. This involved giving them an embodied experience of the natural environment, where students would be allowed 'to go out of the classroom, let them draw and touch'. When teaching *Plate Tectonics*, Anna constructed jig-saw puzzles for each group of students where the denser oceanic plates were made from plasticine and the lighter continental plates were made of Styrofoam. She then got students to push different types of plates towards each other and to note on a worksheet what would happen to them. Again Anna explained that while this took more time than just lecturing them using PowerPoint slides, she felt it was important to allow them to involve their other senses by 'playing around' with the pieces in order to 'understand first' before the formal terms and teaching were introduced.

In comparing the Practicum File documents with data from the second and third interviews, it seemed that among all the respondents, Anna appeared *most able* to draw upon her conceptions of geography and how to teach it. In fact when I asked Anna to construct a Cultures of Influence (COI) map (discussed in Section 4.4.3), Anna ranked her subject conceptions (which included her beliefs about how to teach geography) quite highly, as the second most important influence during Teaching Practice.



Figure 6.1 Anna's Cultures of Influence Map



### Making Decisions about Performing 'Good' Teaching

Anna's COI map also revealed that the school context was the most important factor that framed her decisions about how to teach geography during Teaching Practice. In Section 3.4, I have outlined the influence that school-based assessors played in determining if a pre-service teacher's performance as a geography teacher was adequate. In trying to appear to advantage to pass the (financially) high-stakes assessment system of the Teaching Practice, Anna was primarily influenced by her Co-operating Teacher (CT) for geography. Fortunately for Anna, there was hardly any conflict in reconciling her subject

conceptions of geography and how to teach it with her CT's assessment of what constituted a 'good' teaching performance.

Instead, Anna discussed the influence of her CT, whom she described as 'awesome' and 'very very good', as one that *facilitated* her use of her subject conceptions. For example, Anna felt that her CT encouraged her to look 'above and beyond the nitty-gritty things' and to teach using the 'big picture'. Anna felt encouraged to draw upon her subject conceptions and stress conceptual links across lessons because 'that was actually something that my CT did'. Anna's CT also allowed her to spend more time on lessons that got students to 'come and discover things for themselves' rather than put pressure on her to rush through the curriculum. She explained that he had tasked her to teach relatively little content during the Teaching Practice period, which freed her to explore different teaching and learning strategies. He also actively encouraged her to take students out of the classroom to allow them to explore their environment while learning geography.

In Section 5.2.1, I also discussed how Anna had assumed the identity of a *geography teacher* who was familiar with the curriculum content and assessment objectives due to her previous experience as a textbook editor. During Teaching Practice, he was cognisant of the school's overall focus on examination results and the pressure to focus on examination skills as part of her performance of 'good' teaching.

Like the first staff meeting that we had, and every staff meeting that I go for, what is always flashed [on the projector] to us is you know the 'O'

level results and then they had to meet a certain criteria so that they can get Gold or Silver [awards], then after three years they can win some award... so that is the focus of every staff meeting.

Here it is clear that the school was influenced by the competitiveness of the national education system in Singapore and the system of awards and incentives that rated schools as 'excellent' or lacking in excellence (Section 3.2). In addition, Anna also made reference to the nature of her students as a key variable in her decision to focus more on students' examination skills, observing that 'the school that I went to, the ability of the students was not very high, so I think in that aspect I really had to just go back to the basics and teach them'. Again, in making these decisions about what constituted a 'good' teaching performance, Anna did not face observable conflict between her conceptions of geography and how to teach it, and this aspect of the school context. For example, she stated that when

I dedicated a certain part of my lessons to skills, or even my whole lesson focused on skills right, then that would help them to understand the topic much more.

She also felt getting students to learn how to interpret questions and write answers in a systematic way would correct their tendency to just memorise the content when they studied for tests, such that they 'just see certain words in the question already they just write everything out and nothing to do with the question'. This resonated with her belief that learning geography by rote learning was not useful in the long run. The data on Anna suggested an alignment among her subject conceptions, past experiences of geography

and professional identity with the Teaching Practice school context. In drawing upon her subject conceptions, Anna experienced little conflict in making decisions about how to ‘perform’ as a geography teacher.

As discussed in Section 2.4.1, ‘performances’ of identity are framed by discourse (Foucault, 1971, 1979) but consciousness of the performative aspects of identities made way for the possibility of transgression and resistance (Butler, 1993; Moore, 2004). In my research, I also argue that this conscious performance of a ‘good’ geography teacher identity can be complicated because of the *conflicting discourses* that a pre-service teacher has to reconcile. In Anna’s case this surfaced in the very different assessments of what constituted a ‘good’ performance of teaching between her NIE supervisor on one hand and her CT /herself on the other. For example, Anna discussed how her NIE supervisor was a stickler for classroom management.

My sup’s stand is that everyone must be seated, bags to the side, sitting up straight, looking to the front, if you want to talk, you raise your hands’.

I think my supervisor had really high expectations. Right down to the T kind, she is very big on classroom control. Cannot lah<sup>6</sup>. In the classrooms that she came to observe, chaos... she didn’t like the chaos.

Anna and her CT both believed, however, that in class, there was such a thing as ‘good noise’ in which students were interacting and making sense of their lessons, which they felt was a more realistic classroom situation. Anna drew upon arguments about the

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<sup>6</sup> ‘Lah’ is a commonly used interjection in Singapore, drawing its origins from an interjection in the Chinese language. It carries slightly different connotations depending on how it is used. In this case, Anna used the interjection to emphasise her exasperation at the unrealistic expectations of her NIE supervisor.

realities of the school context and the nature of the students that she had to teach, observing that ‘in this school ah, really cannot’. As such she felt that it was ‘very very stressful every time I heard my sup was coming down’. However, buttressed by her CT, she reconciled this conflict by placing the NIE supervision visits as something outside of the regular school context. She also framed her decision to teach in ways she was uncomfortable with as putting on stage performances for her supervisor for the sake of passing. For example, Anna quoted her CT who ‘always said, when your sup comes down, *it’s a lights, camera, action kind of thing*. So you have to *doll it up* because it’s your grade’ [italics my own]. Anna described how she

...got a whistle and everything for like when the sup comes. Of course before that I’d train the class with the whistle thing... There was, to be honest, there was definitely a change in the, like how I taught, when the supervisor came.

These performances of ‘good’ teaching, required by her supervisor and rendered important due to the assessed nature of the Teaching Practice, were only temporary. In her other lessons, Anna fell back on her own subject conceptions of geography and how to teach it because ‘I don’t want to make it *fake* [italics my own] and all that’. In this she was again supported by her CT who warned her that it was not necessary to put on such performances otherwise. For example, he told Anna that ‘If you want to do it for every lesson you will die [from stress]’. Anna believed that ‘he was *very realistic* in telling me that’ [italics my own].

The discussion on Anna highlights three points. First, during Teaching Practice, Anna drew upon her subject conceptions to a large extent. This was partly because Anna's subject conceptions had from the start of the teacher education course been oriented towards teaching school geography. In this process, Anna was *supported* by her CT. The importance of this school-based influence can be seen in the COI map as well as in all the other data collected. Finally, where Anna did face conflict in her own assessment of how to teach geography well with that of her NIE supervisor, she framed her compliance as an unrealistic and fake performance, which she endured for the sake of passing. For Anna, consciousness of the performative, and hence 'fake', aspects of 'good' teaching tended to occur only when she was required to make decisions that ran counter to her own conceptions and beliefs about geography and how to teach it well. This implied that in planning her other lessons, Anna drew upon her own conceptions and beliefs about (teaching) geography, and was performing 'good' geography teaching in a way that resided more naturally within her identity as a geography teacher.

### 6.2.2 *Daniel*

#### Drawing upon Subject Conceptions

Among the respondents, Daniel had articulated the most academically-oriented and sophisticated conception of geography (in terms of content knowledge, substantive and syntactic structures). In the first interview he had also stressed the importance of having a broad disciplinary perspective because he could then 'draw upon a wealth of different disciplines within geography' in his teaching. During Teaching Practice, he received feedback written on his Assessment of Performance in Teaching (APT) form from his

two geography CTs (Daniel had one CT for upper secondary classes and another for lower secondary) that his subject knowledge was ‘very strong’.

Unlike Anna, however, the Practicum File data suggested that Daniel had made little reference to his subject conceptions during Teaching Practice. Daniel also commented that ‘as much as [he] would like to think that some of these higher-level links undergirded [his] teaching, it didn’t, it really didn’t’. This appeared to be exacerbated by elements within the school context. Like Anna, Daniel did his Teaching Practice at a ‘neighbourhood’ government secondary school where the students were generally considered of average or below average academic ability. This was an impediment to Daniel’s use of his subject conceptions because he found it difficult to engage his students in thinking about the links and approaches in geography, commenting that there was

...a disjunction between what I want to teach and what the student needs to receive... Sometimes you can pitch a lesson at very critical, very high level thinking skills, but at that time what the student really needs is perhaps more scaffolding before they can come even to that point.

Daniel felt that in his Teaching Practice school, the ‘reality on the ground’ is that these ‘are weaker students, less able to make links’. As such, Daniel spent a lot of the time just planning ‘the content that had to be delivered’. He also explained that his students had a poor command of the English language, and therefore a lot of time was spent on ‘breaking down a topic’, and helping his students to understand ‘the meaning of geographical terms’.

Part of Daniel's conceptions of geography involved using constructivist methods of teaching and learning. For example, prior to Teaching Practice he stated that

I think I really subscribe to the constructivist notion of knowledge... knowledge construction. Like sometimes you cannot give the students answers and they have to have a little bit of dissonance, a little bit of disequilibrium at the beginning, and then when they have an aha moment, this information will be in. I believe that is much better than me telling them things.

Daniel had also discussed how a 'good' geography teacher would be unstinting in taking students out to the field to give them an 'embodied' experience. However, in examining his lesson plans, it was evident that Daniel had relied mainly on lectures and other teacher-centred pedagogical methods, and on the use of the prescribed textbooks and workbooks. He had also not planned any field-based activities for his students. Daniel explained that this was partly because his CTs for geography were not supportive of his venturing away from the lecture format during lessons.

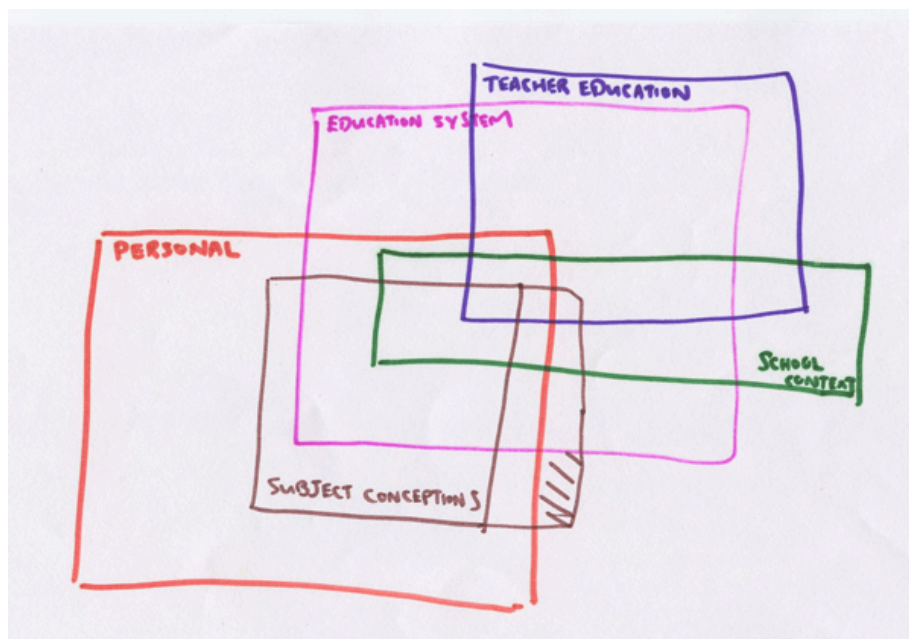
They come into the classroom with fixed ideas about how a lesson should be carried out... I was given express instructions also to just follow the textbook, quote unquote, just follow the textbook.

Here Daniel's experience was in contrast with Anna's. While Anna's CT supported and encouraged her preferred approaches towards teaching and learning geography, Daniel found his beliefs about how to teach geography at odds with what his CTs expected of him. For example, he commented that 'I don't think they subscribe to any notion of dissonance. If the students look confused, that means we are not getting through to them'.



In addition, Daniel also discussed the large amount of content he had been tasked to teach as a reason why he often resorted to using lecture-style teaching methods. It therefore appeared to me that Daniel did not draw upon his conceptions of geography and how to teach it because of discursive structures within the school context. In his COI map (Figure 6.2), Daniel therefore ranked his subject conceptions as relatively unimportant.

**Figure 6.2 Daniel's Cultures of Influence Map**



### Making Decisions about Performing 'Good' Teaching

However, it was surprising that Daniel ranked the Teaching Practice school context as the *least* important (see Figure 6.2) influence on his decisions about how to perform 'good' geography teaching. Instead, Daniel held to a belief that his personal context was the most important, followed by the national education system. In discussing this COI map, Daniel observed that

First of all I think the largest and most significant influence has to be personal... influenced partly by the education system which I experienced, coming from a background where I was in the Gifted Education programme, scholarship from MOE.

The prominence of his personal experience and the elite education he had received versus his relegation of the school context as unimportant in his COI was baffling since it was in direct conflict with the data from his Practicum File as well as with his earlier interview data. In fact Daniel himself had discussed the limitations he faced in the classroom because of his students' academic and language abilities as well as his CTs' explicit influence over the ways he taught his lessons.

Perhaps I might have persisted, but in my Practicum [Teaching Practice] where *people are observing and critiquing*, when I did something experimental, often it did not go down well with the observer, if it did not capture the class' attention. But it would have taken time to get their attention anyway, but the times when it was observed and it happened, I penalized myself. Rather than go down that route and be in danger of failing my Practicum, *it was more practical* for me to revert to more conventional options [italics my own].

While the statement above supported the notion that his CTs were a large influence on the decisions made about whether to draw upon his subject conceptions and beliefs about how to teach geography, it also belied a certain *resistance* to this influence. Daniel made it clear that it was only the exigencies of the situation that had compelled him to accept that particular style of teaching. In fact in reviewing the data, I also perceived a thread of *conscious resistance* on a number of occasions. For example, Daniel challenged his CTs' rejection of creating cognitive dissonance as a teaching method.

*It's debatable* because if they [students] are not sure about something and they are not challenged to find out for themselves, they will perpetually look to you for answers. [italics my own]

Daniel also recounted other incidents of explicitly resisting his CTs. Daniel's lower secondary CT expected him to 'be very animated and very energetic and excitable in class' (perhaps drawing upon the discourse of the 'charismatic teacher' described by Moore, 2004) and was not pleased when Daniel did not emulate this performance because Daniel believed it was 'a personality thing' and hence not an integral part of 'good' teaching. His other CT was concerned with 'making sure that discipline was enforced to the wire', which included students having to stand to give answers. Daniel stated that he 'did not like that' because it was not 'conducive for participation'. He also recalled an occasion where he was criticized for not being 'open to correction' on a conceptual issue, when he believed 'the correction was wrong'. Finally, Daniel also suggested if students were not initially responding well to his lessons, it was not that the students were 'unable, but that they were not yet able'. Daniel believed that with time and with more 'scaffolding', they would be able to eventually appreciate his approach towards teaching geography and his desire to focus on geography's substantive and syntactic structures rather than just school geography content. He referred to comments made by a few students that he had 'changed the way they see geography' as proof of this.

This tension between performing a teacher identity that resonated with his own subject conceptions and beliefs and one which would be favourably assessed by his CTs was concisely captured by Daniel himself. He suggested that 'I sometimes felt that I was

being untrue to myself, like I was being forced into being a poorer educator than I wanted to be'. That Daniel felt he had been pushed by discursive structures into a performance of geography teaching that felt both false and uncomfortable was clear from the above quote. It was perhaps this consciousness of the inauthenticity of his teaching performances that caused him to disassociate himself from the Teaching Practice school context and focus on his personal context in his COI. This was also illustrated when Daniel stated that many of the teachers in the school context were unhappy about the *Thinking Schools, Learning Nation* initiatives discussed in Section 3.2. Daniel took pains to divorce himself from these colleagues, explaining that 'it's a world out there for me... teachers that are disgruntled. This is divorced from me.'

In his struggle to reconcile his own conceptions of 'good' geography teaching with that of his CTs, Daniel found a source of support in his NIE supervisor. He referred to the APT forms filed by his lower secondary CT and his supervisor when they observed the same lesson. His CT consistently gave him a poorer grade than his supervisor. He recalled his supervisor had 'stepped in to mediate' and told him 'don't worry, you are not as bad as this feedback form makes you out to be'.

In summary, Daniel's conceptions of geography could not be drawn upon to the same extent as Anna's had. However, Daniel remained confident that if he had the time, his students would eventually be able to understand and appreciate his conceptions. Daniel's case also stood in stark contrast to Anna who had easily embraced the school context and the influence of her CT partly because she experienced little conflict between her

conceptions of geography and how to teach it during Teaching Practice. The clash between Daniel's beliefs about geography and how to teach it with his CTs' led to a complex interplay of both acceding to as well as resisting them in his decisions. The inauthentic performances Anna alluded to for her NIE supervisor's visits applied to Daniel's case to a larger extent. While Anna could fall back on what she felt was a more comfortable and natural performance of 'good' teaching for most of her Teaching Practice, Daniel had felt compelled to perform his identity in ways that were at odds with his subject conceptions and his identity as a geographer as well as an educator. This tension was perhaps reflected in his COI map, where he sought to distance his performances of 'good' teaching from the school context.

### *6.2.3 Baozhu*

#### Drawing upon Subject Conceptions

Prior to Teaching Practice, Baozhu had constructed a concept map of geography that drew from academic geography perspectives to a large extent and discussed how these spatial perspectives had informed her daily life. This identity as a geographer also sat alongside her identity as a geography teacher, which surfaced during the photo elicitation exercises where she used school geography content as a basis for ranking photographs as 'more' or 'less' geographical. During Teaching Practice, Baozhu admitted to teaching mostly school content rather than the more academic geographical perspectives she had discussed even though she found the geographical perspectives outlined in her concept map 'quite meaningful'. For example, she stated that during Teaching Practice she 'didn't really remember this map' and that even if she did apply her conceptions, 'it's

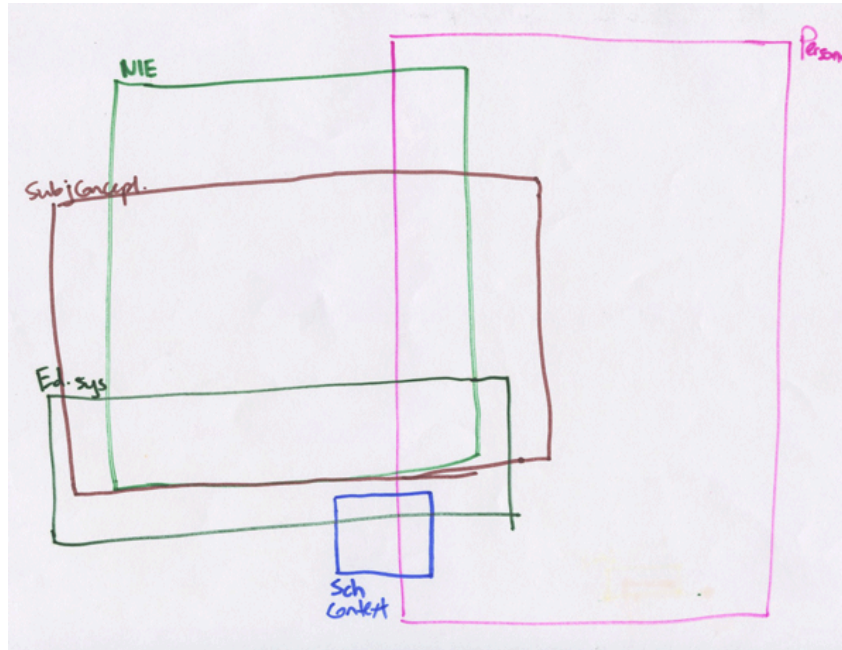
subconsciously'. When discussing her Practicum File documents, she explained that she generally planned her lessons around 'what students need for exams'. As such, Baozhu took into consideration what the Head of Department and Subject Head 'think geography should be as well'. This was because their opinions 'would affect the way that exam questions were going to be set' and if she did not fall in line with these, she would be 'short-changing the students'.

Baozhu did not conduct field-based activities for her students even though she felt that geography teachers should be willing to get dirty and immerse themselves in nature. This she attributed to the fact that 'fieldwork would not be set for school exams'. However, unlike Daniel, Baozhu did not teach using teacher-centred lecture-style approaches either. Instead Baozhu's lessons reflected the consistent use of games and classroom activities to engage her students in learning geography. For example, she got students to mould plasticine when teaching them about contours. She also held 'game show-style quizzes', observing that this was a good way to teach because her students 'get excited over the games and they are all very enthusiastic'. This was consistent with her argument that the key to learning geography was to get students 'interested in the subject' because 'once they are interested, they will probably go out and find out more by themselves'. This belief was drawn from her own past experience as a student, where she sought to learn more about geography through documentaries and books after developing an interest in the subject.

I also discussed Baozhu's passion for conservation issues in Section 5.2.3. Even though the affective domain was generally not stressed by the other respondents, a commitment to inculcating the *Values* she believed in was reflected in her lesson plans. Baozhu articulated the need for students to 'be more emotionally involved' in caring for the environment and therefore made a conscious decision to spend time 'on the values part'. In her lesson plan on *Deforestation*, Baozhu got students to work on posters where they had to reflect on how they *felt* about the issue. This was because she wanted them 'to personalise what they have learnt and also to be given a chance to voice out how they feel about this deforestation, and in a way to also play a part'. She recalled feeling 'quite proud' of the work of one of her classes because 'somehow I feel that they feel more for the issue. If you look at the posters, you can tell they feel more for the issue'.

Therefore while Baozhu had left out aspects of her subject conceptions (like the more academic spatial perspectives) during her Teaching Practice in favour of examinable school geography content, she also drew on those parts of her conceptions which resonated with her own personal experiences of geography. These included a commitment to developing affective dimensions like an interest for the subject as well as environmental values. The importance of the personal context relative to her articulated subject conceptions in her decisions about how to perform 'good' geography teaching is reflected in Figure 6.3.

**Figure 6.3 Baozhu's Cultures of Influence Map**



Making Decisions about Performing 'Good' Teaching

Baozhu appeared to occupy a position somewhere between Anna and Daniel in terms of the extent to which she drew upon her subject conceptions during Teaching Practice. While it would be easy to simply correlate these conceptions with the degree to which their concept maps corresponded with school geography content, I argue that it would be simplistic because it ignores other important discursive factors that also affected these relationships. For example, if Anna had been posted to Daniel's school, she might not have been able to draw upon her conceptions of geography as a subject that should be taught in an embodied and experiential manner. Similarly, Daniel might have had the curriculum time needed to scaffold his students' learning such that he could have shared how the larger geographical perspectives were relevant to their daily lives.



In examining the discursive factors in the school context that influenced the extent to which Baozhu drew upon her subject conceptions, I found that for Baozhu, the school context did not appear to have influenced her very much. This was supported by her COI map which ranked the school context as least influential. Mostly this was because she felt that her CTs ‘were very kind, they let me do whatever I want to do’.

I think when I was teaching my Practicum, I’m not really affected by the school context at all. Like *I have free reign to do whatever I want*. I don’t really feel the pressure from my CTs.

Additionally, Baozhu observed that her CTs did not ‘interfere’ in her lessons, and often would not even attend them. Baozhu even commented that one of her CTs

...was rather lax... more lenient, he didn’t expect much for the lesson plan and he hardly came in for my lessons also. Even for observations right... he’ll just come in for a while and leave.

Baozhu also did not make reference to the ability of her students, nor did she discuss the school culture, as *constraining* factors that she had to reconcile when making decisions about how to teach geography. This was despite the fact that she was teaching, like Anna and Daniel, in a ‘neighbourhood’ school. Perhaps this was linked to the school culture she found herself in. Her school had a policy of ‘restorative discipline’, which was in tandem with the school’s focus on counselling and its motto of ‘healthy and happy students’. Unlike Anna’s and Frederick’s schools, where the focus of staff meetings was how to improve the school’s ranking through improved examination performance, the teachers in this school shared how they used restorative discipline methods successfully with the students during staff meetings. Apart from an awareness of examinable content

and the need to teach students that, Baozhu expressed a level of freedom from the stress of competitive examinations that the other respondents appeared to have had to negotiate. Therefore it was not so much that the school context did not matter, but more that the discursive structures in the school provided a context which allowed Baozhu to draw upon the things that mattered to her in performing as a ‘good’ teacher.

One source of conflict that did occur during Teaching Practice was a difference in the assessment of what constituted a ‘good’ performance of teaching geography between her NIE supervisor and herself.

My supervisor is quite an old lady. She has been teaching for about maybe forty years already, and she’s retired. So I think her concept of what a lesson should be is different from mine. She would want to see more concepts and content to be put through to the students. Whereas for me right, for me I think it’s more important to get the students interested in the lesson, in the topic.

Like Anna, Baozhu also reported that her NIE supervisor was ‘less tolerant of a bit of noise’ than she was, which Baozhu attributed to her supervisor being out of touch with the realities of the current school context and having more old-fashioned opinions regarding classroom teaching. As such, Baozhu reported having to put on a ‘fake’ performance for the benefit of her supervisor as well.

I really felt that *she had the upper hand*. When she came, I just did what she wanted. I stood at the front and delivered the, just the content. She told me my voice was too soft, she said I was too friendly, so I made sure I really almost shouted during observations, that she can hear me... I even wore dark clothes and dark lipstick... *to try to appear older, like older and more fierce*. [italics my own]

Baozhu, like Anna and Daniel, perceived that the balance of power was against her when it came to whose opinion mattered when it came to ‘good’ teaching. Like them, she also made decisions to perform a teacher identity that felt unnatural in order to pass her Teaching Practice. The inauthentic performance also included adjusting her appearance. While the other respondents all alluded to the importance of looking professional and dressing smartly for work, Baozhu was the only one who described trying to look older and less approachable in her perception of what might please her supervisor. However, on balance, Baozhu believed that these visits were ‘only sporadic’ and most of the time, she was able to carry out lessons that drew upon her personal beliefs about geography – performances of teaching that engaged the students and inculcated environmental values.

#### *6.2.4 Frederick*

##### Drawing upon Subject Conceptions

I discussed how Frederick’s concept map had been largely oriented around school content but that he had consciously done this due to his identity as a *geography teacher*. Frederick also alluded to the ‘big picture’ of geography which focused on the complex interrelationships that shaped each landscape in unique ways, which he felt was essential to geographic training (Section 5.2.4). In articulating his subject conceptions, Frederick noted the influence of his personal context. For example, he stated that ‘is a lot of overlap with my subject conceptions, like my personal interest and reading about nature and geography documentaries and all that’.

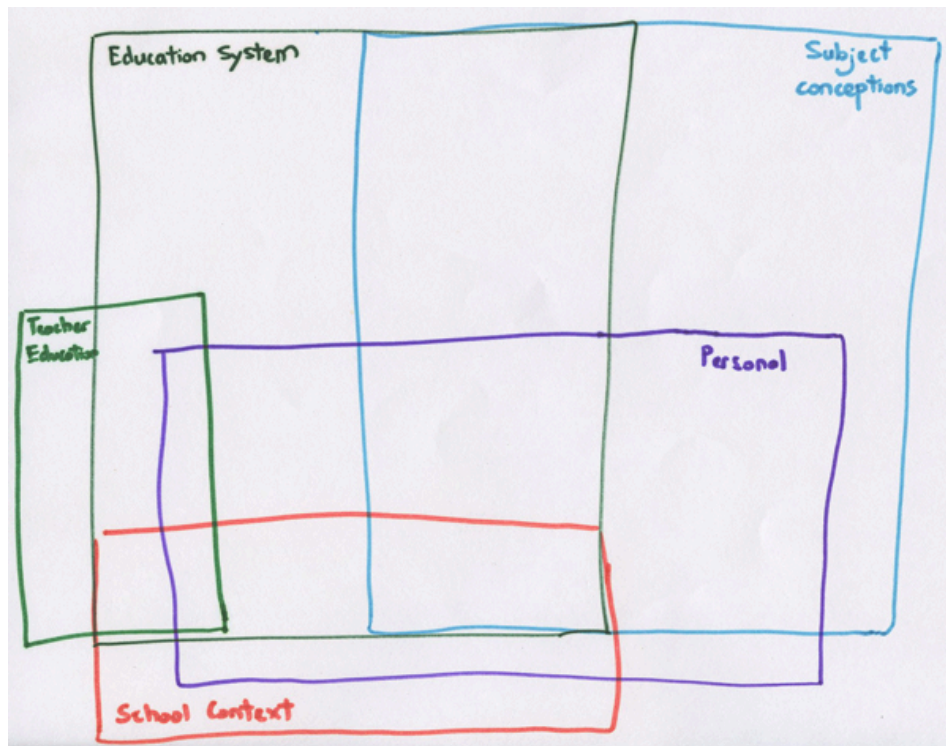
In his lesson plans, there was evidence that Frederick did apply his understanding of geography as a complex web of interrelationships among Human and Physical processes and phenomena. He made explicit these links across different topics and lessons, explaining that he ‘wanted them to see that the chapters did not exist in isolation, that it was part of a broader perspective... dependent on a lot of related factors’. For example, Frederick tried to relate the topic on *Land Resources* to what he had taught students in both *Agriculture* and *Population*.

Across his lesson plans, it was also obvious that Frederick had made a concerted effort to use images and maps, which he had earlier indicated was important to geography and geography teaching. Of note was an incident when Frederick dedicated an entire weekend visiting branches of the National Library all over the island to borrow copies of a book featuring aerial photographs for his students to use in class. On that occasion he even had to ‘take a taxi to school’ as in order to carry out the lesson, he had to lug ‘one big bag, my laptop and my file’. The importance of his subject conceptions to his decisions about how to teach geography was also reflected in his COI map (Figure 6.4).

Like Anna, a concept map that was from the first adapted to teaching school geography made it easier for Frederick to utilize his conceptions in his teaching. This accounted for why both his subject conceptions and the national education system appeared to be equally influential in his COI. Frederick reflected that the national education system in Singapore ‘determines what I need to teach in each year and what I should teach... the

content'. This was one reason why although Frederick felt that learning geography through fieldwork was important, he had omitted to do so during Teaching Practice.

**Figure 6.4 Frederick's Cultures of Influence Map**



Making Decisions about Performing 'Good' Teaching

In many ways Frederick's experience of Teaching Practice was similar to Anna's. Frederick found that he could draw upon his subject conceptions to a large extent and that this was supported by the school context. Within the school contexts however, the facilitating factors were different. While Anna's CT was the main reason why she could use her own conceptions of geography and how to teach it when making decisions about performing 'good' teaching, for Frederick it was the academic ability of his students. Frederick recalled that the elite boys' school he had been posted to tended to be 'very

results oriented so in a sense they are still very much basing students' performance on grades'. He observed that during the

...first [staff] contact time before the term started and straight away the Principal started talking about results... talking about the 'O' levels, like getting the Sec Fours into shape for the Prelims, and showing the results.

As such he faced a very 'heavy curriculum load' and great pressure to teach to the test. However, Frederick felt that he was still able to 'find the time to fit in my subject conceptions and stress conceptual links' because the academic ability of his students allowed him to 'get more across to them'. He also leveraged on the fact that these boys were 'diligent and would do the assigned work'.

Frederick did not feel that he faced conflict in his own assessments of a 'good' teaching performance and that of his mentors. For example, although he himself believed in making conceptual links clear for his students, he felt he had also 'picked up a lot of tips about how to make sure students were understanding' from observing his CT's lessons. At the same time his focus on using maps and images as a means to teach geography met with his CT's approval as she felt that 'these boys need to be challenged' and that by just lecturing them 'you will lose them. These are bright kids, teach them creatively'. Here, although Frederick's CT encouraged him to use his subject conceptions, the situation was different from Anna's. Anna's CT supported her efforts to teach in less conventional ways (within the Singapore education context) even though her students were less academically able because he too advocated constructivist and experiential approaches as the best ways to teach geography. In Frederick's case, drawing upon his subject

conceptions suited his CT's perceptions of how to teach academically more gifted students. In this instance, *the perceived academic ability of the students* was the more important school-based influence. Frederick also enjoyed an encouraging and supportive relationship with his NIE supervisor, whom he described as 'very nice' and 'very reassuring'. While his CT was sometimes brusque and demanding, he found his supervisor was 'more forgiving towards trainee teachers ... he said because trainee teachers are still very rough around the edges' and was therefore inclined to be less critical of their lesson plans and classroom decisions. This difference was seen in the generally higher grades he received from his supervisor in the APT forms.

In summary, Frederick drew upon his subject conceptions to a large extent during Teaching Practice. This was partly because he had already oriented his conceptions towards the national curriculum for geography. However, Frederick was also able to draw upon his subject conceptions because of two other factors. First, although he had to teach a lot of content and focus on examinable outcomes, the academic ability of his students allowed him to also plan lessons that explicitly drew links across topics and concepts. The convergence between his own assessment of what constituted a 'good' geography teaching performance and that of his mentors also facilitated this. Unlike Daniel and to a lesser extent Baozhu and Anna, therefore, Frederick did not report conflicting demands and expectations of his teaching performance from these parties.

### 6.2.5 Eddie

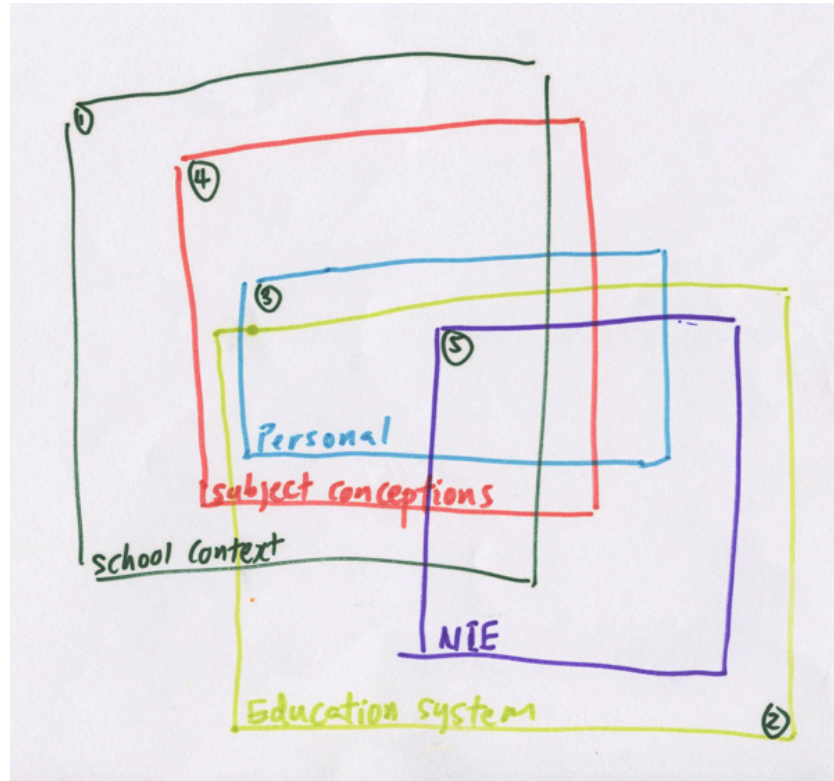
#### Drawing upon Subject Conceptions

Eddie, like Anna and Frederick, had developed a concept map (Figure 5.5) that was ‘mainly about the interaction between the Human and the [Physical] landscape’. However, unlike Anna and Frederick who deliberately chose to frame geography in this way but who also were able to talk about geography using other perspectives, Eddie’s conceptions appeared to be limited to school geography and to his experience of teaching it. In this sense therefore, Eddie’s conceptions were suited, but limited, to teaching school geography. In examining his Practicum File, it appeared that human-environment relationships did form the core of all his lessons and Eddie placed a lot of emphasis on how this type of geographical information was relevant to his students in his lessons. However, it should be noted that Eddie had been tasked to teach lower secondary geography topics on different types of environmental issues like *Deforestation*, *Pollution* and *Global Warming* – topics which lent themselves quite easily to a focus on man’s relationships with his environment.

Eddie’s COI map and interview data provided insight into the extent to which Eddie was *consciously* drawing upon his subject conceptions when teaching geography during his Teaching Practice. In his COI map it was clear that Eddie’s subject conceptions were relatively unimportant compared with the school context (Figure 6.5).



Figure 6.5 Eddie's Cultures of Influence Map



In addition, Eddie also stated that

...subject conceptions, I would think it's a lot based on the school context... geography paradigm is how geography is being run, the HOD runs the school [subject]. My subject conceptions is *according to the school wants it to be taught*, according to SOW [scheme of work] content... mainly I am the person *who delivers* these things. [italics my own]

The quote above recalled the impression given in Section 5.2.5 that Eddie had not positioned himself as either a geographer or a geography teacher but seemed instead to view himself as a teacher who had to deliver geographical content. As stated in the first interview, Eddie believed he could just as easily teach any subject content in the school so long as he could 'brush up' on what someone else in authority wanted taught. The

school's interpretation of the geography curriculum in the form of its schemes of work was therefore more important to Eddie than his own subject conceptions.

### Making Decisions about Performing 'Good' Teaching

Eddie also explained that the heavy curriculum load and lower academic ability of his students had direct impacts on his decisions about how to perform as a 'good' geography teacher. In all of his lessons, Eddie lectured while his students made notes using a template he had provided. This template rarely varied across lessons and each focused on the causes and consequences of a particular environmental problem, provided examples of each, and the possible solutions to the issue. Eddie explained that this strategy 'save time... I got time constraint'. He also believed that his students could not take in too much information at one go and he therefore had to be 'exam oriented... I tend to shift towards the important points for the students to know in exam'. There was also a consistent use of maps and other types of data sources across all of his lessons. Unlike Frederick, Eddie did not do this because he felt that maps and images were central to geography as a discipline but because

...in my school, the data and map reading results is always very bad, so I want to bring in map reading, because it is with them for four years [of secondary education], so it's also a very practical reason, for exams'.

When making decisions about what constituted a 'good' performance of teaching, Eddie was therefore less concerned with foregrounding disciplinary knowledge and perspectives but with what mattered for the examinations. As such, Eddie was primarily influenced by

the school context and the national education context which focused on examinations in his curricular and pedagogical decision-making.

Eddie also stressed that a 'good' performance of teaching involved maintaining control over his students in class. He observed that they were

...playful, they cannot write a proper sentence... their mood swing is very tremendous. Today they can be very happy class, and tomorrow very quiet class... they are completely random, their behaviour. Today they can be very good kids, tomorrow they can just punch somebody.

He therefore felt that it was a priority to manage these potentially rowdy and unpredictable students. In fact, he stated that 'you know so much geography also no use if you cannot control the student. They won't listen to all your talking'. This observation was based on his own personal experience as a 'neighbourhood school kid myself'. Eddie took pride in being able to manage his classes well, stating that 'I scold them, but don't know why they are still ok with me. Maybe the way I scold them, I don't shout'. This allowed him to 'deliver the lesson fairly easily' as 'during the class they are more or less quite disciplined'. Eddie's CT supported his decisions to prioritise examination content and classroom management as key elements in his lessons and generally left him to manage his lessons as he saw fit.

Frankly speaking she don't quite tell me what to do, she just leaves me to do. Then she will just come, observe the lesson and say 'mmmm... ok'.

This was further buttressed by his NIE supervisor who was impressed by his management of the ‘noisiest class in the school’ when she came down for a school visit and gave him a good appraisal in this area of the APT form. In addition, Eddie reported that she also approved of Eddie’s teaching style

...my lesson got no special thing, no fancy IT stuff, but... She said that my objective is very clear and I lead the students to my objectives, so it’s very well-planned. Don’t need to have all those IT stuff, *no need to try to impress* or whatever. I’m not that type of person... *I don’t do extra things to try to look good* or whatever. [italics my own]

Here, Eddie referred to his teaching performance as one that was grounded in clarity and simplicity, eschewing inauthentic or showy performances which he felt were unnecessary to ‘good’ teaching. The belief that this was a ‘good’ way to teach appeared to have been shared by his mentors.

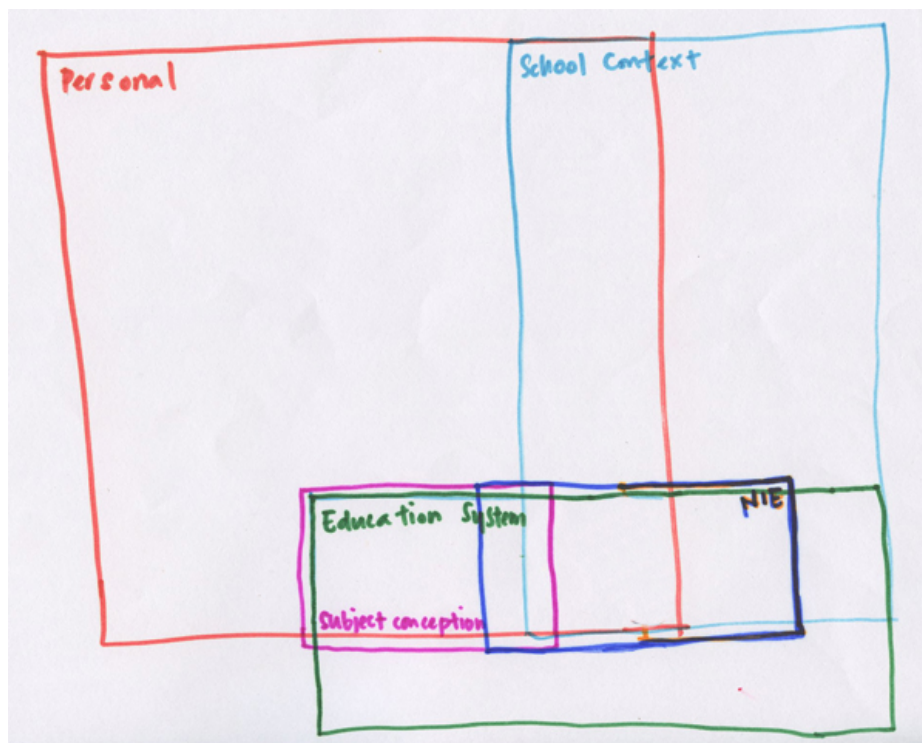
In summary, Eddie was less concerned with teaching *geography* well, but with teaching *whatever content* he had to well. He was therefore guided by the school’s schemes of work in deciding what to teach rather than his subject conceptions. In deciding what constituted a performance of ‘good’ teaching, Eddie focused on teaching to the test and on maintaining classroom discipline in a firm but positive manner, drawing upon his own past experience as a ‘neighbourhood’ school student in doing so. In this, he did not face any conflict with his CT or his NIE supervisor.

### 6.2.6 Catrina

#### Drawing upon Subject Conceptions

In Section 5.2.6, I discussed how Catrina had only just begun to consider geography as a discipline with central organising understandings and perspectives rather than as a piecemeal assortment of content learned at school and university. Unsurprisingly, when discussing its influence on her lesson planning, Catrina ranked her subject conceptions as least influential (Figure 6.6) because ‘for me it’s like still have a long way to go in terms of subject conceptions’.

**Figure 6.6 Catrina’s Cultures of Influence Map**



In addition, Catrina also suggested that during the Teaching Practice, she focused only on teaching whatever content she had been assigned, and there were few opportunities to look at geography's substantive structures and links in such a short period of time.

Maybe it's like I didn't plan it like a long term thing. I was given whatever lessons to do, so I just did it on a daily basis, I did not plan on a longer scale and say that this topic links with this topic... if it were a longer practicum or if I were the permanent teacher, maybe I could make the links. But I did not have the opportunity I guess.

The lack of time to both develop her substantive structure and apply it across topics (given the time limit of ten weeks for Teaching Practice) were cited as reasons for why geographical understandings were not important components of her decision making.

#### Making Decisions about Performing 'Good' Teaching

Looking through her Practicum File, it was clear that Catrina relied mainly on the prescribed textbooks to guide the sequence and content of her lessons. She explained that this was because as a teacher, it was necessary to 'work towards the exam ... so that's how we move... no unnecessary things, we have to teach according to what the syllabus wants. So you are *actually controlled*' [italics my own]. This suggests the importance of the national curriculum to her teaching (compared with her own subject conceptions), and like most of the other respondents, this discursive pressure was perceived as filtered through the school context. Catrina for example, cited the exam-focused nature of the elite all-girls' school that she had been posted to.

Because the school had high ability girls right, and they are so proud of their history and their elite place, so must do well in exams or it's like you know, very terrible. So the pressure is there... we need to get them ready for exams.

Two other features in the school context that framed Catrina's decisions about how to perform 'good' teaching were the preferences of her students and the influence of her CT. Catrina stated that she had initially been 'quite excited to try some of the things we learned at NIE – you know, about using co-operative learning and jig-saws and all that'. However, these attempts had not been successful partly because the students refused to co-operate, and partly because her CT disagreed with the ways she had organised group learning. Catrina reported that the students in the school were 'not keen on group work that kind of thing' and that they 'didn't want to waste time' and asked her to just lecture and let them 'copy' from the slides. This was because these academically high-achieving students perceived such activities as not useful to helping them do well in exams because 'the questions in exams are very straight forward and still textbook-based'. This attitude partly stemmed from the fact that 'the other teachers are also not doing it'.

Catrina further explained that during her Teaching Practice, her CT also expected her to focus on 'just lecturing, PowerPoint slides, text-book based, nothing to do with creativity, nothing to do with student-centred and all'. She discussed feeling rather intimidated by her CT, describing her as 'very experienced and very knowledgeable and, you know quite stern and fierce. Everyone listens to her in the school'. Catrina referred to an instance where she disagreed with her CT's methods of checking for understanding, referring to it as 'old-school'.

...she likes to question a lot. The kind that makes you, like ok, she's going to be calling me next you know? She'll call each and every one of them to answer. I don't think that is good because I'll be scared... You know when I saw her doing it, I was thinking it was scary for the students lah... I had a teacher once like that and I didn't really like her.

This CT pushed Catrina to check for understanding in the same way. Catrina recalled that she 'emphasised a lot on my questioning technique. She got me so frustrated'. However, because she felt 'quite unsure and demoralised' about her own teaching performance, Catrina coped by doing as her CT demanded, but which did not sit comfortably with her own personal preferences. For example, prior to Teaching Practice, Catrina discussed how she herself had only been interested in the subjects taught by the teachers she liked as a student. She therefore stated that developing rapport with students was the key to 'good' teaching. However, during Teaching Practice

...I knew it [rapport] was not important anymore. It's not important to care whether they like you or not. I had to be firm and I wasn't trying to be extra nice at all. It's just the way it is, like what my CT told me lah.

Additionally, it became clear that Catrina had some difficulty fitting into the school context and establishing rapport with the staff and students. This was because Catrina, like Eddie, had come from a history of 'neighbourhood' schools. This distinction between a 'neighbourhood' school and the school she had been posted to was one that even the school stressed. For example, Catrina cited a staff meeting where new teachers 'were reminded that we really shouldn't scold our students... we cannot be like how we can be in a neighbourhood school'. Catrina further discussed feeling like a 'perpetual lost child' in the staffroom, explaining that



...there's so many old girls [alumni in the staff], you can laugh with them but at the end of the day you know, there's a bond between them. You know they've been there... a lot of teachers are old girls too, some of the teachers taught the teachers, that kind of thing. So I don't know... it can be a bit...unless you have your own clique.

The isolation that Catrina reported was not alleviated by her interaction with her NIE supervisor either. Catrina felt that her NIE supervisor was not particularly supportive or helpful during her Teaching Practice 'because he really criticized everything... Nothing good about it at all'. She described how he was very critical of the ways she had organised her class to do group work, which was also evident from the APT form he submitted. Catrina reported feeling that he 'wanted to make me cry'. This further eroded Catrina's confidence in using student-centred techniques and reinforced the pressure she already felt from her students and CT to use a lecture-style format for her lessons and to focus on examination content.

However, to attribute all of Catrina's teaching decisions to the externally imposed discursive pressure would be inaccurate. In her interviews, Catrina herself repeatedly commented that she believed group work was too time-consuming, 'the things you can do is very limited. Instead of teaching the whole topic, you can only go through one part of the topic'. She also perceived a mismatch between the learning outcomes of teaching using student-centred constructivist methods and the outcomes tested in examinations, explaining that when preparing students for exams

...really no need to do all that group work and student-centred... They will do well, better maybe, if we just teach, you know, focus on using PowerPoint and practising worksheets.

In this sense, Catrina was also drawing upon her own experiences of learning geography, where she neither had to understand geography as a discipline, nor learn about geography in a constructivist manner, in order to do well enough to be a geography graduate. This alignment between her own perceptions about what was needed to learn geography (to pass exams) and the discursive structures in the school context ultimately led her to decide on a performance of geography teaching that was ‘more conventional and safer lah’. In discussing her COI map, for example, Catrina also stressed that ‘my own personal experiences, my background as a student... these things did affect my teaching a lot’.

In summary, Catrina did not draw upon her subject conceptions during her Teaching Practice for three reasons. First, Catrina felt that she had not developed a coherent substantive structure for geography that she could draw upon during Teaching Practice. Therefore, she focused on teaching only the content she had been assigned to teach. Catrina also had not articulated any particular beliefs about how geography should be taught (see Section 5.2.6). When discussing the influences on her classroom performances, geography as a subject was less of a consideration than acceding to discursive pressures in the school context that pushed her to perform geography teaching in more conventional ways. The isolation she felt within the school and the criticisms from her NIE supervisor also reinforced this decision to eschew student-centred approaches, and teaching to fit in with her CT’s preferred approaches. Finally, it appeared to me that Catrina herself felt that a focus on examinable content, delivered through teacher-talk, was a good enough performance of teaching. This was due to her own personal experiences of learning geography as a student.

### **6.3 Discussion**

Several themes emerged from the data regarding whether respondents drew upon their subject conceptions when making decisions about what and how to teach. These included the extent to which the subject conceptions they had articulated were easily applied to school geography, and whether the discourses within the school context supported or hindered them from drawing upon their conceptions. At the same time, when respondents were compelled to perform ‘good’ geography teaching in ways that were contrary to their own conceptions, they complied on pragmatic grounds but articulated their resistance through framing the performances as ‘inauthentic’. I elaborate on these observations below.

#### *6.3.1 Subject Conceptions and Discourse*

In Chapter Five I discussed the subject conceptions of the respondents and suggested that some respondents had articulated conceptions that lent themselves to school geography more easily than those expressed by others. For example, both Anna and Fredrick had discussed conceptions that were framed around the national curriculum, and to a large extent, they were able to draw upon their subject conceptions during Teaching Practice. On the other hand, Daniel who had discussed a largely academically-oriented conception of geography did not draw explicitly on his subject conceptions during Teaching Practice. Baozhu similarly felt that the components of her conceptions which were framed in terms of spatial perspectives had little influence on her lesson planning.

However, such a simple mapping of subject conceptions to practice masked, as I have earlier suggested, other salient factors that also affect this relationship. For example, while Anna had organised her content around school geography, she would still not have had the luxury of time to plan and conduct fieldwork had her workload been heavier, as in the cases of Frederick or Eddie (who taught the entire year's geography curriculum in the ten weeks of Teaching Practice). In fact the data also suggested that such superficial correlations would be misleading. For example, Eddie's subject conceptions were limited to his knowledge of school geography, and on the surface, the Practicum File documents suggested that his conceptions were therefore very important to his lesson planning. However in the COI mapping exercise, I found that this was not the case. Instead it was the school context – the school's interpretation of the national curriculum as well as the type of students in the school that were the key influences. In fact, for most of the respondents, the school context appeared to be very important. Even when they referred to the national education context – the curriculum or the examination system – this tended to be interpreted or mediated through the Teaching Practice school context.

### *6.3.2 The School Context and the Role of the CT*

Most of the respondents made reference to three main influences on their performances of 'good' teaching and whether these linked to their subject conceptions: the culture of the school, the ability of their students and the influence of the CTs. Of these, the data suggested that it was the CTs that were the most important influence regardless of the type of school they were posted to for Teaching Practice. My respondents had been posted to both elite as well as 'neighbourhood' schools, and the school cultures also

differed within these types of schools. For example, both Anna and Daniel reported that their 'neighbourhood' schools were largely focused on examination performance to improve their rankings and that their lower ability students had problems expressing themselves in English. However, Anna was able to draw connections across the different topics she was teaching, and was free to include content that was outside of the curriculum when she felt it helped students' understanding. She was also able to teach geography using fieldwork and other types of experiential learning. In contrast, Daniel reported that the school context and the ability of his students circumscribed his ability to draw upon his subject conceptions as well as affected how he taught geography. Both Frederick and Catrina had been posted to elite schools, but while Fredrick could challenge his students by emphasising map-reading and photo-interpretation skills, and made connections across topics at the same time, Catrina reported being told to stick to lecturing the textbook content with PowerPoint slides.

In each case, the key variable was the extent to which the CTs supported respondents when they drew upon their own conceptions of geography and how it should be taught. For example, Anna discussed how her CT made it possible to draw upon her subject conceptions due to the congruence of their frames of reference when it came to assessing what 'good' geography teaching was. She was also the only respondent who drew upon the discourse of geography as a subject that was closely associated with the field in her teaching because hers was the only CT that advocated taking students out of the classroom as a good way to teach geography. To some extent, Frederick's CT also supported him when he drew upon his subject conceptions. She believed that the

academically more able students in the school had to be challenged, and encouraged Frederick to draw upon his 'big picture' understandings of geography and to use spatial images as an integral means of teaching geography. This stood in direct contrast with Daniel and Catrina whose mandates from their CTs were to use lecture-style approaches to 'deliver' the prescribed textbook content. In fact these respondents also suggested that because the CTs themselves also believed that these were the most efficient and effective ways to teach geography, the students were used to such approaches as well and were therefore highly resistant to other ways of learning geography.

Eddie and Baozhu found themselves in situations where their CTs did not explicitly support or impede them in their decisions about how to perform 'good' teaching. These CTs generally left them alone to do as they saw fit. As such, Baozhu felt free to make geography lessons fun and engaging for her classes, based on her personal belief that this was the best way to teach geography as students would then be inspired to learn more on their own. She also drew upon her convictions about geography's role in fostering an environmental ethic in students, encouraging her students to develop an emotional response to environmental topics like *Deforestation*. In the same way, Eddie was left alone by his CT to concentrate on what he felt was important to teaching (though not necessarily to that of teaching *geography*): examination skills and classroom management.

The data therefore consistently pointed to the importance of the CTs when it came to whether or not respondents performed ‘good’ geography teaching in ways that were aligned to their articulated subject conceptions.

### *6.3.3 Resistance and Inauthentic Performances of ‘Good’ Teaching*

However it is also important to note that even while respondents’ performances of ‘good’ geography teaching were framed by discursive power, as discussed above, these performances did not always reside comfortably with respondents’ own professional identities. For example, Foucault (1971, 1979) suggested that identity performances are seen as ‘natural’ to the self when they are actually in fact discursively constructed. However, Butler (2000, 2003) and Moore (2004) have also argued that the ability to be conscious of the constructed nature of these identity performances also opens up ways of transgressing discourse. The complex relationships among the individual, his/her identity and his/her performance of that identity came through in my data.

In Chapter Five, I have suggested that when discussing their subject conceptions, respondents appeared to have positioned themselves professionally in varying ways. For example, Anna and Frederick had already positioned themselves as *geography teachers* while Daniel discussed his subject conceptions from the viewpoint of a *geographer*. Baozhu appeared to professionally identify as both a geographer as well as a geography teacher, depending on the type of data that was used. Eddie and Catrina both appeared aware of their identities as *teachers*, although their geographical identities were not clearly discerned. These positions, as well as the subject conceptions that respondents

articulated, appeared to be important to respondents insofar as they formed the basis for what they considered to be ‘authentic’ or natural performances of their professional identities<sup>7</sup>. In contrast, where respondents made decisions to perform in ways that met *externally imposed* standards of ‘good’ geography teaching, they generally framed these performances as ‘inauthentic’ or ‘fake’. This conscious distancing of their professional identities from such performances can be seen as a means through which respondents *resisted* discursive power.

Daniel, for example, felt that he had been forced to perform geography teaching in ways that sat uncomfortably with his subject conceptions as well as with his professional identity as a geographer. He did not believe that geography should be taught through PowerPoint slides that were directly framed around the geography textbook. He himself believed in the power of constructivist approaches to learning. However, in acknowledgement of the discursive structures and asymmetrical power relationships within the Teaching Practice context, he made pragmatic decisions to perform in ways that would help him achieve a ‘pass’. At the same time, he was careful to point out that he was unlike his CTs or the other ‘disgruntled’ teachers in his school, and that his personal context was important to him when it came to his teaching. Daniel also elaborated on specific instances where he more directly resisted his CTs. For example, he refused to take instructions that he felt were factually wrong and directly contrary to his

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<sup>7</sup> I do not argue that these identities are *not* discursively constructed in themselves. I merely suggest that respondents appeared to frame performances that drew on their subject conceptions of geography and how to teach it as more ‘authentic’.



subject matter knowledge or to perform in an ‘excitable’ manner which he associated with primary school teaching.

In both Anna’s and Baozhu’s cases, the externally imposed performances stemmed from their NIE supervisors’ perceptions of ‘good’ classroom management. Anna for example, trained her students to respond to a whistle as a means to maintain discipline, while Baozhu altered her appearance to look older and eschewed games and other ‘fun’ activities during these visits. Both respondents framed these performances as *inauthentic* as their supervisors were perceived to be out of touch with the realities of contemporary classroom contexts. At the same time, Anna and Baozhu also considered these performances to be *temporary*. When the visits were over, they fell back on performances of ‘good’ teaching that cohered better with their subject conceptions and professional identities. Catrina expressed dissatisfaction with her CT’s expectations that she maintain rigid control over her classroom, and institute a system of questioning and answering that involved keeping the students on their toes. However, she felt she had no choice but to acquiesce, given the importance of the CT’s evaluations of her teaching performance. In contrast, Eddie’s CT and his NIE supervisor both agreed with his assessment of what constituted ‘good’ teaching. Eddie could take pride in the fact that he had nothing ‘fake’ or unnecessarily ‘fancy’ in his lessons. Eddie therefore believed that his performance of ‘good’ teaching was authentic and natural to his identity as a teacher, the basis of which lay in his own past experience of teaching and learning in a ‘neighbourhood’ school.

#### **6.4 Evolving Subject Conceptions?**

In this section, I explore how the practice of teaching geography affected the subject conceptions of respondents. Previous research on pre-service teachers' subject conceptions presented mixed findings about its links to respondents' teaching experiences. Corney (2000) found a clear and direct link between the two while Barratt-Hacking (1996) and Martin (2000) disagreed. In examining how teaching affected respondents' subject conceptions, Martin (2000, 2005) found that respondents' conceptions of geographical education (and not academic geography) changed and developed over time. In my research, I was interested to investigate how the discursive pressures framing school geography and how best to teach it would affect my respondents' subject conceptions.

At this point, it is important to caveat that my findings in this section may not be comparable to the research on more experienced teachers (e.g., Jewitt, 1998; Brooks, 2007), or to research on novice teachers that extended beyond the pre-service period (Martin, 2000). Here, respondents' experiences of teaching only encompassed ten weeks. In this short period, there could be little change to subject conceptions. In addition, the discursive structures inherent within the research context would also be quite different compared to the contexts studied in the existing research. Still, I believed it was worthwhile for me to study how discourse and teaching practice affected the subject conceptions articulated by the respondents. The data discussed in Section 5.3.2 also suggested that there was a relationship between subject conceptions and the professional identities adopted by respondents. As such, I was also interested to further explore the

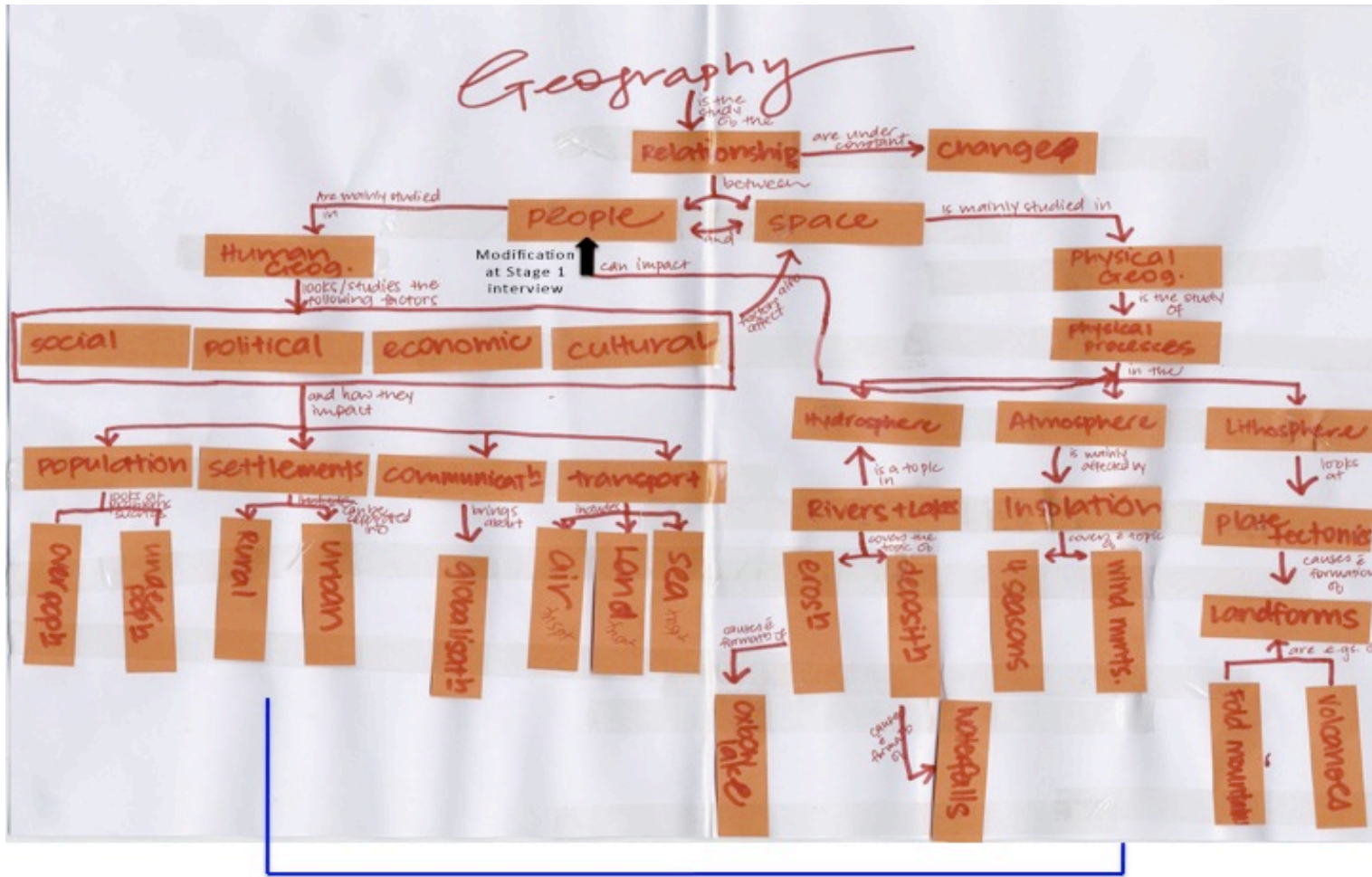
relationships among subject conceptions, discourse and professional identities before and after Teaching Practice.

The data suggested that most of the respondents did not feel a need to make fundamental changes to the substantive structures of their concept maps. Instead the changes related to fleshing out the content or integrating the skills that needed to be taught to students within school geography. For example, the only change Anna made involved extending her concept map to include ‘skills’ to be tested in exams, bolstering further a concept map that was already well-aligned with the national curriculum (Figure 6.7). Anna explained that due to her Teaching Practice experience, she had come to realize that

... when I organised my concept map before, it was organised as topics or how I would categorise geography, but as I went and did my Practicum [Teaching Practice], what I have come to realize is that one important aspect I need to revisit ever so often with the students is skills... I think skills actually need to be integrated into every topic.

Anna began the teacher education programme with a strong identity as a *geography teacher*. After her Teaching Practice, this identity remained strong, and she extended her knowledge of geography from its school content (drawn from her time as a textbook publisher) to the skills required for her students to do well in examinations (a key concern in the competitive Singapore national education system, as outlined in Chapter Three). Otherwise, Anna felt no need change her concept map, expressing the opinion that hers was well suited to secondary school geography.

**Figure 6.7 Modification to Anna's Concept Map After Teaching Practice**



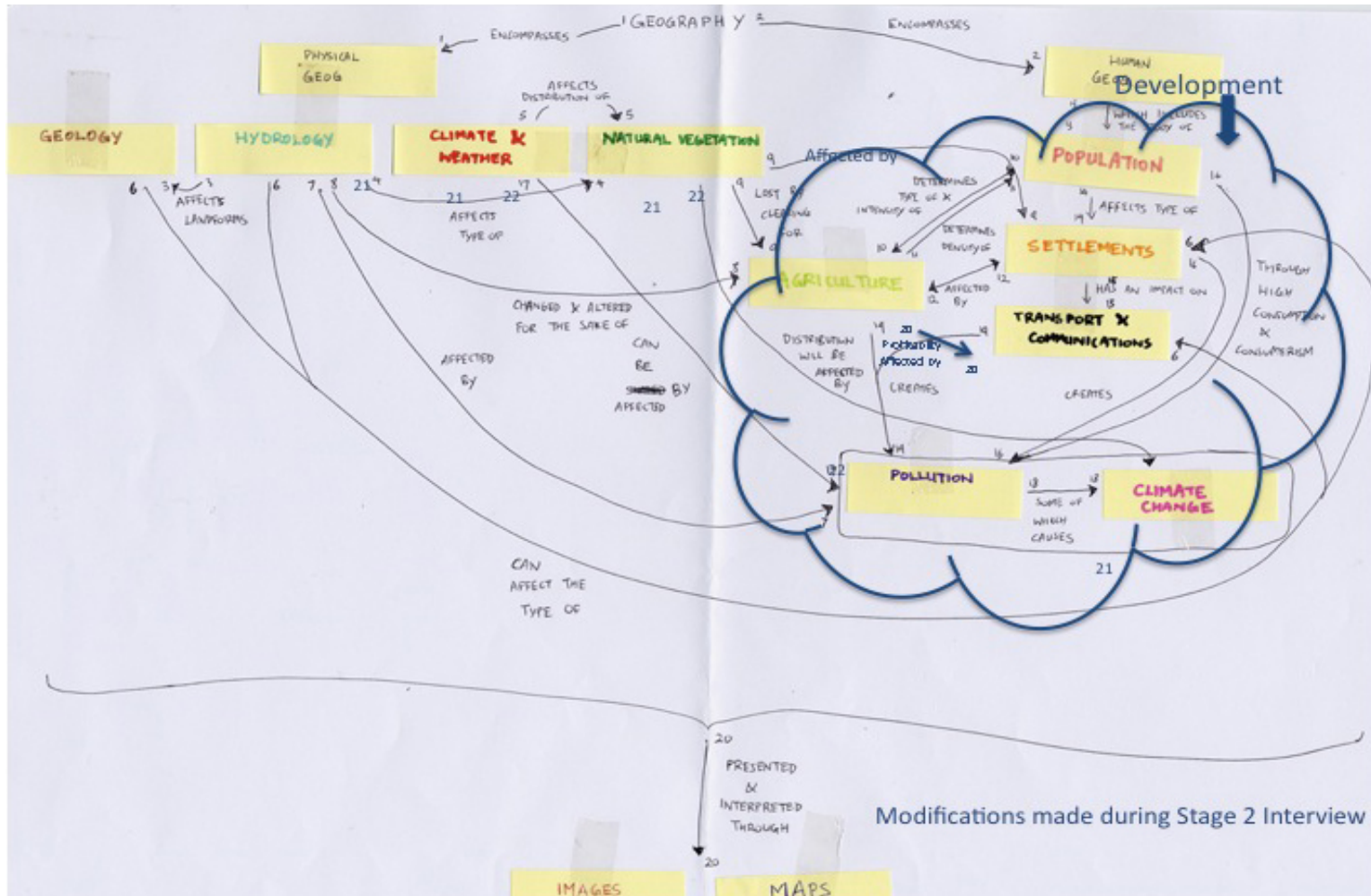
Modification at Stage 2 interview Skills

Like Anna, Frederick's initially strong professional identity as a *geography teacher* appeared to have been bolstered by Teaching Practice. This was also reflected in his concept map which from the first had also been constructed with the school geography curriculum in mind. Although Frederick believed that his concept map 'generally still looks sound to me going by overview' he felt that 'if you're talking about specifics, then it would require a bit more preparation to make it more applicable to the secondary syllabus'. To illustrate this, Frederick decided to subsume all of the Human geography topics in the curriculum under the larger heading of 'Development' (Figure 6.8). This was in reaction to his struggle about where and how to 'fit in' the topic on *Development* in the school curriculum as it was not in the same category as the other topics, but was a 'larger concept'. Frederick also stated that this process of 'fitting things in helped me to make sense of what I have to teach. *As a teacher* [italics my own], you need to know what you're thinking'.

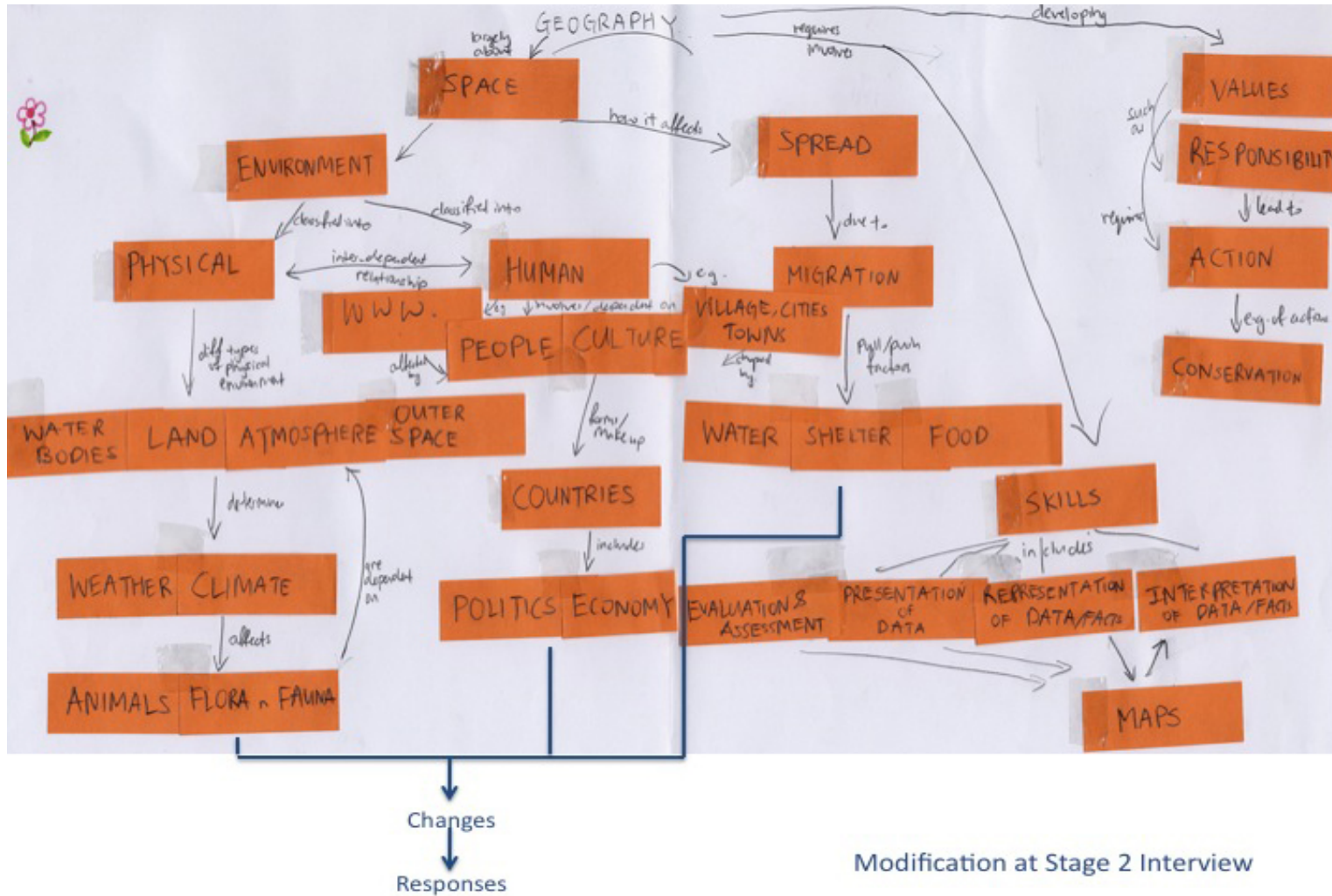
Baozhu added the components of 'change' and 'responses' to her concept map, explaining that this was an integral part of every topic she taught (Figure 6.9). She explained that

...one thing that I missed out here is about changes? I think maybe underlying all these different categories right, will be one big thing called 'Change'. And how we should, how we as humans, we can maybe try to predict the changes that will come, or learn from the changes from the past... and maybe under 'Change', I'd put 'Responses'.

**Figure 6.8 Modification to Frederick's Concept Map  
After Teaching Practice**



**Figure 6.9 Modification to Baozhu's Concept Map  
After Teaching Practice**



Baozhu felt that this inclusion was necessary because she found that ‘*when I am teaching* [italics my own], no matter how I always tell my students what happened in the past, what’s happening now and what might happen in the future’. She attributed the need to do this to the fact that it was ‘part of the textbook content as well’ and that ‘*as teachers* [italics my own], we need to make sure that we understand what needs to be taught to our students’. This greater clarity about school geography in her concept map suggested that Baozhu’s professional identity as a geography teacher had become more concrete. However, it was also interesting to me that Baozhu insisted that ‘my concept map is still alright as it is. It’s still relevant to me. I just need to incorporate more of school geography into it’. Perhaps this was because although Baozhu did not stress spatial perspectives in her decisions about how to teach geography, she still drew upon the other major components of her concept map – *Skills* and *Values*. This was due to the relatively free reign she was given by her CTs to do as she pleased during Teaching Practice (as discussed in Section 6.2.3).

Neither Eddie nor Catrina wanted to make changes to their concept maps as both felt that their conceptions were *irrelevant to their work* as school teachers. For example, Eddie stated flatly that his conceptions of geography ‘did not really matter’. This was because he planned his lessons ‘based on the syllabus, according to the textbook and according to the knowledge they [the students] need. Not so much on the explicit linkage between the two’. This reinforced the impression given from the first that Eddie identified himself as a teacher who could ‘deliver’ any content he was called upon to teach by reading up on the textbook content. Catrina felt that she had learnt to see some of the links in school



geography after Teaching Practice through observing her CT's lessons. For example, she observed her CT organizing the topics of *Climate* and *Natural Vegetation* in a way that drew connections between the two for the students, which was different from her own school experience as a student when both topics were taught separately. However, Catrina declined to make changes to her concept map or to draw a new one during the interview, explaining that focusing on the substantive structure of geography would only confuse her students.

How should I teach? Will they be confused? Will that [making links] meet my objectives or will it confuse them in the end, or what?

As such, Catrina suggested that is probably 'wiser to just focus on the textbook to be clear'.

Daniel had drawn a map that was oriented towards academic geography, and in Section 6.2.2, I alluded to the discursive pressures he felt forced him to teach purely school content so that he made 'very little links to the broader discipline of geography at all'. Despite this, Daniel did not find it necessary to make changes his concept map and suggested that it was still useful to him as a teacher because his substantive and syntactic conceptions of geography were applicable to any geographical content, including school geography. Such a map allowed one to

...have an idea of the framework you are approaching it [school content] by... it's important to teachers to know what framework you're using, otherwise you'll just be imparting knowledge, facts, and you'll never get them to understand the discipline and be critical thinkers.

Daniel continued to re-iterate his position as a *geographer* first, stating that his conceptions allowed him to ‘draw upon a wealth of disciplines within geography’ in order to give his students a ‘sense of how geography is really *Geo-Graphy*, a study of the world’. He suggested that he could understand why some of his peers ‘omitted certain topics and stuck to the textbooks’ when constructing their concept maps, but felt that such a concept map was ‘more limited... after all the syllabus does change’. Daniel therefore appeared to take a long-term perspective of teaching just as he did with geography. Just as geography’s philosophical traditions might change over time, Daniel appeared cognisant of the fact that syllabi went under review in Singapore every five years. He believed that his conceptions of geography would enable him to incorporate changes in the school syllabi easily, as examples of how particular perspectives helped students to understand the topics/ phenomenon being studied, even if this perspective was not always immediately applicable to his day to day teaching.

The discussion in this section points to two general observations. First, where respondents did make changes to their concept maps after Teaching Practice, these related to extending or modifying their maps to include dimensions of *school geography* they had neglected to consider. In discussing the changes they made, Anna, Frederick and Baozhu made frequent references to their identities as *geography teachers* and the need for geography teachers to be clear about how school geography was organised and which aspects of school geography were important to students’ examination outcomes. The other point to note is that when respondents declined to make changes, it was either because they felt that their subject conceptions were irrelevant to (Eddie and Catrina) or

transcended (Daniel) the school curriculum. These respondents also appeared to retain their adopted professional identities (discussed in Chapter Five) – as *teachers* and *geographers* respectively.

## **6.5 Summary**

In this chapter, I have examined the extent to which respondents drew upon the subject conceptions they articulated during Teaching Practice, arguing that it is necessary to frame this relationship in terms of the discursive pressures surrounding ‘good’ teaching. This is because teachers’ work is affected by such discourses and to ignore its influence on the subject conception-practice link would impoverish research. In general, the data confirmed that whether pre-service teachers drew upon their subject conceptions depended not only on whether their subject conceptions were oriented towards school geography to begin with. In fact, other discourses operating within the Teaching Practice context were also very influential.

The key factor that affected whether respondents drew upon their subject conceptions was the CT(s) in the schools. The data showed that CTs could facilitate or constrain this relationship based on whether their own conceptions of ‘good’ (geography) teaching were similar or different to respondents’ and/or based on the level of freedom they gave to respondents in their classroom decisions. In all cases, respondents were aware of the asymmetrical nature of their power relationships to their CTs, and also referenced what they did in class with regard to whether or not their CTs allowed it. CTs also affected the expectations and classroom norms of the students that were being taught, which fostered

acceptance to or resistance towards teaching practices on the part of students. Another influence was that of the NIE supervisor and his/her understandings of what 'good' performances of teaching entailed. Due to the more sporadic nature of the supervisor's visits, his/her influence was limited in scope compared to that of the CTs.

However, respondents also did not merely accede to the demands or preferences of their CTs. When respondents were compelled to perform 'good' teaching in ways that were at odds with their own conceptions of geography and how to teach it, they registered their resistance through distancing themselves from their teaching performances. A few of the respondents described their classroom practices then as 'inauthentic' or 'fake' performances which were unrelated to their own professional identities. They also framed these as temporary, lasting only as long as the observations or Teaching Practice did.

Finally, I have also explored how and why subject conceptions change after Teaching Practice. The evidence in Chapter Five suggested that there were links between respondents' professional identities and the subject conceptions they articulated. In examining the changes to respondents' subject conceptions therefore, I was keen to examine how identities also evolved. The data showed that those who started with subject conceptions that were mostly or partly oriented towards *school* geography modified their concept maps to accommodate more detail related to the school curriculum, whether in terms of examinable content or skills. However this did not apply to respondents whose conceptions were oriented towards academic geography, or to those who did not have concrete and/or coherent conceptions to begin with. In these cases, respondents declined

to make changes to their subject conceptions, either because their conceptions already accommodated school geography conceptually, or because they saw subject conceptions as unnecessary to classroom teaching. Teaching Practice also did not appear to change the professional identities adopted by the respondents. Instead respondents tended to dig in deeper into the identities they started out with after the experience.

## **Chapter Seven: Implications and Considerations**

### **7.1 Introduction**

This thesis began by referring to recent projects (*A Different View*, 2009; *Road Map for 21<sup>st</sup> Century Geography Education*, 2013) that emphasised the importance of a quality geography education to the lives and futures of young people. These documents highlighted the urgent need for geography education research to understand teachers' knowledge about the subject and its implications for their practice. This study suggests that the application of a Foucauldian lens of discursive power is useful because it allows for the viewing of subject conceptions and practice as the result of negotiated individual responses to larger discursive structures. By understanding the position each teacher had within discursive networks, as well as his/her agency in responding to discourse, an enhanced appreciation of teachers' articulated conceptions and the reasons behind them was achieved. This thesis also examines how power affects the links between the subject conceptions and practice of teachers within the Singapore teacher education context, thereby casting light on why individuals drew upon the subject conceptions they articulated to different extents as illustrated in the literature.

This research unpacked the complex relationships between discourse, knowledge, context and practice through three specific research questions.

- 1. How do pre-service geography teachers in Singapore reconcile (and resist) discourse about geography to articulate their conceptions of the subject?**

- 2. How do pre-service teachers reconcile (and resist) discourse in their decisions about *performing* ‘good’ geography teaching? To what extent do they draw upon their subject conceptions of geography in doing so?**
- 3. How and why do pre-service teachers’ conceptions of geography change after Teaching Practice?**

This research was situated in the Singapore context where an analysis of discursive power is particularly relevant because of the high degree of centralised control by the state, and its dominant role in defining valuable knowledge and in shaping the identities of ‘good’ teachers (and citizens). A great level of homogeneity is therefore implied in this context. However, what my research has highlighted is that even within Singapore, a variety of responses (and even resistance) to discourse and power, were still possible. This will be discussed further in this chapter. The Singapore context also presented a number of difficulties when it came to operationalising the research. As discussed in Sections 3.6 and 4.2.2, the state’s discourse on meritocracy and the ways in which this obscured discourses related to gender and race (and class and social mobility), coupled with its draconian policing of aspects of embodiment like race and sexuality, presented challenges to this research. The desire to gather rich data by directly addressing these issues in my methodology had to be balanced against ethical considerations about the well-being of my respondents, and perhaps limited the scope of discussion with regard the role of the body in teachers’ conceptions of geography and ‘good’ teaching in my research.

The following sections discuss the main findings derived from investigating these questions and highlight their significance in contributing to the literature on teachers' knowledge and practice. The implications of these findings for teacher educators and policy makers within geography and beyond it are also discussed.

## **7.2 Implications of Findings on Teachers' Subject Conceptions**

The study found that respondents mostly chose to organise their conceptions in the same manner as the national curriculum for school geography and made frequent references to what is considered compulsory knowledge of geography in order to do their jobs. Respondents suggested that this was because of the role of school examinations as a measure of success for pupils, teachers and schools, as noted in the literature (Tan, J., 2005; Hogan and Gopinathan, 2008). What is important about this finding is that within the teacher education context, discursive pressure can cause teachers to select certain aspects of geography consciously for inclusion in their conceptions and not others. This perspective has important implications for researchers. For example, one area of debate in the literature was how teachers reconciled the split between academic and school geography (Barratt-Hacking, 1996; Rynne and Lambert, 1997; Jewitt, 1998; Corney, 2000). My research suggests that to answer this question one needs to understand better the discursive contexts that undergird what teachers say they know about geography. A conception that appears to be based on school geography (e.g., in Anna's case) may not be a complete reflection of the teacher's subject knowledge, but rather a reflection of the dominant discourses framing what he/she said. Similarly, changes to teachers' subject



conceptions over time (Martin, 2005) could suggest changing discursive contexts rather than substantive changes to respondents' subject knowledge.

Another finding was that the professional identities adopted by respondents were important to how they reconciled discourses about geography. Respondents who presented themselves as *geographers* were more likely to engage with larger disciplinary perspectives beyond those in school geography, whereas those who identified as *geography teachers* were concerned with drawing coherent links within the school curriculum. The respondents who identified as *teachers* demonstrated a concern with mastering curricular content only. This finding has direct implications for geography teacher education. A key concern in geography education today is in developing 'a deep knowledge of the discipline... in order to improve student learning of the big ideas and practices of geography' (*Road Map for 21<sup>st</sup> Century Geography Education*, 2013: 8). At the National Institute of Education (NIE), this could also be seen by how much of the geography coursework was premised on engaging with geography's core concepts and disciplinary perspectives. However the data indicates that those who had adopted professional identities as solely *teachers* found the coursework irrelevant because of their perception that the only geographical knowledge required of them was the content prescribed in the national curriculum.

The study also indicates that the professional identities adopted by respondents did not change over the course of the teacher education programme. In fact Teaching Practice reinforced the beliefs of those respondents who believed that as teachers, they did not

need to engage with geography beyond the school curriculum. These findings suggest that course tutors and teacher educators in general need to address pre-service teachers' professional identities. In order to get teachers to engage with larger disciplinary perspectives, teacher educators and policy makers have to focus on getting teachers to perceive themselves as *geographers* first, rather than just as *teachers* or even *geography teachers*.

The subject conceptions literature also propose that teachers' personal contexts affected how they viewed and evaluated their subjects, within geography (Brooks, 2007, 2010) and beyond it (Carlsen, 1999; Grossman, 1990; Gudmundsdottir, 1991; Wineburg and Wilson, 1991). This research found that respondents tended to include aspects of geography to which they had strong personal attachment in their subject conceptions. However, of particular importance is how they sometimes consciously included or showed a preference for elements that were not emphasised in the examinable curriculum. Such resistance is noteworthy, considering the dominance of the national curriculum, as well as the orientation around competition and examinations, in the Singapore context (outlined in Chapter Three). This analysis of personal contexts as sites of potential resistance has implications for teacher education and professional development. Martin (2005, 2008) suggested that teachers already had highly developed geographical understandings in their daily lives and that teacher educators should tap into these lived experiences to help develop teachers' conceptions of geography. This research not only supports Martin's findings, but it also advances that making these connections explicit can foster an appreciation for geographical perspectives and understandings that

go beyond, and counterbalance, the dominance of examinable school content in teachers' conceptions.

### **7.3 Implications of Findings on Subject Conception-Practice Link**

This research examines the links between the subject conceptions and practice of respondents as informed by discourse. It explores how different types of discourse that frame the 'good' teaching (Moore, 2004) of geography could influence the extent to which respondents drew upon their subject conceptions during Teaching Practice. The data suggested that the most important discursive pressure on this relationship was the Co-operating Teachers (CTs) in their schools. An emphasis on practical classroom knowledge (Deng and Gopinathan, 2003), as well as a financially high-stakes context, meant that respondents were in asymmetrical power relationships with their mentors during Teacher Practice. As such, respondents were pragmatically inclined to put aside their own subject conceptions and beliefs about how best to perform 'good' geography teaching if there was a conflict with that of their CTs'. This indicates that a possible reason behind the difficulty in clearly defining the links between teachers' subject conceptions and practice in the literature is because research did not address the role of discursive power in this relationship.

Brooks (2007) suggested that teachers' subject conceptions were important because they were a source of motivation and inspiration in their work, but found that teachers were not always able to draw upon their conceptions. Even though the power relationships in this study might be more unbalanced relative to other contexts, a focus on how discursive

structures erode teachers' agency to draw upon their subject conceptions would nonetheless still be useful to teacher educators and policymakers. Another implication of this finding is that school-based mentors' conceptions of geography and 'good' teaching are very important. Working to improve teachers' subject knowledge and knowledge of pedagogy addresses only half of the issue. School-based mentors' conceptions need to be addressed as well in professional development research and policy.

The focus on discursive power in this research also necessarily extends the discussion to the role of the body within subject conceptions (as discussed in Section 2.3). The data suggests that most of the respondents were influenced by the discourse of geographers as intrepid explorers (Stoddart, 1986; Driver, 2001; Bracken and Mawdsley, 2004) who are physically fit and active. Even female respondents appeared to embrace this 'masculinist' discourse (Domosh, 1991; Rose, 1993) and stated that geographers were not too 'dainty' and 'ladylike' to rough it out. However, such conceptions appeared limited to their perceptions of academic geography and geographers. For example, only Anna felt that geography teachers were physically distinguishable from other subject teachers in schools. Instead all of the respondents drew upon discourses in the national education and teacher education contexts that framed 'good' teachers as respectable and conservative in their appearance.

This divergence in respondents' conceptions of the body was paralleled by the split in their conceptions of how academic geographers and geography teachers should teach geography. Most of the respondents agreed that teaching geography through taking

students out in the field was authentic and beneficial, and some of them also remarked that their university fieldwork significantly affected their learning. However none of the respondents included fieldwork in their concept maps. They also did not teach geography using fieldwork during Teaching Practice, other than Anna who was encouraged to do so by her CT. The Geographical Association in the UK has pushed for learning ‘directly in the untidy world outside the classroom’ (*A Different View*, 2009: 23) as a key aspect of a geographical education. However this research demonstrates that when it comes to fieldwork, conceptions and practice are affected by discourses outside of the subject context. In the case of Singapore, respondents made it clear that they left out fieldwork because it was not compulsory and not examined in the syllabus. This implies that the push for more field-based learning is unlikely to succeed if not explicitly emphasised and supported in education policy.

Finally, although respondents understood and complied with their asymmetrical power relationships with their mentors in their practice, they still registered their resistance in markedly similar ways. Respondents framed the performances as inauthentic and temporary and distanced themselves personally and professionally from them. What this suggests is that externally imposed standards of professional competence might lead to temporary and artificial compliance within the Teaching Practice context. However unless these performances were consistent with respondents’ own professional identities and aligned with their personal beliefs on how geography should be taught, these behaviours did not last. Therefore it is crucial for teacher educators to address pre-service

teachers' subject conceptions, personal contexts and professional identities within teacher education programmes.

#### **7.4 Limitations of Study and Implications for Future Research**

The Singapore context is unique in terms of the central control of the state and the exceptionally close ties among the Ministry of Education (MOE), the NIE and schools in the teacher education programme. Nevertheless, this study testifies to the usefulness of using the framework described in Figure 2.1 to analyse subject conceptions and their links to teachers' practice. This perspective on the influence of discourse can also be applied to other educational contexts, to other disciplines and to more experienced teachers in order to gain greater insight into the role of discourse in new contexts. In fact this approach also lends itself to comparative studies of teachers working within different (national/ state/ school) contexts.

This study focuses only on pre-service teachers during their year in the teacher education programme, during which respondents only taught for ten weeks. This thus limits the generalisations that can be drawn between their conceptions and practice. However because this study was premised on understanding how uniquely situated individuals responded to discursive power, it is still useful for studies on how teachers' conceptions and practice evolve over time. For example, as these teachers establish themselves in the profession, how does the nature of discourse change, and what implications do these changes have on the responses that are available to them? Such studies are important

because research and policies designed to support teachers' professional development should take into account the changing nature of discourse at various points in their career.

This study does not include observations of respondents' practice. The decision to not go into respondents' classrooms was difficult but made sense in light of the ethical concerns and conceptual issues outlined in Sections 4.4.2 and 4.6. However as these pre-service teachers become more established and expert in the profession, it is arguable that they will no longer be subject to the same level of scrutiny as during Teaching Practice. A researcher's presence in their classrooms is less likely to affect practice given the removal of the high-stakes context of each observed lesson. While understanding the individual's perceptions and decisions in relation to discourse would still be the primary focus of future research, observations could provide additional insight into how actual classroom contexts frame teachers' practice in future studies.

Finally, this study was partly designed to cast light on the role of the material body in teachers' conceptions of geography as well as their practice. Respondents were chosen so that discourses acting on and through different aspects of embodiment could be uncovered and examined. As noted in both Chapters Three and Four, the national state-led discourse on meritocracy has rendered characteristics related to gender and race (and class) largely invisible. Opinion on other aspects of embodiment like sexuality is also generally conservative. Although respondents were ready to discuss the academic geographer's body as well as the discourses regulating the conservative image of the teacher in Singapore in general terms, they were not able or not willing to discuss specific

aspects of embodiment. However, the lack of data in this specific research context does not necessarily mean that the conceptual framework used here is unhelpful in general. This framework could be applied to other contexts where the perceived need to self-censor is less compelling. In such contexts, elicitation methods that surface tacit understandings about the body, geography and ‘good’ geography teaching could be utilised to answer the research questions laid out here more fully.

Even with its limitations, this research has nevertheless contributed to subject conceptions research in important ways. It has highlighted the need to approach teachers’ subject conceptions explicitly as responses to changing discursive contexts. It has illuminated the role of specific types of professional identities in informing the subject conceptions of teachers and the need to engage with these identities in teacher education and professional development. This study has also revealed the importance of addressing school-based mentors’ subject conceptions and ideas of ‘good’ teaching within teacher training partnerships. The focus on how teachers resist discourse in articulating their subject conceptions as well as in their practice underscores the importance of addressing their professional identities and personal experiences of geography. Finally, this research unpacks the relevance of the body to subject conceptions research and presents possible ways in which research on teachers’ conceptions and practice can move forward.



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#### Newspaper Reports, Press Releases and Parliamentary Speeches

- FY 2013 Committee of Supply Debate: 2<sup>nd</sup> Reply by Miss Indranee Rajah, Senior Minister of State*, downloaded from <http://www.moe.gov.sg/media/speeches/2013/03/13/fy-2013-cos-2nd-reply-sms-indranee.php>
- Ministry of Education's Response to the External Curriculum Review Report*. MOE Press Release, 21 March 1998, downloaded from <http://www.moe.gov.sg/press/1998/980321>
- Ministry of Education's Parliamentary Reply to Query on Teacher-Student Relationships*, 19 Jan 2012, downloaded from <http://www.moe.gov.sg/parliamentary-replies/2012/01/teacher-student-relations>
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## 1 Introduction and Rationale

1.1 The Lower Secondary Geography syllabus was reviewed in 2003 to ensure that it remains relevant and future-oriented. It has incorporated knowledge, skills and values essential to a holistic understanding of Geography and provides a foundation for the study of Geography at the upper secondary level. It has also integrated MOE initiatives and programmes on innovation and enterprise (I&E), thinking skills, Information Technology (IT), National Education (NE), economic literacy and financial literacy.

## 2 Aims and Objectives

2.1 The Lower Secondary Geography syllabus aims to develop knowledge and skills as well as inculcate positive values and attitudes in students.

### 2.2 Aims

- Stimulate students' interest in Geography;
- Provide a holistic understanding of physical-human relationships;
- Develop basic skills in acquiring, communicating and applying geographical knowledge; and
- Develop an informed concern about the quality of the environment and the future of the human habitat; and thereby enhance students' sense of responsibility for the care of the Earth and its people.

## 2.3 Objectives

### 2.3.1 Knowledge

Students should demonstrate knowledge of

- geographical concepts, terms and facts;
- components of physical and human environments;
- spatial patterns of physical and human phenomena; and
- physical-human relationships at local, regional and global scales.

### 2.3.2 Skills

Students should be able to

- identify and classify physical and human features of the environment;
- observe, collect and record geographic information from both primary and secondary sources;
- interpret maps, tables, graphs, photographs and fieldwork data; and
- organise and present information in a coherent manner.

### 2.3.3 Attitudes and Values

Students should be able to demonstrate

- a sense of appreciation and responsibility for the quality of the environment at local, regional and global scales;
- sensitivity towards people in different human environments;

- an awareness of Singapore's strategic vulnerabilities and constraints, and the strategies used to overcome them; and
- instinct for survival and confidence in the future of Singapore.

### **3 Curriculum Time**

- 3.1 A minimum of two periods per week should be allocated to the study of Geography in Secondary 1 and 2. This syllabus has been designed to be covered over a minimum of 114 periods over 2 years.

### **4 Framework of the Syllabus**

- 4.1 The syllabus adopts a systematic framework to organise content. Geographical skills and foundation knowledge are introduced at both Secondary 1 and Secondary 2. At Secondary 1, the emphasis is on the components of the physical environment and at Secondary 2, the focus is on the human environment and issues related to managing the changing environment. Within this framework, the physical-human relationships are used as the organising theme to show how relationships between people and the environment have given rise to the distinctive character of places and environments. There are a total of 5 themes: 3 themes to be covered in Secondary 1 and 2 themes to be covered in Secondary 2.

#### **4.1.1 Secondary 1 Syllabus**

- Theme I: Introduction to Geography  
Theme II: Understanding the Environment  
Theme III: The Physical Environment

#### **4.1.2 Secondary 2 Syllabus**

- Theme IV: The Human Environment  
Theme V: Managing the Changing Environment

- 4.2 Case studies and examples are used to explicitly highlight the physical-human relationships and to illustrate important concepts and values. They also provide the opportunities for the infusion of MOE initiatives and programmes. Current issues and events should be incorporated into the lessons to ensure that the subject remains relevant and interesting.

- 4.3 The teaching of geographical skills such as atlas skills, map reading skills and photograph interpretation are given greater attention in this syllabus to prepare students for upper secondary Geography. Generic skills in sourcing, analysing, communicating and applying geographical knowledge have also been integrated into the syllabus.

# **GEOGRAPHY**

## **GCE Ordinary Level**

### **(Syllabus 2235)**

## **INTRODUCTION**

The 'O' Level Upper Secondary Geography syllabus, designed around 112 hours, is to be taught over two years and comprises Physical Geography, Human Geography and geographical skills and techniques. The physical geography topics are *Plate Tectonics and Resulting Landforms, Weather and Climate, Natural Vegetation* and *Rivers and Coasts*. The human geography topics are *Geography of Food, The Industrial World, Tourism and Development*.

## **AIMS**

The syllabus aims to enable candidates to:

1. Acquire knowledge of the characteristics and distribution of physical and human phenomena;
2. Develop an understanding of the processes affecting the physical and human environments;
3. Provide a holistic understanding of physical-human relationships;
4. Develop skills in acquiring, communicating and applying geographical knowledge;
5. Develop an informed concern about the quality of the environment and the future of the human habitat, and thereby, enhance students' sense of responsibility for the care of the Earth and its people; and
6. Develop awareness of contrasting opportunities and constraints which people face in local, regional and global environments.

## **KNOWLEDGE**

The syllabus intends that candidates develop knowledge with regard to:

1. Geographical concepts, terms, facts, trends and theories;
2. Components of physical and human environments;
3. Spatial patterns of physical and human phenomena;
4. Relationships and interactions between and within physical and human phenomena at local, regional and global scales; and
5. Spatial and temporal changes in physical and human environments.

## SKILLS

The syllabus intends for candidates to develop the skills to:

1. Identify and classify physical and human features of the environment;
2. Observe, collect and record geographic information from both primary and secondary sources;
3. Extract relevant information from geographical data (numerical, diagrammatic, pictorial and graphical forms);
4. Interpret and recognise patterns in geographical data and deduce relationships;
5. Use and apply geographical concepts, terms and facts learnt to new contexts and issues; and
6. Organise and present information in a coherent manner.

## VALUES

Through their geographical training candidates should develop:

1. A sense of appreciation and responsibility for the quality of the environment and the desirability of sustainable development at local, regional and global scales;
2. Sensitivity towards the attitudes, values and beliefs of people in different human environments;
3. An awareness of Singapore's strategic vulnerabilities and constraints, and the strategies used to overcome them;
4. An instinct for survival and confidence in the future of Singapore; and
5. An ability to make judgements on values and attitudes in the use and management of resources.

## ASSESSMENT OBJECTIVES

Candidates should be able to:

### **AO1: Knowledge**

- Demonstrate relevant factual knowledge – geographical facts, concepts, processes, interactions and trends

### **AO2: Critical Understanding and Constructing Explanation**

- Select, organise and apply concepts, terms and facts learnt
- Make judgements, recommendations and decisions

### **AO3: Interpreting and Evaluating Geographical data**

- Comprehend and extract relevant information from geographical data (numerical, diagrammatic, pictorial and graphical forms)
- Use and apply geographical knowledge and understanding to interpret geographical data
  - o recognise patterns in geographical data and deduce relationships
  - o compare and contrast different views
  - o draw conclusions based on a reasoned consideration of evidence

# **GEOGRAPHY ELECTIVE**

## **GCE O Level (Syllabus 2192)**

### **INTRODUCTION**

The 'O' Level Geography Elective syllabus, designed around 56 hours, is to be taught over two years and comprises Physical Geography, Human Geography and geographical skills and techniques. The physical geography topics are *Natural Vegetation* and *Rivers and Coasts*. The human geography topics are *Geography of Food* and *Development*.

### **AIMS**

The syllabus aims to enable candidates to:

1. Acquire knowledge of the characteristics and distribution of physical and human phenomena;
2. Develop an understanding of the processes affecting the physical and human environments;
3. Provide a holistic understanding of physical-human relationships;
4. Develop skills in acquiring, communicating and applying geographical knowledge;
5. Develop an informed concern about the quality of the environment and the future of the human habitat, and thereby, enhance students' sense of responsibility for the care of the Earth and its people; and
6. Develop awareness of contrasting opportunities and constraints which people face in local, regional and global environments.

### **KNOWLEDGE**

The syllabus intends that candidates develop knowledge with regard to:

1. Geographical concepts, terms, facts, trends and theories;
2. Components of physical and human environments;
3. Spatial patterns of physical and human phenomena;
4. Relationships and interactions between and within physical and human phenomena at local, regional and global scales; and
5. Spatial and temporal changes in physical and human environments.

## SKILLS

The syllabus intends for candidates to develop the skills to:

1. Identify and classify physical and human features of the environment;
2. Observe, collect and record geographic information from both primary and secondary sources;
3. Extract relevant information from geographical data (numerical, diagrammatic, pictorial and graphical forms);
4. Interpret and recognise patterns in geographical data and deduce relationships;
5. Use and apply geographical concepts, terms and facts learnt to new contexts and issues; and
6. Organise and present information in a coherent manner.

## VALUES

Through their geographical training candidates should develop:

1. A sense of appreciation and responsibility for the quality of the environment and the desirability of sustainable development at local, regional and global scales;
2. Sensitivity towards the attitudes, values and beliefs of people in different human environments;
3. An awareness of Singapore's strategic vulnerabilities and constraints, and the strategies used to overcome them;
4. An instinct for survival and confidence in the future of Singapore; and
5. An ability to make judgements on values and attitudes in the use and management of resources.

## ASSESSMENT OBJECTIVES

Candidates should be able to:

### **AO1: Knowledge**

- Demonstrate relevant factual knowledge – geographical facts, concepts, processes, interactions and trends

### **AO2: Critical Understanding and Constructing Explanation**

- Select, organise and apply concepts, terms and facts learnt
- Make judgements, recommendations and decisions

### **AO3: Interpreting and Evaluating Geographical data**

- Comprehend and extract relevant information from geographical data (numerical, diagrammatic, pictorial and graphical forms)
- Use and apply geographical knowledge and understanding to interpret geographical data
  - recognise patterns in geographical data and deduce relationships
  - compare and contrast different views
  - draw conclusions based on a reasoned consideration of evidence



**ASSESSMENT OF PERFORMANCE IN TEACHING (FORMATIVE)**

Name of Student Teacher: \_\_\_\_\_ Subject: \_\_\_\_\_ CS 1 / 2 / 3 \*  
 Programme / Intake: \_\_\_\_\_ Lesson: \_\_\_\_\_  
 School: \_\_\_\_\_ Unit: \_\_\_\_\_  
 Class/Time: \_\_\_\_\_ Lesson Observation: 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 \* (\* Please circle)

PROCESSES		COMPETENCIES	COMMENTS (strengths, areas for improvement and suggestions)
1	<b>LESSON PREPARATION</b> <input type="checkbox"/> Excelling <input type="checkbox"/> Proficient <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable	<ul style="list-style-type: none"> <li>• Delineates appropriate learning objectives</li> <li>• Has adequate mastery of subject knowledge/skills</li> <li>• Selects appropriate teaching strategies, learning activities and resources</li> <li>• Caters to students' diverse needs</li> <li>• Develops a workable/appropriate time schedule</li> </ul>	
2	<b>LESSON DELIVERY and MANAGEMENT</b> <input type="checkbox"/> Excelling <input type="checkbox"/> Proficient <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable	<ul style="list-style-type: none"> <li>• Introduces and concludes lesson appropriately</li> <li>• Paces lesson appropriately</li> <li>• Sustains student interest and encourages participation</li> <li>• Organises and monitors individual/group learning adequately</li> <li>• Gives clear explanations</li> <li>• Questions and responds appropriately</li> <li>• Uses voice and language appropriately</li> <li>• Uses IT/media/ resources effectively</li> </ul>	
3	<b>CLASSROOM MANAGEMENT</b> <input type="checkbox"/> Excelling <input type="checkbox"/> Proficient <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable	<ul style="list-style-type: none"> <li>• Establishes interaction and rapport</li> <li>• Establishes a supportive learning environment</li> <li>• Reinforces good behaviour appropriately</li> <li>• Sets and enforces classroom rules/routines effectively</li> <li>• Uses a range of preventive and intervention strategies appropriately</li> </ul>	
4	<b>FEEDBACK and EVALUATION</b> <input type="checkbox"/> Excelling <input type="checkbox"/> Proficient <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable	<ul style="list-style-type: none"> <li>• Gives appropriate and timely feedback to students</li> <li>• Monitors and addresses student understanding</li> <li>• Gives meaningful assignments and marks them accurately and promptly</li> </ul>	

## Appendix 3.2

5	<b>PROFESSIONAL QUALITIES</b> <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable	<ul style="list-style-type: none"> <li>• Shows care and concern for students</li> <li>• Demonstrates warmth and enthusiasm</li> <li>• Demonstrates adaptability</li> <li>• Is responsive to feedback</li> <li>• Is reflective</li> <li>• Is punctual for lesson</li> <li>• Dresses professionally</li> </ul>		
Name of NIE Supervision Coordinator		Signature		Date

# Appendix 3.3

## Scoring Summary

School

		Total Possible Points	Approach	Deployment	Assessment & Review	Score (Ave * P)
<b>ENABLERS</b>		<b>500</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>0</b>
<b>1</b>	<b>LEADERSHIP</b>	<b>100</b>				<b>Sub 0</b>
1.1	School Leadership	45	30	30	20	
1.2	School Culture	40	30	30	20	
1.3	Responsibility to Society	15	30	30	10	
<b>2</b>	<b>STRATEGIC PLANNING</b>	<b>70</b>				<b>Sub 0</b>
2.1	Strategic Planning Process	40	30	30	20	
2.2	School Operational Goals	30	30	30	20	
<b>3</b>	<b>STAFF MANAGEMENT</b>	<b>90</b>				<b>Sub 0</b>
3.1	Staff Resource Planning	15	30	30	20	
3.2	Staff Training and Development	25	30	30	20	
3.3	Staff Involvement in Organisation Improvement	20	20	20	20	
3.4	Staff Morale	15	20	30	20	
3.5	Staff Performance & Recognition	15	30	30	20	
<b>4</b>	<b>RESOURCES</b>	<b>115</b>				<b>Sub 0</b>
4.1	Physical Facilities	10	40	40	20	
4.2	Teaching-Learning Resources	15	30	20	20	
4.3	Finance	10	30	30	20	
4.4	Information and Analysis	45	30	30	20	
4.5	Suppliers	10	30	40	20	
4.6	Partnerships	15	30	30	10	
4.7	Administrative Support	10	30	30	20	
<b>STUDENT-FOCUSED PROCESSES</b>		<b>125</b>				<b>Sub 0</b>
5.1	Student Well-Being	25	30	30	20	
5.2	Teaching and Learning	35	30	30	20	
5.3	Assessment of Students	25	30	30	20	
5.4	Development in Co-Curricular Areas	25	40	40	20	
5.5	Leadership Development	15	30	30	20	

		Total Possible Points	Trends	Targets	Comparisons	Causes	Score (Ave * P)
<b>RESULTS</b>		<b>500</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>0</b>
<b>6</b>	<b>ADMIN &amp; OPERATIONAL RESULTS</b>	<b>60</b>					<b>Sub 0</b>
6.1	Administrative & Operational Results	60	30				
<b>7</b>	<b>STAFF RESULTS</b>	<b>80</b>					<b>Sub 0</b>
7.1	Staff Competence and Morale	80	20				
<b>8</b>	<b>PARTNERSHIP AND SOCIETY RESULTS</b>	<b>60</b>					<b>Sub 0</b>
8.1	Benefits of Partnership	40	20				
8.2	Impact on Society	20	20				
<b>9</b>	<b>KEY PERFORMANCE RESULTS</b>	<b>300</b>					<b>Sub 0</b>
9.1	Cognitive	100	10				
9.2	Physical	40	40				
9.3	Aesthetics	40	20				
9.4	Social and Moral	60	20				
9.5	Student Leadership	30	20				
9.6	Student Morale	30	10				

**TOTAL OVERALL SCORE= 1000**

**OVERALL SCORE= 0**

## Appendix 4.1

### Geographical Questions

- Question 1: What is China like?
- Question 2: Should a new road be built close to a nature reserve?
- Question 3: Is immigration a good thing?
- Question 4: Why are there four seasons in temperate countries?
- Question 5: Should I recycle?
- Question 6: Where is the best place to live on earth?
- Question 7: What food should I buy at the supermarket?
- Question 8: Where should I spend my holidays?
- Question 9: Why are some settlements more crowded than others?
- Question 10: What will happen to developing countries in the future?
- Question 11: Where should I site an industrial park?
- Question 12: Why do countries go to war?
- Question 13: Should the customs of indigenous people be preserved?

Appendix 4.2

Photographs Used in Photo Elicitation Exercise: Stage 1 of Data Collection

	
<p>Photo 1: <a href="http://www.destination360.com/asia/china/great-wall-of-china.php">http://www.destination360.com/asia/china/great-wall-of-china.php</a></p>	<p>Photo 2: <a href="http://www.flickr.com/photos/rocketdude/120668016/">www.flickr.com/photos/rocketdude/120668016/</a></p>
	
<p>Photo 3: <a href="http://www.theworldinreview.com/Articles/04_April_2008/WhatsBehindMigration.html">http://www.theworldinreview.com/Articles/04_April_2008/WhatsBehindMigration.html</a></p>	<p>Photo 4: <a href="http://questgarden.com/27/13/1/060717192931/index.htm">http://questgarden.com/27/13/1/060717192931/index.htm</a></p>
	 <p>© Gary Roberts</p>
<p>Photo 5: <a href="http://worldmap-and-information.blogspot.com/2007/12/world-political-map.html">http://worldmap-and-information.blogspot.com/2007/12/world-political-map.html</a></p>	<p>Photo 6: <a href="http://www.infernalramblings.com/articles/Global_Socio-Politics/2/">http://www.infernalramblings.com/articles/Global_Socio-Politics/2/</a></p>



Appendix 4.2



Photo 7:  
[www.wanderingscotsman.com/.../IMG\\_24072.jpg](http://www.wanderingscotsman.com/.../IMG_24072.jpg)



Photo 8: <http://www.unpluggedliving.com/london-pushing-for-more-recycling-bins/>



Photo 9: [www.telusplanet.net/public/mws/sites.htm](http://www.telusplanet.net/public/mws/sites.htm)  
& <http://blog.newcondosonline.com/tags/new-condos>



Photo 10: [topasiancities.com/Thailand\\_Samui.php](http://topasiancities.com/Thailand_Samui.php)



Photo 11:  
<http://www.houstoncochamber.com/news.php?viewStory=44>



Photo 12:  
<http://blog.wired.com/defense/2008/08/breaking-12000.html>

Appendix 4.2



Photo 13:  
<http://www.anewgreenitude.info/Perspective.html>



Photo 14:  
<http://www.panoramio.com/photo/194118>



Photo 15:  
<http://www.cdhenenergy.com/supermarkets/supermarkets.php>



Photo 16: <http://www.thailandmagic.com/Mae-Hong-Son.html>

*\*Photos downloaded in Dec 2007. Where the photos were the IP of specific individuals, I emailed them to ask for permission to use the photograph in my research.*

### Appendix 4.3

Dear colleague,

I am conducting a pilot research project on:

- the subject conceptions of pre-service Geography teachers
- what factors have influenced these conceptions

This survey is part of this pilot, and is an important step in helping me to refine the research instruments being used. The data collected today might be used in academic publications. Care will be taken to keep all data collected today confidential, and no one will have access to this data but me. No names will be revealed at any point in this research or in subsequent publications.

I would appreciate it if you would fill out the complete survey form, including the final concept mapping exercise. However, you are not under any pressure to take part in this research project if you wish to not do so.

If you have an interest in conducting research at post-graduate level, and would like to participate in an interview, please indicate your interest at the end of this survey.

Thank you for agreeing to take part in this survey!

#### A. General

Name: \_\_\_\_\_ Age: \_\_\_\_\_

Race: Chinese/ Malay/ Indian/ Other      Gender: Male/ Female

#### B. Educational Experiences

5a. Did you take Geography as an 'O' level subject? Yes/ No

b. If yes, which year did you take Geography as an 'O' level subject? \_\_\_\_\_

c. If yes, which school did you study in? \_\_\_\_\_

6a. Did you take Geography as an 'A' level subject? Yes/ No

b. If yes, which year did you take Geography as an 'A' level subject? \_\_\_\_\_

c. If yes, which school did you study in? \_\_\_\_\_

7a. Did you take Geography as subject at University level? Yes/ No

b. If yes, where did you do your degree? \_\_\_\_\_

c.

If yes, when did you do your degree? (e.g. 2004-2007) \_\_\_\_\_

d. If yes, Geography was studied as a: major/ minor/ elective



### Appendix 4.3

If yes, please list the modules you have completed in Geography below.

ei

**Year 1 modules**

eii

**Year 2 modules**

eiii

**Year 3 modules**

f

Do you have an Honours degree in Geography? Yes/ No

fi

If applicable, please list the modules you have completed in your Honours Year.

fii

If applicable, please provide the title of your Honours Year thesis.

8.

Why did you pursue Geography at university (please answer if applicable).

9a.

Have you taught Geography in school before? Yes/ No

b.

If yes, please provide details below (school, levels, streams, length of teaching experience):

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10. Please cite any other work experiences (teaching and non-teaching) that you have had up to this point:

11. In one sentence, what is Geography?

Geography is:

12. What aspects of Geography do you enjoy/ think are worthwhile?

13. Why did you choose to be a Geography teacher?

14. In one sentence, what are the characteristics of an effective **Geography** teacher (as opposed to teachers of other disciplines)?

### C. Concept Mapping Exercise: Please Turn Over

### D. Follow-Up Session

If you are willing to meet me for an interview (not exceeding 45 minutes), please provide me with your contact details.

Email address:

Telephone number:

*Thank you for your time!*

## Appendix 4.4

### Interview Themes for Pilot and Round 1 Interview

**Research Area:**

Subject conceptions

Influences on subject conceptions

**1. Discussion of Concept Maps**

- Describe and explain concept maps
- Clarification and modification

**2. Subject Context – School Geography**

- Experiences of, and attitudes towards, geography (including what ‘doing’ geography means)
- Significant influences and events

**3. Subject Context – Academic Geography**

- Why study geography at university?
- Experiences of, and attitudes towards, geography (including what ‘doing’ geography means)
- Significant influences and events
- Any different from school Geography?

**4. Personal Context**

- Other Geographical Experiences
- Feelings about geography – value and purpose of subject

**5. Teacher Education Context**

- Feelings about teaching geography
- How has preparing to be a teacher influenced subject conceptions?

## Appendix 4.5

*Italics: Tricia*

Regular: Anna

<b>Time</b>	<b>Activity/ Transcript</b>
0.00.00	<p><i>Introduces picture stimulus exercise</i></p> <p><i>Picture 1: Great Wall of China</i> Great wall of China linked to tourism, therefore Geographical</p> <p><i>So what about tourism is Geographical to you?</i></p>
0.00.35	<p>...well the fact that it is about moving from one place to another place, and all that is involved already, so that is Geography.</p>
0.00.43	<p>...and the place that they go to as well is Geography... you know, for example when they go down to China, it is Geographical as well because... well it is a place? And space matters and all that kind of stuff, and you can look at it in terms of the hills and stuff, changing the landscape for human needs and stuff like that. So I suppose that in a way is Geography as well to me.</p>
0.01.49	<p><i>Picture 2: Rainforest</i></p> <p>Is it Geography... I suppose it is you know, more like Physical Geography to me. It looks like a rainforest... and if you link it to secondary school and how they learnt about vegetation and things like that, then I would say that this is Geography.</p> <p><i>Is Geography linked to topics in a text book?</i></p>
0.02.24	<p>Honestly, to me, not really. But because we have been inducted into this whole NIE system and that is constantly at the back of my mind... the syllabus is, you know, and when I look at something now, like as a trainee teacher, I think, yah yah that's Geography, and I use it in my lessons and things like that. But ordinarily if I had seen this before coming into NIE, I don't think I would have associated this with Geography?</p> <p><i>So a picture of a rainforest is not Geography to you? What to you is Geography then?</i></p>
0.03.00	<p>For me, Geography is really, I want to say it had to do with people, but... I also understand that, ok like erosion and all that those are processes, but it wouldn't really fall under Geography you know, like Geomorphology or something like that...</p> <p><i>Then Physical Geography are like distinct branches, kind of like a Science? Then Geography is...</i></p>
0.03.30	<p>Well, if you look at physical processes of like say Natural Hazards and how that affects people, then I would say, ok that is Geographical to me because people are involved in it?</p>
0.04.04	<p><i>Picture 3: Boatful of immigrants</i></p> <p>No. To me it just looks like people on a boat.</p>

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- 0.04.21 *Picture 6: Mixed race family*  
I suppose if you looked at it, I don't know, I would probably link it to anthropology... could be Geography in the sense that they went somewhere to adopt the kid, but not so much?  
*How is anthropology different from Geography to you?*
- 0.04.45 I think anthropology, the main focus would be people? But for Geography, the space that they are involved with...
- 0.05.15 *Picture 4: Trees in different seasons*  
Yah... I mean I suppose, if you look at like changing seasons, and how the world changes and all... yah (this part quite hesitant)  
*So how is this picture of the 4 seasons different from the rainforest picture?*
- 0.05.50 It's a little bit different simply because, well maybe what it is also is how much you can relate to it? I mean I can see the Geographical aspect about the rainforest, but straight away it won't strike me as being Geography, but for this one somehow it just does. And my reason for that... and I'm sure I have one... is that, I don't know, changing seasons affects people, and even like back in school this is just the core of what Geography is, what we learnt at the start, how the earth rotates, and the sun coming in and all that... so I think it sticks with you?
- 00.06.42 *Picture 5: World Map*  
Yah, I mean map of the world, Geography has to do with maps.  
*But there are no people on this map.*
- 0.06.50 Yeah but people live in countries, and I think like political boundaries and all will definitely affect people... yah and I think a map needs to be incorporated in Geography, so you can like see or imagine spatially where the people are?
- 0.07.33 *Picture 7: Upper course of a river*  
Yah, I mean like I said, it is Geography because it is something that we learnt in school lah. So river processes, erosion, that sort of thing...I would relate it to Geography.  
*Ok, so is this the same order as the rainforest?*
- 0.07.47 Yeah, I would.  
*Because it's something that you studied in school...*
- 0.08.01 Maybe like, maybe I need to rephrase that, because a lot of these pictures are coming up. Maybe it's not the kind of Geography that I get excited about? Or really appeals with... the knowledge that I have of Geography. We learn this in school, but what I have been trained in and the kind of Geography that I learned in uni and all, really does not incorporate this part?  
*Ok so you would say you are more interested in the people aspect.*

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- 0.08.34 *Picture 8: Recycling Bins*  
Is this Geography... (long pause)... recycling...no. I mean, you can incorporate it into Geography if you're gonna teach about pollution and all, I know it's in the syllabus and everything, but it is not essentially what Geography is about.
- So essentially again, what is Geography about?*
- 0.08.59 Geography, to me, is about, I suppose the relationship about people and... and space, you know, a man's environment or something like that? Erm, and I think it has to be a two-way thing lah. How the environment affects man, and how man has the ability to change or affect the environment.
- Ok, but would pollution then not fall under this? Or is it just that this aspect of Geography doesn't excite you?*
- 0.09.38 Erm...(long pause), yah, I mean, we can say that it is Geography, but then a lot of things can be made to become Geography, but I think essentially what I think the core components of Geography are, well pollution yah, but recycling should not be like you know a main aspect of Geography lah. That's what I'm saying.
- So then the main aspect would then be focusing on...*
- 0.10.07 Ok, if you look at pollution, then ok, yes yes I would say that, how we kill the earth and burn down trees and all that, ok. But for recycling, somehow to me it's just like if I put it on a scale of what is important, it doesn't lay very high up. It's like a subset of a subset or something like that.
- Picture 9: Rural and urban settlement*
- 0.10.45 Yes this is to me. Like comparing living environments, you know...so this would be like more rural area, urban area
- Picture 10: Beach with windsurfing boards*
- 0.11.17 Yah, I'd want to say, tourism right, becomes a big part of Geography
- [interruption because the room was double-booked and we had to go look for another venue; Recording starts over again]
- Ok so you were saying, tourism?*
- 0.00.05 It is Geography because I think, like going back to the Great Wall, like an attraction, people move to these areas, so has to do with location of place...
- Picture 11: Industrial park*
- 0.00.40 Settlements, it would be Geography for me. People living in an area, trees being cut down to build houses, you have like industries here, so I would say yes.
- 0.01.08 *Picture 12: Troops coming off helicopter*  
This one ah, is it Geography...(long pause)... I think it will be different from what we learned, but war, you know when I see this I think of like politics, you know, so... but you know, it's about invading another country and taking somebody else's space, or resource or something like that right? So erm, it can be?

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*But the first thing you mentioned was politics. How would politics, like political science, differ from Geography?*

0.01.45 I think, you know like, when you look at political science right, the issues straight away, like war and the fighting or the peacekeeping, those are the things that would come up. But if I look at it from a Geographical standpoint, I think you've got to know very much more about the country, not so much land, that's oversimplifying it, but it would be classified for me more under political science than Geography, this picture.

*Because Geography is more...*

0.02.32 More... I don't know you know, I'm beginning to see that a lot of my thoughts about what Geography is, is more about, more influenced by the kind of education that I have had? So you wouldn't ordinarily link this to Geography, but I can see the Geographical aspects...like natural resources things like that.

*Picture 13: House in shanty town*

0.03.15 Yeah, I would say it was Geography. You know you talk about people's living conditions in a less developed area? The living conditions of people in a place. That's why I see it as Geography.

*Picture 14: Mt Fuji*

0.03.41 Yah, erm, it is Geography, but like I mentioned earlier about the rainforest and the river right? It is, I can understand why it is... But like I said right, because I am more inclined towards Human Geography, it's not something that I get excited about. But I can understand why it is Geography.

*And you understand it has to do with Geography because?*

0.04.12 Because it has to do with you know, with processes that have to do with the earth's surface, how mountains form and things like that.

*Picture 15: Supermarket*

0.04.28 No, it's a supermarket. Ok lah, I can look into it and say, ok the global production networks, how things get processed in one country, and transferred to another, and the larger scale of the interaction of people across place, space and all that, so I can see the Geography in it. But it wouldn't be something that I would classify straightaway as Geography.

*Picture 16: Padaung females*

0.05.05 When I look at this, I think more of you know, social customs, culture... that sort of thing which can be Geography also, but would fall more maybe under anthropology or something like that?

0.06.01 *Requests that pictures be sorted from most Geographical to least Geographical.*

*[Respondent groups pictures into HG, PG and then Subsets]*

0.08.35 *[HG: 5, 1, 10, 9, 11, 13  
PG: 14, 7, 2, 4  
Subsets: 15, 8, 12, 16, 6, 3]*

0.10.06 *So why would the Human Geography photos be listed as more*

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*quintessentially Geography?*

- 0.10.12 Because ah, I think, it's not so much Human Geography, but you can see the Human and Physical interacting... [long pause] So when you look at the mountain range, the rivers, and the trees and all that, yah I think they are Geographical as well. Not to say that they are less important, but I think like, like you mentioned earlier, it's more like a Science, which is something that, in the Singapore education system is not something that we go very much into?

*In Geography?*

- 0.11.08 Yah in Geography, so then I guess I see it as maybe less Geographical as compared to the ones where you see the Human-Physical interaction.

*When you say the Singapore education system, are you referring to Geography at O levels, A levels, uni level?*

- 0.11.30 Especially uni, but even in like Primary and Secondary right, what we ingrain in people is that the important part is not so much how the processes take place, we're talking about Physical processes ah, but how it affects humans. So that's why that's always something I have always kept in my mind.

*Because we've always been so Human-centred.*

- 0.11.55 Like I've had friends who went overseas and they did studied on rocks and rivers, but it doesn't fall under Geography. It's in the Science faculty, and you do a Bachelor of Science.

*Whereas Geography is separate.*

Yah it's separate.

*So you think the education system has also kind of structured the way that you think.*

- 0.12.15 Definitely.

*What about the subsets?*

- 0.12.25 The subsets basically right, erm like this one (supermarket) to me it's essentially Geography because... well it is Geography, but not something I would be ranking very high up there because (long pause)... I don't know maybe I'm thinking maybe it should have been up there.

*It's ok, slowly think it through.*

- 0.13.05 This picture right, to me, represents like production networks in the world, so you would first have to look at how people interact with each other or countries on a larger scale, before you actually zoom into this aspect of like food. It's not basic Geography.

*And would you say that is the same for all the rest of the photos?*

- 0.13.54 For this one yeah (recycling). This one (war), I would say is a bit too far-fetched. And this (padaung women), I mean you can see the Geography in almost anything, but I wouldn't necessarily classify as Geography. I guess



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these just (Padaung, mixed race) come across more as anthropology than Geography for me because it's just more focused on people. This one is not lah, it's just people on a boat.

### *General discussion*

#### *Can you tell me a bit about your experience of school Geography and University Geography?*

0.20.04 For me, O level, I did it at [name of school]... I did it in 1998. To be honest, it was probably the worst I ever had in Geography. It was like underline and write point one, point two, that sort of thing. And at that time, what we did to try to do well at Geography was to make our own notes, and then we would like draw all the diagrams and label them and practice drawing them, and memorise the notes from A to Z. It was taught that way, what we did was come to school with different coloured pens and just underline, point one point two point three... That was secondary school Geography for me and I really didn't enjoy it at all.

0.21.45 And that's when I said, if I ever become a teacher, I'll become a Geography teacher, just so that I can teach Geography the right way.

0.21.55 A levels I had good experiences of Geography. I think it really depends on who the teachers are. I think for the first time right I saw people get excited about what they were teaching... I did it at [name of school]... [name of teacher], I loved him, him and [name of teacher]. [name of teacher] right, he was one of those, he taught us Physical Geography, and it'd be like it's raining, let's all go stand under this hut and watch saturation overland flow. And because [name of school] is on a hill, we would do slope studies and have lessons on the hill and learn about the sheer impact and stress and all that kind of stuff. And so, he was really very excited about what he taught, even if it was in a lecture theatre. It was one of those where you don't need any notes, and he would just stand there and get you interested about the subject, so I think that really hooked me onto Geography.

0.23.02 And for Human Geography, I really took a liking to it in JC, because when we went to JC, we really understood the Human aspect of it, because he really made it very real to us.

#### *So what about when you went on to uni?*

0.23.45 Actually I was a Literature major and then in my 4<sup>th</sup> sem(ester), then only I changed my major to Geography, so I hadn't done my 101 module until then... And then in my 3<sup>rd</sup> sem, I did a module on Gender or something, one of those by [name of lecturer]... she's good, and then from then I thought, I think I'm just wasting my time with Literature and I decided to change my major to Geography. And that's when I did a lot of Human modules lah at uni.

#### *What sorts of modules did you do?*

0.24.39 I did Gender, I did all the cultural Geography modules, then I also really liked Economic and Political Geography. I was really bad at the Physical ones. We had to do some Atmospheric one, I got a C for that. That was brutal and I think that's why I really associate Physical Geography with a Science because we had to do so much calculation for that... and because of the way Geography is

## Appendix 4.5

structured in school until we reach uni, or even the 1101 modules, there is not backing to teach you how to do all these calculations, so when we had to do these modules, no one in the group knew how to do it, and you had to go and borrow all these books and read up on Physics and Chemistry in order to understand how it works, and then also it's still very very difficult, you see?

*Were there any important influences while you were growing up in terms of how they affected your understanding of Geography? Over and above what happened at school or at uni.*

0.26.42 I know definitely traveling, like when I go and see blowholes... the most Physical traveling I did was when I went for a drive along the coast of Western Australia? And we went and saw the Pinnacles, and we also had like caves and those arcs, blowholes that sort of thing. And when you actually see it and all it's like, wah that's pretty cool... This was while I was at uni, just a holiday with some friends.

0.27.34 Geography was just something I did in school, growing up. I was never like a nature lover or anything like that, you know.

*Why did you switch to Geography at uni?*

0.28.20 It was definitely the Geography lecturers at NUS, they're much more approachable and friendly than the Literature ones. They're very very nice and they're so supportive and nurturing, you know, it just makes you feel that when you go for Geography class, you're like this woman is so nice, she really cares, you're not just like one person in a class. Like in Lit, I found it to be very impersonal, they would just come in, do their thing and that's it. The fact that there was a human connection, it's an important aspect, but not a main thing.

0.28.55 At the end of the day, it's something I can be excited about. Before this, I was doing PR before I became a teacher, and I loved my job, but the thing is it's so corny to say that it's something I'm not excited about, but like when I can talk to people about certain things to do with Geography, like even when I did relief teaching. I just liked going into the classroom and talking about these things?

*You mentioned that you were doing PR, so what did you do after you graduated?*

0.29.30 After I graduated, I was doing editing at [name of publisher] for about a year and a half... I concentrated mostly on the Geography textbook. Earth Our Home (lower sec) and Geog Elective (upper sec). And then I was with Mindef doing media relations for about 6 months. It consumed my whole life, and I couldn't do it anymore. And then all along, I always felt like I want to be a teacher, but it's one of those things when you graduate, I refused to be a teacher, because like all my friends and I had this pact. We would never cross over to the dark side. We would all go and work in the private industry and never become a teacher.

0.30.45 I think when I was in Mindef, even though it was a job I was excited to do, I was really happy with what I was doing, this was always at the back of my mind: what if I was teaching? And because I had relief-taught before and stuff like that. It's just a nagging pull that was always there. And then my friends, you know in Singapore the guys graduate later than the girls, and a lot of the guys went into teaching as well, and then they would always be talking about it, and that was something that kept me thinking about teaching.

*Did you do any contract teaching before you came here?*

0.31.35 I did. I signed the bond with MOE in September, so from September to November.

*But you mentioned you have done relief teaching?*

Yes, and also while I was at uni I also taught Speech and Drama, and Creative Writing too.

*What are your experiences of teaching Geography and how do you feel about teaching it?*

0.32.51 I think I am a little bit more confident teaching secondary school, simply because I did the textbook before, I kind of know the syllabus and the content and I've been through with MOE what needs to come out. When I was contract teaching, it was for A levels [name of school], and when I was there we did Lithosphere which was really super Physical, something I am not strong at at all. For me my fear is really the content part of it, even with Human, things change all the time. The thing about being a teacher there is a need for relevance lah, you need to stay up to date in everything. So I feel you must be really diligent to go and read up on all these kinds of things and keep at it.

*How do you think Geography should be taught?*

0.34.10 I think when the teacher stands in front of the class, you really have to believe what you're teaching them, and it's not easy to get excited about things all the time. But I think there's a difference between just going in and delivering the materials, and going in and delivering the materials in a way that lets the students feel that this is something that can be important to them, this is something that they want to know? And just the way that you present to your class, the way that you do things with your students, just like that hook thing to get them... I think it also has to do with the personality of the teachers, that's important.

*Do you think that to teach content well you need a mental picture about what the core of Geography is, what is the big picture?*

0.35.50 I think that after doing this exercise right, my conception of what Geography is, I find it very skewed. And to go into a class and impart that onto the students would be unfair, but in some way I can't help the fact that I get excited over certain things, but a good Geography teacher would actually give equal weightage to whatever topic that he is teaching, and you have to highlight the important things to the students, you have to show it to them because that's what a teacher's supposed to do.

*So it's not so much about teaching your personal interests, but an understanding of that subject and what's important in that subject?*

0.36.46 Correct, and also if you can help the students find their interests, then that would be a bonus lah.

*What else makes someone an effective Geography teacher? Any other attitudes or even physical attributes that you might want to consider?*

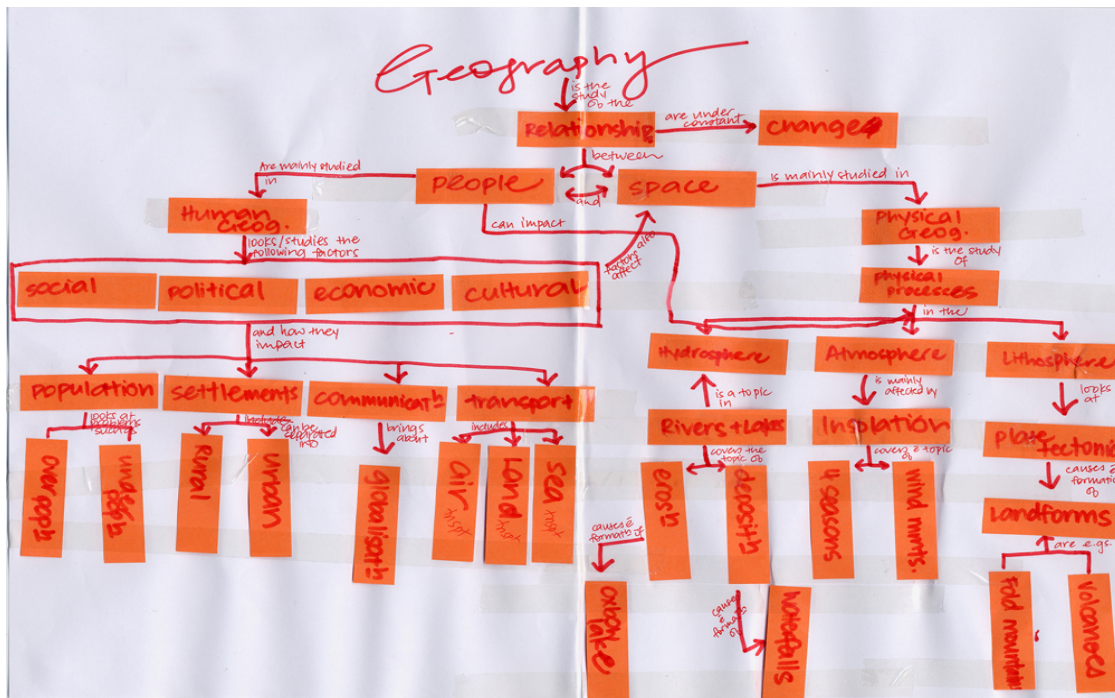
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- 0.37.29 I think for a Geography teacher right, they have to be very gung-ho, let's go trekking up Bukit Timah today. I think if they can have that kind of personality and not be afraid to go and rough it out in the mud and things like that, then that would be good. Because that is really one way to get the students excited at this secondary school level or whatever. You organize these fieldtrips, you bring them out and that would really let them see what it is that they are studying?
- 0.38.15 I am really quite against the arm-chair Geographer kind of teaching style. It's hard to do it here in Singapore, but if you can find an avenue where that's possible... I'm not saying we must always have to go and climb a hill or whatever, but if you can take them out of the class and bring them down to walk around a heritage district or whatever, it's something for them to do and see rather than just be in class. Because those are the lessons that I remember and made an impact.
- 0.38.58 I wish that less is covered in the syllabus. I mean I think this is what everyone will say, that they need to get through a certain amount for exams, and because there is so much to get through you lose these extra things which actually can make a really big impact on the lives of the kids.

*Thanks respondents and informs respondents of follow-up interviews.*

## Appendix 4.6

### Data Analysis: Anna Concept Map, 15 May 2008



<u>Concepts</u>	
<ul style="list-style-type: none"> <li>• What are the 'key concepts' (as defined by respondent) on the map?</li> </ul>	Relationships between people and space Relationships are under constant change
<ul style="list-style-type: none"> <li>• Description of structure of map</li> </ul>	Divides map mainly into Human-Physical Geography, but stresses the linkages between human-physical interactions. Under HG, identifies main factors (social, political etc) and then how these affect specific aspects of the Human Landscape (population, settlements etc), before breaking these down into specific areas of study in Geography. Under PG, stresses physical processes in the various physical spheres (hydrosphere, atmosphere etc), then breaks these down into specific areas of study within PG.
<ul style="list-style-type: none"> <li>• Are the top 2 levels dominated by geographical concepts?</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Are the nodes on the map reflective of the broad scope of Geography or do they focus on specific themes only?</li> </ul>	Broad and comprehensive in terms of covering content, but at the lowest levels of map, only gives examples of what might be studied under each main area of Geog (e.g. underpopulation and

## Appendix 4.6

	overpopulation in Population Geog)
<ul style="list-style-type: none"> <li>• More school or academic Geog, or mixed?</li> </ul>	School Geog
<ul style="list-style-type: none"> <li>• What important concept/areas (not specific themes or areas of study) might be 'missing' on the map?</li> </ul>	Geog thought Values Management Skills Fieldwork
<b><u>Linkages</u></b>	
<ul style="list-style-type: none"> <li>• Do the vertical linkages make sense?</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Do the cross linkages make sense?</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Are there any major misconceptions evident on the map?</li> </ul>	No
<b><u>Subject Orientation</u></b> (after Walford, 1996) <sup>1</sup> Spatialist/ Interactionist/ Synthesiser/ Placeist	Interactionist? Synthesiser?
<b><u>Changes made to concept map</u></b>	
<ul style="list-style-type: none"> <li>• Round 1 interview</li> </ul>	Added an arrowhead to show that Physical processes affect people
<b><u>Influences</u></b>	
<ul style="list-style-type: none"> <li>• Influences (as defined by respondent) on concept map</li> </ul>	Singapore education system divides geog into Physical and Human Geog, and focuses on people. Personal conception of her role as a teacher. Work experience with textbook publisher
<ul style="list-style-type: none"> <li>• Influences (as defined by respondent) on subject conceptions but not seen on concept map</li> </ul>	Influence of JC teacher on fieldwork Geography as a gung-ho type of subject associated with fieldwork – due to influence of 'good' geog teachers
<ul style="list-style-type: none"> <li>• Attitude towards geog</li> </ul>	Love of subject related to its relevance to her travels Love of subject at uni level related to the personal connections she had with her lecturers

<sup>1</sup> As noted in Meeting 15 with supervisors, this typology is problematic as the terms used do not seem to be compatible and complementary. I will use this for now, but am certain that the categories need to be expanded and refined (and renamed) as I undertake the analysis. Increasingly uncomfortable with using Walford because his method was so different from mine.

## Appendix 4.7

### Interview Themes for Stage 2 of Data Collection

Research Areas	Interview areas/ themes	Checking Data/ Respondent Comments
<p>1. Subject conceptions and influences on subject conceptions</p>		<p>Discuss their previous concept maps and conceptions (quote from interviews).</p> <p>Remind them of the discursive influences they cited previously.</p> <ul style="list-style-type: none"> <li>• Ask them to clarify and elaborate on influences that were not clear.</li> <li>• Double check if there were other influences which they did not discuss.</li> </ul>
<p>2a. Decisions made about 'good' teaching and influences and tensions surrounding these decisions</p>	<p>Discuss what they feel the attributes of 'good' geography teachers are, and why they feel these attributes are important. Probe for embodied attributes if relevant.</p> <p>Discuss the school they were posted to and the school culture, mission etc. Discuss the staff and student relationships in the school generally. Any conflicts or issues faced?</p> <p>Ask them biographical and work data on their school-based mentors. Ask them about the support and advice they received. Any conflicts or issues faced?</p> <p>Discuss the classes they taught (level, stream), and the types of students in the class (background, academic ability etc). Any conflicts or issues faced?</p> <p>Discuss the topics/themes they taught during teaching practice and the time frame they had to teach these in. Any problems or issues faced?</p> <p>Ask them if the coursework at the NIE was applied to their teaching. Why or why not?</p>	

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	<p>Did their NIE supervisor influence how they taught? Were there any conflicts between the advice given by mentors in school and their NIE tutors and supervisor? How did they resolve these?</p>	
<p>2b. Influence of subject conceptions on decisions</p>	<p>Ask them to select one lesson plan from their Practicum File, and discuss why they planned the lesson like that. Ask them how the lesson went, and if they thought the lesson was successful, and why.</p> <p>Ask them if they felt this was fairly 'typical' of all the lessons they taught. If so, why did they usually teach like that? If not, why was this lesson different and in what ways different?</p> <p>Refer them to concept map and prior discussion on subject conceptions. Ask them to what extent they drew on their subject conceptions articulated previously in planning this lesson as well as their other lessons. Why did they draw/ not draw on their subject conceptions?</p>	
<p>3. Changes to subject conceptions after teaching practice</p>	<p>Discuss if they would like to make changes they to their concept map after Teaching Practice. What are these changes? Why these changes?</p>	



Appendix 4.8

**Preliminary Data Analysis PF and Interview 2: Anna, November 10 2008**

PF: Practicum File

AF: Assessment Forms and Feedback

IT2: interview 2: Hour.Min.Sec

Area of analysis	Evidence
<p><b>Types of lessons</b></p> <ul style="list-style-type: none"> <li>• Typical lesson structure: Recap; use of ppt to present new information (teacher-led); student-centred activity for students to construct knowledge, demonstrate understanding; summary of main points, checking for student learning and understanding, usually no homework</li> </ul>	PF
<ul style="list-style-type: none"> <li>• Use of co-operative learning strategies: pair work and group work e.g. forest packs for TRF, comparing different types of vegetation</li> </ul>	PF
<p><i>I try to do it (assign roles in group work) every lesson. Sometimes it works, sometimes it doesn't, but I just do it ok.</i></p>	IT2: 0.41.55
<p><i>And when they move into pair work, it's not as disruptive as when they straight away jump into group work. Pair work allows them to just bounce ideas off one another, and with the group work then they can actually discuss more, and then come up with something more substantial.</i></p>	IT2: 1.38.29
<ul style="list-style-type: none"> <li>• Getting students to construct own knowledge and making sure students understand the concepts e.g. jigsaw for earth processes, where to site rain gauge, how weather affects people, climatic zones and location on earth, why we use a Stevenson screen</li> </ul>	PF
<p><i>Because I wanted them to, I picked out what I wanted them to understand first, and the concept of trying to get them to comprehend the movement of plates just from the video, I felt they couldn't do it... So for this introduction to landforms and rocks, I really wanted it to be something like that. It's the simplest thing I could think of, I just let them play around with it and get their own conceptions and own ideas.</i></p>	IT2: 0.47.20
<ul style="list-style-type: none"> <li>• Experiential learning: observing trees, pressure exercise using newspaper and test pad, jigsaw for earth processes</li> </ul>	PF
<p><i>When I brought my class out, I'm so shocked at how that small little tree activity which I would have thought to be really useless, before my CT ever brought it up to me, but just by bringing them down, it made a world of difference. I went for only 1 period, but they loved it, they really, really loved it.</i></p>	IT2: 0.56.50
<ul style="list-style-type: none"> <li>• Socratic questioning techniques e.g. in climate</li> </ul>	
<ul style="list-style-type: none"> <li>• Use of whiteboard to record answers and summarise lessons for climate, natural vegetation, deforestation</li> </ul>	PF
<p><i>I've found out the whiteboard is really a very very important tool. Because I like to ask questions and get the kids to give me the key words, the responses, whatever it is, and so I'll write it on the board. Because at the end of my lesson when I do my summary, I try to do a mindmap, and then whatever they've spoken is all there. I don't know, somehow I feel they can draw a better link because somehow they contributed.</i></p>	IT2: 0.39.50
<ul style="list-style-type: none"> <li>• Use of student mindmaps: weather affects people, deforestation, TRF as a means of summarizing and providing overview of main points of lessons</li> </ul>	PF
<ul style="list-style-type: none"> <li>• Less use of workbook and more use of own worksheets as time went by</li> </ul>	PF

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<b>Influences on Lessons</b>	
<ul style="list-style-type: none"> <li>• Influence of CT was very large <i>My Geography CT was awesome. He's very very good... I think he really made me see right, above and beyond the nitty gritty things.... he was really good in the sense that he saw that and he said, don't push yourself too hard and he came up with this thing where he said, you just have to come up with two points that you want them to learn in the lesson and forget about everything else. As long as they can tell you these two points, then your lesson is fine.</i></li> </ul>	IT2: 0.20.34
<p><i>Yah, my CT was very good at letting me take my time and do that. I don't know if he anticipated that somebody new was going to come and take over, but he covered a lot of things in the early part of the year already, and he told me, you have one term here, you will just need to teach them Atmosphere and Natural Veg, they just need to get their feet wet in Natural Veg... he believed also in this kind of experiential... so things like when we learnt about the elements of weather right, normally I would have expected that we do temperature one lesson, rain one lesson, but just on rain itself ah, just on where to situate a rain gauge, he let me have two lessons, two periods, just to bring them around the school. Why you shouldn't put it here, why you should put it there.</i></p>	IT2: 0.31.44
<p><i>And when I did Natural Vegetation, at the start I just wanted to go into different types, but he said, stop, some of these kids have never even touched a tree before, you know?</i></p>	IT2: 0.31.44
<ul style="list-style-type: none"> <li>• Influence of supervisor from NIE limited to supervised lessons <i>My sup, her number one priority was classroom management. And in this school ah, really cannot.</i></li> </ul>	IT2: 0.25.48
<p><i>Yah, I wouldn't say there was such a drastic change, just in terms of, like the lesson-wise, no. They would still be the same, whatever I did would be the same. But erm in terms of the management, I got a whistle and everything for like when the sup comes. Of course before that I'd train the class with the whistle thing. It was the only thing that worked.</i></p>	IT2: 0.26.35
<ul style="list-style-type: none"> <li>• CT versus sup <i>My CT always said, when your sup comes down, it's a lights, camera, action kind of thing. So you have to doll it up because it's your grade. If you want to do it for every lesson you will die. So he was very realistic in telling me that.</i></li> </ul>	IT2: 0.25.48
<p><i>He said, you look so stressed that it's not even you, you want to have a good time with the kids, but you're holding yourself back so that you can be strict, so that they will sit down, and just don't do that, ok. If you feel that you want to have a vibrant class, it's ok that ten kids talk at the same time because you feel you can manage all of them. You just have to justify yourself to your sup and tell them that this is the kind of classroom that you and your students are comfortable with.</i></p>	IT2: 0.26.35
<ul style="list-style-type: none"> <li>• Influence of NIE very limited <i>I feel that the activities we did in class... the classroom activities, they were really pitched for higher, students with higher abilities.</i></li> </ul>	IT2: 0.23.10
<ul style="list-style-type: none"> <li>• Influence of school culture <i>Like the first staff meeting that we had, and every staff meeting that I go for, what is always flashed to us is you know the O level results and then they had to meet a certain criteria so that they can get Gold or Silver, then after three years they can win some award... so that is the focus of every staff meeting.</i></li> </ul>	IT2: 0.17.50
<ul style="list-style-type: none"> <li>• Exam orientation and type of students made it hard to always use constructivist teaching methods but generally persevered and broke the ice over time <i>So initially I had a lot of, you know, oh I want to make them draw the links themselves</i></li> </ul>	IT2: 0.12.44

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<p><i>and see how it's relevant outside, but I realized that with the kids that I was dealing with, I really couldn't do that a lot. I could do that sometimes but not a lot lah. A lot of times it's still, I had to go back to the syllabus.</i></p> <p><i>... it's so hard you know. I've never been in a class where there's complete silence, even the best class is like that. And I found it a little weird. I don't know if this is what actually happens in neighbourhood schools, but I found it to be very different.</i></p> <p><i>I don't know what it was with the class but they were, they were not very open, like they wouldn't even do group work. I was very shocked with this incident that happened. Like when I ask them to share answers with their friends right, doing group work, they cover their work. I said you have to share, this is a group thing, they said, why should I tell him the answer. They're not very keen on sharing, they hate group work. They just want you to sit down and lecture them and that's all.</i></p> <p><i>Yah, because as much as I want to make them interested in the world and in life and all that kind of stuff right, at the end of the day, this is what they need to know. You know, like breaking down the topics. Maybe because the school that I went to, the ability of the students was not very high, so I think in that aspect I really had to just go back to the basics and teach them. You know, I tried to make the world still relevant to them, but in the ways in which I challenged them or what I could bring into the classroom, it was limited because these kids were already very weak and what little time I had with them, I felt like huh, I had to focus on all these curriculum things.</i></p>	<p>IT2: 0.19.32</p> <p>IT2: 0.49.21</p> <p>IT2: 0.11.47</p>
<p><b>Influence of subject conceptions</b></p> <p>Linkages within topics e.g. overview of elements of weather to scaffold topic, flashed throughout topic</p> <p>Linkages across topics: weather and climate and rotation of earth, sun's angles; climate and natural vegetation</p> <p>Within weather, taught formation of clouds though it wasn't in syllabus Inclusion of data collection, presentation and interpretation skills explicitly in lessons: weather, climate, natural vegetation</p> <p>Importance of experiential learning and fieldwork seen in lessons, but also needed prompting from CT</p>	<p>PF</p> <p>PF</p> <p>PF</p> <p>PF and IT2</p>
<p><b>Influence of assessment by mentors</b></p> <p>Generally good and positive assessments, moderator called in and received a distinction for practicum</p> <p>Supervisor generally gave proficient, acceptable for feedback and evaluation or classroom management, outstanding for personal qualities. Felt that lesson planning, range of activities, mastery of content were all good. Gave advice on managing groups and group dynamics (more instructions and scaffolding before and during activities) and more Q&amp;A needed.</p> <p>CT gave excellent for professional qualities, acceptable for others improving to proficient and excelling as time went by. Felt that lesson planning, range of activities (esp co-operative learning), teaching students skills of data interpretation and extraction of info all good. Time management could be improved (initially), by reducing content and increasing skill development. More instructions for groupwork, more time for students to share.</p>	<p>AF</p> <p>AF</p> <p>AF</p>

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<b>Influence of TP on Subject Conceptions</b>	
<ul style="list-style-type: none"><li>• Importance of infusing skills into concept map</li></ul>	
<p><i>I find an element missing as I look at it now, which is the skills part. When I organized my concept map before, it was organized as topics or how I would categorise Geography, but as I went and did my practicum what I have come to realize is that one important aspect that I need to revisit ever so often with the students is skills lah.</i></p>	IT2:0.00.23
<p><i>I think skills would actually need to be integrated into every topic you know, so how would I integrate it? I think it would be a separate component but I need to connect it to every topic.</i></p>	IT2: 0.01.10
<p><i>When I started doing my practicum, I initially started off by focusing on the topic and content for every topic right, but then I realized when I set my students work to do, they could do it, like writing and all, but to get them to perform better, I realized that when I dedicated a certain part of my lessons to skills, or even my whole lesson focused on skills right, then that would help them to understand the topic much more...Because when I use a map to explain a topic to them, they know what to look out for, and understand what I'm trying to tell them.</i></p>	IT2: 0.01.52

## Appendix 4.9

### Interview Themes for Stage 3 of Data Collection

#### A) Cultures of Influence Mapping Exercise

##### **Factors Examined:**

##### **Subject conceptions**

- Knowledge of content and linkages in Geography
- Geography's paradigms
- Beliefs and values (about geography and teaching geography)

##### **National Education system**

- Education policies
- Promotion and assessment systems

##### **Teacher Education (NIE)**

- Education paradigms
- Curriculum
- Teaching modes
- Assessment modes
- Mentors

##### **School Context**

- School culture
- Students
- Colleagues/ mentors
- School curriculum/ timetable/ workload

##### **Personal**

- Family background
- Work experience
- Travel
- Hobbies/ interests
- Beliefs and values (non-geographical)
- Others

#### B) Interview Themes

<b>Research Questions</b>	<b>Interview areas/ themes</b>	<b>Checking Data/ Respondent Comments</b>
2 Influences on and tensions surrounding	Discuss their Cultures of Influence Maps and the discursive influences that were important to their Teaching	

## Appendix 4.9

decisions about 'good' teaching	Practice.	<p>Share my analysis of the influences on their lesson plans with them (formed by Interview 2, and my analysis of their Practicum File materials).</p> <p>Ask them to comment on any contradictions between my analysis and their maps, and to clarify why they think this has happened.</p>
2. Influence of subject conceptions on decisions about good teaching		<p>Discuss if they agree with my comments about the links between their conceptions and their lesson planning. Why, and why not.</p>

Anna	Cross-coding of documents for analysis
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**Areas of Analysis**

- 1a. Conceptions of geography.
- 1b. Discursive influences on conceptions.
- 2a. Discussion of practice.
- 2b. Extent to which subject conceptions used in teaching.
- 2c. Other discursive factors that influenced teaching.
3. How teaching influences subject conceptions.

**Sources of Evidence (SEV)**

- Concept map (CM)
- Interview Transcript 1 (IT1.1, time: 0.00.00; IT1.2, time: 0.00.00) timer reset because we had to stop recording and start over.
- Interview Transcript 2 (IT2, time: 0.00.00)
- Interview Transcript 3 (IT3, time: 0.00.00)
- Practicum File Documents (PF, doc number: 1, 2, 3 etc)
- COI Map

RQ	Analysis/ Data	SVE
1a	<b>Geography is the study of the relationships between people and space.</b>	CM
	...you can look at it in terms of the hills and stuff, changing the landscape for human needs and stuff like that. So I suppose that in a way is Geography as well to me.	IT1.1:0.00.43
	Geography, to me, is about, I suppose the relationship about people and... and space, you know, a man's environment or something like that? Erm, and I think it has to be a two-way thing lah. How the environment affects man, and how man has the ability to change or affect the environment.	IT1.1:0.08.59
	Settlements, it would be Geography for me. People living in an area, trees being cut down to build houses, you have like industries here, so I would say yes.	IT1.2: 0.00.40
	Yeah, I would say it was Geography. You know you talk about people's living conditions in a less developed area? The living conditions of people in a place. That's why I see it as Geography.	IT1.2: 0.03.15
	<i>So why would the Human Geography photos be listed as more quintessentially Geography?</i> Because ah, I think, it's not so much Human Geography, but you can see the Human and Physical interacting.	IT1.2: 0.10.06
1a	<b>Not just space in itself</b>	
	For me, Geography is really, I want to say it had to do with people, but... I also understand that, ok like erosion and all that those are processes, but it wouldn't really fall under Geography you know, like Geomorphology or something like that...	IT1.1:0.03.00
	Well, if you look at physical processes of like say Natural Hazards and how that affects people, then I would say, ok that is Geographical to me because people are involved in it?	IT1.1:0.03.30

- Yeah but people live in countries, and I think like political boundaries and all will definitely affect people... yah and I think a map needs to be incorporated in Geography, so you can like see or imagine spatially where the people are? IT1.1:0.06.50
- So when you look at the mountain range, the rivers, and the trees and all that, yah I think they are Geographical as well. Not to say that they are less important, but I think like, like you mentioned earlier, it's more like a Science, which is something that, in the Singapore education system is not something that we go very much into?  
*In Geography?*  
Yah in Geography, so then I guess I see it as maybe less Geographical as compared to the ones where you see the Human-Physical interaction. IT1.2: 0.10.43
- 1a **Not just people in themselves**  
I think anthropology, the main focus would be people? But for Geography, the space that they are involved with... IT1.1:0.04.45
- When I look at this, I think more of you know, social customs, culture... that sort of thing which can be Geography also, but would fall more maybe under anthropology or something like that? IT1.2: 0.05.05
- I guess these just (Padaung, mixed race) come across more as anthropology than Geography for me because it's just more focused on people. This one is not lah, it's just people on a boat. IT1.2: 0.13.54
- 1a **Relationships between people and space are under constant change.**  
...you can look at it in terms of the hills and stuff, changing the landscape for human needs and stuff like that. So I suppose that in a way is Geography as well to me. CM  
IT1.1:0.00.43
- 1a **Geography involves the movement of people.**  
well the fact that it is about moving from one place to another place, and all that is involved already, so that is Geography. IT1.1:0.00.35
- It is Geography because I think, like going back to the Great Wall, like an attraction, people move to these areas IT1.2: 0.00.05
- 1a **Makes a distinction between school Geography and the Geography that excites her (linked to university level Geography)**  
*Is Geography linked to topics in a text book?*  
Honestly, to me, not really. But because we have been inducted into this whole NIE system and that is constantly at the back of my mind... the syllabus is, you know... IT1.1:0.02.24
- Maybe like, maybe I need to rephrase that, because a lot of these pictures are coming up. Maybe it's not the kind of Geography that I get excited about? Or really appeals with... the knowledge that I have of Geography. We learn this in school, but what I have been trained in and the kind of Geography that I learned in uni and all, really does not incorporate this part? IT1.1: 0.08.01
- Yah, erm, it is Geography, but like I mentioned earlier about the rainforest and the river right? It is, I can understand why it is... But like I IT1.2:0.03.41



said right, because I am more inclined towards Human Geography, it's not something that I get excited about. But I can understand why it is Geography.

I don't know, I somehow feel that the other type of Geography that I have in my mind is something like of a higher level, doesn't go into all these concepts like rivers and rocks and things like that. But maybe allows more space for research and exploring things, that sort of thing. IT2: 0.04.12

The reason why I drew this was because I thought going into school, this is the kind of Geography that is expected of us, to be taught to the students lah. Erm...yah...I don't know I suppose in my mind right, there is a set criteria or framework in terms of content and topics and all that that needs to be taught to the students, and I mean ultimately, as much as I like this other type of Geography, we're preparing them for the exams ah, you know. And this is what is needed you know. IT2: 0.06.05

1a **Makes a distinction between what is core in Geography, and what is a subset/theme** CM

Ok, if you look at pollution, then ok, yes yes I would say that, how we kill the earth and burn down trees and all that, ok. But for recycling, somehow to me it's just like if I put it on a scale of what is important, it doesn't lay very high up. It's like a subset of a subset or something like that. IT1.1: 0.10.07

Ok lah, I can look into it and say, ok the global production networks, how things get processed in one country, and transferred to another, and the larger scale of the interaction of people across place, space and all that, so I can see the Geography in it. But it wouldn't be something that I would classify straightaway as Geography. IT1.2: 0.04.28

This picture right, to me, represents like production networks in the world, so you would first have to look at how people interact with each other or countries on a larger scale, before you actually zoom into this aspect of like food. It's not basic Geography. For this one yeah (recycling). This one (war), I would say is a bit too far-fetched. And this (padaung women), I mean you can see the Geography in almost anything, but I wouldn't necessarily classify as Geography. IT1.2: 0.13.05

1a **Feelings about Geography (affective component of conceptions)**

Geography was just something I did in school, growing up. I was never like a nature lover or anything like that, you know. IT1.2: 0.27.34

At the end of the day, it's something I can be excited about. Before this, I was doing PR before I became a teacher, and I loved my job, but the thing is it's so corny to say that it's something I'm not excited about, but like when I can talk to people about certain things to do with Geography, like even when I did relief teaching. I just liked going into the classroom and talking about these things? IT1.2: 0.28.55

1a **Beliefs about how geography should be taught**

And that's when I said, if I ever become a teacher, I'll become a Geography teacher, just so that I can teach Geography the right way. IT1.2: 0.21.45

(reference to way Geog was taught poorly in sec school)

- I think when the teacher stands in front of the class, you really have to believe what you're teaching them, and it's not easy to get excited about things all the time. But I think there's a difference between just going in and delivering the materials, and going in and delivering the materials in a way that lets the students feel that this is something that can be important to them, this is something that they want to know? IT1.2: 0.29.30
- On providing overviews of subject and linking topics:  
I think maybe I wouldn't have done it every week, but sometimes when you move on and you're continuing, they need to have that memory, so whether or not he told me to do it, having the link to something that's taught before, bringing it up again. IT1.2: 0.34.10
- ...but a good Geography teacher would actually give equal weightage to whatever topic that he is teaching, and you have to highlight the important things to the students, you have to show it to them because that's what a teacher's supposed to do. (despite personal biases and interests)...and also if you can help the students find their interests, then that would be a bonus lah. IT1.2: 0.35.50
- I think for a Geography teacher right, they have to be very gung-ho, let's go trekking up Bukit Timah today. I think if they can have that kind of personality and not be afraid to go and rough it out in the mud and things like that, then that would be good. Because that is really one way to get the students excited at this secondary school level or whatever. You organize these fieldtrips, you bring them out and that would really let them see what it is that they are studying? IT1.2: 0.37.29
- I am really quite against the arm-chair Geographer kind of teaching style. It's hard to do it here in Singapore, but if you can find an avenue where that's possible... IT1.2: 0.38.15
- I don't think I was taught that way but when I study right, all through school and things like that, like when I study and things like that I always need to know the whys and things like that. You need to understand to understand, if you don't and you just memorise, cannot. It will not work. IT3: 0.10.04
- 1b Influence of school geography on conceptions.** CM  
Is it Geography... I suppose it is you know, more like Physical Geography to me. It looks like a rainforest... and if you link it to secondary school and how they learnt about vegetation and things like that, then I would say that this is Geography. IT1.1:0.01.49
- changing seasons affects people, and even like back in school this is just the core of what Geography is, what we learnt at the start, how the earth rotates, and the sun coming in and all that... so I think it sticks with you? IT1.1: 0.05.50
- Yah, I mean like I said, it is Geography because it is something that we learnt in school lah. So river processes, erosion, that sort of thing...I would relate it to Geography. IT1.1: 0.07.33
- Especially uni, but even in like Primary and Secondary right, what we ingrain in people is that the important part is not so much how the processes take place, we're talking about Physical processes ah, but IT1.2: 0.11.30

how it affects humans. So that's why that's always something I have always kept in my mind.

- 1b **NIE associated with school Geography**  
 But because we have been inducted into this whole NIE system and that is constantly at the back of my mind... the syllabus is, you know, and when I look at something now, like as a trainee teacher, I think, yah yah that's Geography, and I use it in my lessons and things like that. But ordinarily if I had seen this before coming into NIE, I don't think I would have associated this with Geography? IT1.1:0.02.24
- 1b **Influence of university Geography on conceptions**  
 I'm beginning to see that a lot of my thoughts about what Geography is, is more about, more influenced by the kind of education that I have had? So you wouldn't ordinarily link this to Geography, but I can see the Geographical aspects...like natural resources things like that. (politics) IT1.2: 0.02.32
- Especially uni, but even in like Primary and Secondary right, what we engrain in people is that the important part is not so much how the processes take place, we're talking about Physical processes ah, but how it affects humans. So that's why that's always something I have always kept in my mind. IT1.2: 0.11.30
- I did Gender, I did all the cultural Geography modules, then I also really liked Economic and Political Geography. I was really bad at the Physical ones. We had to do some Atmospheric one, I got a C for that. That was brutal and I think that's why I really associate Physical Geography with a Science because we had to do so much calculation for that...and because of the way Geography is structured in school until we reach uni, or even the 1101 modules, there is not backing to teach you how to do all these calculations, so when we had to do these modules, no one in the group knew how to do it, and you had to go and borrow all these books and read up on Physics and Chemistry in order to understand how it works, and then also it's still very very difficult, you see? IT1.2: 0.24.39
- 1b **How school Geography influenced feelings about Geography.**  
 To be honest, it was probably the worst I ever had in Geography. It was like underline and write point one, point two, that sort of thing. And at that time, what we did to try to do well at Geography was to make our own notes, and then we would like draw all the diagrams and label them and practice drawing them, and memorise the notes from A to Z. It was taught that way, what we did was come to school with different coloured pens and just underline, point one point two point three... That was secondary school Geography for me and I really didn't enjoy it at all. IT1.2: 0.20.04
- A levels I had good experiences of Geography. I think it really depends on who the teachers are. I think for the first time right I saw people get excited about what they were teaching IT1.2: 0.21.55
- And for Human Geography, I really took a liking to it in JC, because when we went to JC, we really understood the Human aspect of it, because he really made it very real to us. (relevance of Geography) IT1.2: 0.23.02
- 1b **How university Geography influenced feelings about Geography.**  
 Actually I was a Literature major and then in my 4<sup>th</sup> sem(ester), then only IT1.2: 0.23.45

I changed my major to Geography, so I hadn't done my 101 module until then... And then in my 3<sup>rd</sup> sem, I did a module on Gender or something, one of those by [name of lecturer]... she's good, and then from then I thought, I think I'm just wasting my time with Literature and I decided to change my major to Geography. And that's when I did a lot of Human modules lah at uni.

**1b How teachers influenced conceptions (subject conceptions or affective component)**

[name of teacher], he was one of those, he taught us Physical Geography, and it'd be like it's raining, let's all go stand under this hut and watch saturation overland flow. And because [name of school] is on a hill, we would do slope studies and have lessons on the hill and learn about the sheer impact and stress and all that kind of stuff. And so, he was really very excited about what he taught, even if it was in a lecture theatre. It was one of those where you don't need any notes, and he would just stand there and get you interested about the subject, so I think that really hooked me onto Geography. (at JC)

IT1.2: 0.21.55

And for Human Geography, I really took a liking to it in JC, because when we went to JC, we really understood the Human aspect of it, because he really made it very real to us.

IT1.2: 0.23.02

And then in my 3<sup>rd</sup> sem, I did a module on Gender or something, one of those by [name of lecturer]... she's good, and then from then I thought, I think I'm just wasting my time with Literature and I decided to change my major to Geography.

IT1.2: 0.23.45

It was definitely the Geography lecturers at NUS, they're much more approachable and friendly than the Literature ones. They're very very nice and they're so supportive and nurturing, you know, it just makes you feel that when you go for Geography class, you're like this woman is so nice, she really cares, you're not just like one person in a class. Like in Lit, I found it to be very impersonal, they would just come in, do their thing and that's it. The fact that there was a human connection, it's an important aspect, but not a main thing.

IT1.2: 0.28.20

**1b Influence of travel on conceptions (subject conceptions and affective)**

I know definitely traveling, like when I go and see blowholes... the most Physical traveling I did was when I went for a drive along the coast of Western Australia? And we went and saw the Pinnacles, and we also had like caves and those arcs, blowholes that sort of thing. And when you actually see it and all it's like, wah that's pretty cool... This was while I was at uni, just a holiday with some friends.

IT1.2: 0.26.42

**1b Influence of work experience (subject conceptions and affective)**

After I graduated, I was doing editing at [name of publisher] for about a year and a half... I concentrated mostly on the Geography textbook. Earth Our Home (lower sec) and Geog Elective (upper sec).

IT1.2: 0.29.30

I think I am a little bit more confident teaching secondary school, simply because I did the textbook before, I kind of know the syllabus and the content and I've been through with MOE what needs to come out.

IT1.2: 0.32.51

- 1b **Other influences on subject conceptions**  
 Maybe news, like politics and maybe development, food and all that. The news and politics would probably be an important part as well IT2: 0.09.51
- 2a **Discussion of Practice**  
 How I normally do my lessons is I always start off with an individual activity, where they have to make their own notes. And then, they'll have some sort of pair discussion, and after that is group discussion. I try as far as possible to stick to this structure. Because before any real group discussion can take place, students must have their own ideas about whatever I am teaching. I find the individual activity gives them time to collect their thoughts. If they don't know anything about the topic, they can write down the key points and all. And when they move into pair work, it's not as disruptive as when they straight away jump into group work. Pair work allows them to just bounce ideas off one another, and with the group work then they can actually discuss more, and then come up with something more substantial. IT2: 1.38.29  
 PFDoc
- I've found out the whiteboard is really a very very important tool. IT2: 0.39.50  
 Because I like to ask questions and get the kids to give me the key words, the responses, whatever it is, and so I'll write it on the board. PFDoc  
 Because at the end of my lesson when I do my summary, I try to do a mindmap, and then whatever they've spoken is all there. I don't know, somehow I feel they can draw a better link because somehow they contributed.
- I try to do it (assign roles in group work) every lesson. Sometimes it works, sometimes it doesn't, but I just do it ok. The school asked me to do it... my CT, my CT asked me to do it. But I think everybody in the school practices it... For this class, they don't really take it seriously, but I do it anyway, and on their worksheets I make them write their roles and all... make them take some pride in whatever they have to do. IT2: 0.41.55  
 PFDoc
- The use of whiteboard ah, like I mentioned before I always like to ask the kids a lot of questions and then explain it a little more, what do you think and all, so when they bounce ideas off each other, they write the answers on the board, so at the end of the day, when they have to draw the mind map, it's easy for them to just look up and put the words down...Or when I have more time to get them to do it, when they throw out the answers, I already have the main topics right, like climate or something. So I ask certain questions and when they throw out the answers I am writing it down, so at the end when they have to do a mind map or they have to copy it, the answers on the board are all from them... I think it's important that it's from them. They are contributing, that's number one, and rather than they you know just do one and I give it to them... IT3: 0.14.39
- 2a. **Practice and 'Performance'**  
 I feel that when I am in the class right, I'm like a performer. You have to be enthusiastic, you have to, it's all about holding their attention you know. The school that I was in, I had to walk up and down. I cannot just stand in front. Otherwise, the people there they would just talk. I just have to be around and keep them on their toes, like you answer this question, you answer this. So I found that to be very important. I think it's ok to be relaxed around your students, that's when a lesson comes out better IT2: 1.04.55

<b>2b</b>	<b>How subject conceptions affect practice – large influence</b>	COI
	The next one is subject conceptions, that is the second biggest one I suppose. I think basically it's important right because that's what, the content and the tools you're trying to pass down to the students comes from your subject conceptions. What is important, what is not important, how I teach it, my understanding also. If I know it more in depth, I can teach more you know.	IT3: 0.57.38
	I think I am a little bit more confident teaching secondary school, simply because I did the textbook before, I kind of know the syllabus and the content and I've been through with MOE what needs to come out. When I was contract teaching, it was for A levels (Millenia Institute), and when I was there we did Lithosphere which was really super Physical, something I am not strong at at all. For me my fear is really the content part of it, even with Human, things change all the time. The thing about being a teacher there is a need for relevance lah, you need to stay up to date in everything. So I feel you must be really diligent to go and read up on all these kinds of things and keep at it.	IT1.2: 0.32.51
	Yah I think from my work experience, having done my textbook planning and working with curriculum development people in MOE before, so that helped me make it more systematic. I knew why they wanted them to cover things and things like that. So this is the part that overlaps (with subject conceptions).	IT3: 0.58.42
	I think that after doing this exercise right, my conception of what Geography is, I find it very skewed. And to go into a class and impart that onto the students would be unfair, but in some way I can't help the fact that I get excited over certain things, but a good Geography teacher would actually give equal weightage to whatever topic that he is teaching, and you have to highlight the important things to the students, you have to show it to them because that's what a teacher's supposed to do.	IT1.2: 0.35.50
	Yes, I struggled quite a lot with that and when I went into school, I had to teach only Physical Geography because even though I taught different levels, Sec 1 and 2, the school had a system where the Sec 1s and 2s learnt the same things... because I think there's a shortage of teachers, so I struggled with first of all trying to catch up with content, I really had to spend time reading up, and in terms of how I would deliver the lesson. Required I think a lot more effort.	IT2: 0.10.35
	Yah, because as much as I want to make them interested in the world and in life and all that kind of stuff right, at the end of the day, this is what they need to know. You know, like breaking down the topics. Maybe because the school that I went to, the ability of the students was not very high, so I think in that aspect I really had to just go back to the basics and teach them. You know, I tried to make the world still relevant to them, but in the ways in which I challenged them or what I could bring into the classroom, it was limited because these kids were already very weak and what little time I had with them, I felt like huh, I had to focus on all these curriculum things.	IT2: 0.11.47

- 2b **Beliefs about how geog should be taught and practice** IT2: 0.47.20  
 PFDoc
- Because I wanted them to, I picked out what I wanted them to understand first, and the concept of trying to get them to comprehend the movement of plates just from the video, I felt they couldn't do it. And because before this I did natural vegetation, and before the start of natural vegetation my CT told me to go and get them to look at the leaves, go touch the tree bark and really break it down. The rest of natural vegetation worked out very nicely because they had an understanding already. So for this introduction to landforms and rocks, I really wanted it to be something like that. It's the simplest thing I could think of, I just let them play around with it and get their own conceptions and own ideas.
- When I brought my class out, I'm so shocked at how that small little tree activity which I would have thought to be really useless, before my CT ever brought it up to me, but just by bringing them down, it made a world of difference. I went for only 1 period, but they loved it, they really, really loved it. Even the class that didn't really like group work, they loved it.
- IT2: 0.56.50
- The data collection ones for vegetation was just, let them know, I don't know the kids I taught believe that trees just dropped out from somewhere you know, not real. So I thought, ok just let them go out of the classroom, let them draw and touch and write. And they enjoyed that very much. Made it real.
- IT3: 0.06.55
- I actually had a comment from a kid who said to me, you know, he said, Miss, are you even a qualified teacher? And I said why? He said, oh because you keep asking us so many questions. If you knew the answers you wouldn't be asking us. I don't know if it was too much but I always throw back the whys to get them to give me the answers, and they can! The fact is they can.
- IT3: 0.10.30
- 2c **National level influence on practice – through school** COI
- I wish that less is covered in the syllabus. I mean I think this is what everyone will say, that they need to get through a certain amount for exams, and because there is so much to get through you lose these extra things which actually can make a really big impact on the lives of the kids.
- IT1.2: 0.38.58
- The last one is education system, I think largely it falls into the school lah, the policies and all lah, teach less learn more, it's falls more to the school than with personal or subject conceptions or anything because at the end of the day they say, yes do this do that or whatever, but the exams are what counts, you know, so it's really just the exam bit.
- IT3: 1.01.03
- 2c **School level influence on practice - large** COI
- The first one, I put the most important is school context, the school ethos and all that. In the school they are very big on mind maps, it was really promoted. I believe, I was using mind maps from way before, but that gave me more reason to use the mind map more often.
- IT3: 0.56.16
- this is my first experience in a neighbourhood school, you know, so in terms of how I thought, it took me quite a while to find my footing. I had big ideas about how I like to teach, but come to class I couldn't do a lot of
- IT3: 0.59.10

it... I couldn't change the school so I had to adjust my own style whatever.

Like the first staff meeting that we had, and every staff meeting that I go for, what is always flashed to us is you know the O level results and then they had to meet a certain criteria so that they can get Gold or Silver, then after three years they can win some award... so that is the focus of every staff meeting. And while I think it's important, the school as a whole does not have that, that, that, you know, I feel there's not much of a culture in the school, the students feel very disconnected from the school. IT2: 0.17.50

There's hardly any games or sports that they went to support as whole school, kids don't really know what's going on in terms of activities, and even for CCAs, the participation rate is very low. The kids don't go for CCAs and stuff like that, they can't be bothered. And sometimes when I talk to the kids about school spirit and how they feel about being in the school, they don't feel a sense of belonging lah. IT2: 0.17.50

I think that it (lack of school spirit, students not really connecting with teachers) really causes problems in the classroom. I mean whatever it is, you must have some mutual respect...it's very hard, very very hard. It's not just me. When I took over the classes my CT had, she's been teaching in the school for a while already... it's so hard you know. I've never been in a class where there's complete silence, even the best class is like that. And I found it a little weird. I don't know if this is what actually happens in neighbourhood schools, but I found it to be very different. IT2: 0.19.32

I try to do it (assign roles in group work) every lesson. Sometimes it works, sometimes it doesn't, but I just do it ok. The school asked me to do it... my CT, my CT asked me to do it. But I think everybody in the school practices it... For this class, they don't really take it seriously, but I do it anyway, and on their worksheets I make them write their roles and all... make them take some pride in whatever they have to do. IT2: 0.41.55

2c **Classroom-level influence on practice – large, part of school** COI  
 ...there were a lot of lessons I had planned initially, which, my first few lessons some of them I couldn't complete and a lot of them had extra things that I had to take out because I pitched it at a level that was a little too high for the students' ability. So initially I had a lot of, you know, oh I want to make them draw the links themselves and see how it's relevant outside, but I realized that with the kids that I was dealing with, I really couldn't do that a lot. I could do that sometimes but not a lot lah. A lot of times it's still, I had to go back to the syllabus. IT2: 0.12.44

Well within that school, I would have loved it if the class could take their noise level down a few notches. Because, even when I am conducting my own lesson, I have to stop the class a lot of times to ask them to quieten down. This is not because they are making noise or doing their own thing or whatever. They're making noise but they are doing work, my work, so I'm fine with that, good noise and all, but when I need to conduct the lecture part, I can't have them interrupting me every two, three seconds... when I need to get through a lesson, I need to get through the lesson. So what I would have liked is something in the IT2: 0.30.18



Appendix 4.10

middle lah (between what the classes were like and what her sup expected)

Er...I think that when I did this lesson (jigsaw puzzle lesson) with the better Sec 1 class, 1H, it was too easy for them. They finished it very quickly and I had to move on to something else after that. For the weaker class I did this with, it worked out very well. They enjoyed it you know. I think for them they are like kinesthetic right, so they like doing this sort of thing, so it worked out quite well for the other class. IT2: 0.48.07

I do (sometimes plan different lessons for different classes), but it's very hard. Sometimes I did. But when I knew that if I did it with this class it would be a flop, so I modify it. But where possible I try to do the same thing. But also because they go at very different speeds, so I modify. IT2: 0.48.46

But the other class, I think only in the 9<sup>th</sup> or 10<sup>th</sup> week then I broke the ice with them. I don't know what it was with the class but they were, they were not very open, like they wouldn't even do group work. I was very shocked with this incident that happened. Like when I ask them to share answers with their friends right, doing group work, they cover their work. I said you have to share, this is a group thing, they said, why should I tell him the answer. They're not very keen on sharing, they hate group work. They just want you to sit down and lecture them and that's all. IT2: 0.49.21

I cannot give them homework, they won't do. If you look at my English ones, that one always got homework because that class could do it, they would do the homework and they would bring it. The classes that I taught Geography, cannot. I tried but I couldn't collect, nobody did. Cannot, impossible cannot. I make them stay back for detention and all that, it doesn't work... But I am very strict about them finishing the work for my class. They cannot leave or they stay back. I don't care if the other teacher's there. They stay back and they finish. IT3: 0.17.49

The tests that we gave, I felt for my Sec 2s right, they were really weak, they did really well for the tests on rocks and all that they we gave them. But I really knew what was coming out and I really tested them, made sure they can recite back to me the answers, ok. The Sec 1s, I couldn't really see anything tangible. In the test they were given right, the problem the kids have in the test is the language. They cannot answer questions or they don't know what the question is asking... When I ask them in class to check knowledge, no problem... But when it comes out in the workbook and the tests, they cannot answer, they don't know what to write. So really I think it's that gap that is preventing them from doing well. IT3: 0.19.06

Yah, I think this is the part that I struggled with. Teaching wise, I would rather prefer if they could understand the concept, because that's what it's about to me, you know. I think it's very important that they know what's going on, they know the processes, but at the same time I cannot neglect the drilling part, which I hate. I really wish I didn't have to do that, but the caliber of the students there requires that. IT3: 0.20.58

Initially when I started off, I didn't realize how weak they were in answering questions so my focus was lot on concept concept concept. I ask the questions in class, they can do it. Worksheet, they can do it. Probably because I'm there helping them. But when it came down to IT3: 0.21.29

tests and things like that, I don't have a very good pool to look at or whatever, because according to the teachers there they always do badly anyway, so no significant improvement or anything is ok, the same percentage pass or whatever. But I did realize later on that I did need them to be more exam focused. The drilling part is very important for these sort of kids.

But also the ability of the student comes into play, also how well the teacher understands the students. Like at first, I concentrated too much on the concept part and all that, there was no bridge there lah, for things to come together. And sometimes for kids, like when I see them study for tests and exams, they're just memorizing, so for the test they just see certain words in the question already they just write everything out and nothing to do with the question.

IT3: 0.23.49

2c **Influence of school mentors on practice**

My Geography CT was awesome. He's very very good... I think he really made me see right, above and beyond the nitty gritty things. Like the first few weeks in the school I was very stressed out, I felt like I couldn't get the kids to learn. I felt like my expectations were too high and I didn't know how to pitch anything and it was really bad for me the first few weeks. But he was really good in the sense that he saw that and he said, don't push yourself too hard and he came up with this thing where he said, you just have to come up with two points that you want them to learn in the lesson and forget about everything else. As long as they can tell you these two points, then your lesson is fine.

IT2: 0.20.34

My CT always said, when your sup comes down, it's a lights, camera, action kind of thing. So you have to doll it up because it's your grade. If you want to do it for every lesson you will die. So he was very realistic in telling me that. But, nevertheless, for every lesson that I had, he still expected top quality, he's not the type that you can just slack off lah.

IT2: 0.25.48

... I mean, ok ok, he is concerned about classroom management but there's good noise and bad noise, as long as they are learning... some of these kids they just can't sit down. They must walk around and talk, but if they're learning he's fine with it... In his mind it's like that, he doesn't care what they do, if we're going to micromanage everything, we won't be able to make it. That's what he told me.

IT2: 0.26.35

He said, you look so stressed that it's not even you, you want to have a good time with the kids, but you're holding yourself back so that you can be strict, so that they will sit down, and just don't do that, ok. If you feel that you want to have a vibrant class, it's ok that ten kids talk at the same time because you feel you can manage all of them. You just have to justify yourself to your sup and tell them that this is the kind of classroom that you and your students are comfortable with.

IT2: 0.26.35

Yah, my CT was very good at letting me take my time and do that. I don't know if he anticipated that somebody new was going to come and take over, but he covered a lot of things in the early part of the year already, and he told me, you have one term here, you will just need to teach them Atmosphere and Natural Veg, they just need to get their feet wet in Natural Veg. So he was very open to ideas, he believed also in this kind of experiential... so things like when we learnt about the elements of weather right, normally I would have expected that we do temperature

IT2: 0.31.44

one lesson, rain one lesson, but just on rain itself ah, just on where to situate a rain gauge, he let me have two lessons, two periods, just to bring them around the school. Why you shouldn't put it here, why you should put it there.

And when I did Natural Vegetation, at the start I just wanted to go into different types, but he said, stop, some of these kids have never even touched a tree before, you know? So I took them down and got them to sketch the parts, look at the roots, why are the roots sticking out, why are some leaves fatter than the others... and that just sparked off a lot of discussion and it really helped them to draw the links to why certain leaves are broader...

IT2: 0.31.44

And my Geography CT said, you know a good lesson is one where you come out of the class right, and the wow moment is given by the student. That's what I try to aim for, whatever lesson that I give, whatever main point, I try to get it from the student.

IT2: 0.55.13

On subject conceptions and effort to provide overview  
Yeah that was actually something that my CTs did... that was his style and it was something he wanted me to continue. Because we only see the kids like twice a week right, so it's easy for them to forget what's happening. When I do that it's not so much for me to tell them what is happening, but to check on their recollection of what we've covered. It's just something he was doing all the while and I sort of adopted it.

IT3: 0.01.00

Oh and another thing is that I feel my teaching style is very similar to that of my CT. And that is the style I wanted to adopt and I had discussed with my CT already beforehand about the whole classroom management thing. He was very supportive in the sense that because my sup was coming right, I knew she was coming to observe 1F, so we knew that it was going to be tough already. So there was a certain lesson where I tried to take my sup's advice in terms of really treating them like in army like that. It didn't work, the kids were angry with me... And I had such a horrible time teaching in class you know. It just wasn't me and my CT was there and he said, you really didn't enjoy this lesson, and I didn't, I was completely gone, and at one point I was lost, it was very bad. And I sat down with him and said, I really cannot do it like that. And he said, you know what, just screw it lah. Your sup, as long as you can explain to the supervisor why you're doing certain things. At the end of the day your kids are going to know that you're fake, the rest of your weeks are going to get even worse.

IT3: 0.30.55

**2c Influence of NIE on practice - small**

I feel that the activities we did in class... the classroom activities, they were really pitched for higher, students with higher abilities. The only thing I used was Games-Based Learning. That was very chaotic but I also feel that it was good chaos.

COI  
IT2: 0.23.10

I think in terms of the educational paradigms and all that, not really very relevant to my practice. Classroom techniques, some were... and for the forms, during practicum I did look at the forms and say, ok this is what I need to do and all that.

IT3: 1.00.04

Initially, like when I started out I would try to improve on these processes and that, but then later when I talked to my mentor he said, you need to find your own style. And so the form became less important.

IT3: 1.00.25

2c **Influence of supervisor on practice**

She's not the kind who will come and meddle in your affairs lah. She'll just check, are you doing ok, everything is fine? If you need any help, let me know. She's very professional in the way she dealt with everything, which is what I like. And yah, she was helpful. One thing that I took away from dealing with her, is the need to actually break it down into, er, whatever I teach right, has to be made useful to the students in the sense that we devise something like a step by step application for them for everything, so one two three, one two three. Let's say ah a picture, I was talking about skills, so I was teaching them how to interpret pictures, diagrams, tables and all that sort of thing. And she said, good, so now they know, at the end of the day, so what? So she told me what to do was for these sorts of lessons to devise like step one, when you're answering, say this. Step two, you have to say that, step three you have to say that. And so in that way, I tried to apply that. IT2: 0.24.17

My sup, her number one priority was classroom management. And in this school ah, really cannot. IT2: 0.25.48

My sup's stand is that everyone must be seated, bags to the side, sitting up straight, looking to the front, if you want to talk, you raise your hands. Cannot lah I cannot do that. I have ten kids talking at one time. So I struggled really a lot with that. It was very very stressful everytime I heard my sup was coming down. IT2: 0.26.35

Yah, I wouldn't say there was such a drastic change, just in terms of, like the lesson-wise, no. They would still be the same, whatever I did would be the same. But erm in terms of the management, I got a whistle and everything for like when the sup comes. Of course before that I'd train the class with the whistle thing. It was the only thing that worked. There was, to be honest, there was definitely a change in the, like how I taught, when the supervisor came. IT2: 0.29.40

I think my supervisor had really high expectations. Right down to the T kind, she is very big on classroom control. Cannot lah. In the classrooms that she came to observe, chaos... she didn't like the chaos. And I think for my CTS why they gave the better grades is they are really nice people lah and they really gave me lots of pointers. I think so long as, I mean they would spot things that are wrong in the classroom, as long as I rectified that the next time they came and watched, that was ok. IT3: 0.29.25

2c **On the image of a good (geog) teacher**

But I think when you go to work and all you have to dress professionally. *What do you mean by professionally?* IT2: 1.01.48

Er, I think like what you would wear to an office job? But sometimes the classroom is really, really hot. I did find myself going out and buying a lot of short-sleeved things because it's really really warm in the afternoon.

Actually most of the rules that are in place are alright. I mean you can't wear too revealing stuff as a woman and all that, if you're gonna be around boys, or even girls you have to be a role model in some aspects. IT2: 1.02.34

Yah, I don't know. I have a problem because I have a nose-stud right? And when I was teaching in [name of school], I asked my HOD whether I IT2: 1.02.58

can keep my nose-stud. He said to go and check with the Principal, so I went and asked the Principal and I said, Mr Tan is it ok if I keep my nose-stud? And he said, what do you think? And I said, I think at a JC level it should be ok because the kids are old enough to know that they are the students and I am the teacher, and when I was a student, I couldn't have one, so they will just have to deal, because I can't just constantly change and be a student again what. Then he said, ok if you think you can explain that to your students, fine.

I think it's hard for me to verbalise it but when I think back to all my old Geography teachers, they all fit a certain type. They do, erm, they do. They are just the less corporate looking. I think they're not so corporate looking as I don't know, a Math teacher or an Accounts teacher or something like that?

IT2: 1.10.52

Yes, more casual. Erm still smart looking you know, but more casual maybe? I can't tell you why though. If they're taking you into the field I can understand why, but in the classroom, it's the same situation for any teacher right? And yet there's a difference. Maybe it's their interest and stuff like that. You know I had one professor at NUS who would always be like Crocodile Dundee. But he's just be in the lecture theatre, so I don't know. Maybe he's just, always in khaki, always always in khaki. And maybe some of them are just against the whole corporate image

IT2: 1.11.17

**3 How practice affects subject conceptions**

Yes, I did except that I find an element missing as I look at it now, which is the skills part. When I organized my concept map before, it was organized as topics or how I would categorise Geography, but as I went and did my practicum what I have come to realize is that one important aspect that I need to revisit ever so often with the students is skills lah.

IT2:0.00.23

When I started doing my practicum, I initially started off by focusing on the topic and content for every topic right, but then I realized when I set my students work to do, they could do it, like writing and all, but to get them to perform better, I realized that when I dedicated a certain part of my lessons to skills, or even my whole lesson focused on skills right, then that would help them to understand the topic much more...Because when I use a map to explain a topic to them, they know what to look out for, and understand what I'm trying to tell them.

IT2: 0.01.52

It wasn't explicitly stated that I had to teach these but I found that when doing the workbook they could not answer these things, they didn't know what they were supposed to do when they see a photograph, but when you ask them to explain the process in the picture, they just said, oh I see a tree. They don't get it. But I feel like when they do data interpretation, at O levels they have to do it right, and then through the years it's something that needs to be reinforced... Something I thought that would help them would be to give them steps. Like when you see a graph what do you have to do. First you have to look at the title and then from there look at what the axis represents, and then look at temperature. For the temperature you look at the average temperature, look at the pattern, you know? There are steps for each one and that is the reason why I taught them.

IT3: 0.05.50

### **Individual Case Report for Anna**

Anna was 26 years old at the point when I was carrying out data collection, of mixed race (Eurasian) and unmarried. She had studied Geography throughout her secondary and tertiary education in Singapore, and has an Honours degree in Geography from the National University of Singapore (NUS). After graduating from university, Anna edited Geography textbooks for a publisher in Singapore for a year and a half, and then worked at the Ministry of Defence for six months in the area of Media Relations. During her time at university she taught Creative Writing and Speech and Drama to children for pocket money, and also taught 'A' level Geography in a Singapore school for a few months under the Ministry of Education's (MOE) Contract Teaching scheme prior to enrolment at the National Institute of Education (NIE).

### **Subject Conceptions**

Anna's concept map for Geography is presented in Figure 1. From the figure we can see that for Anna, relationships between people and space are the most important aspect of Geography. Initially Anna focused only on how people affect space and physical processes. During the Stage 1 interview however, she clarified that physical processes also affect people and modified her concept map accordingly (reflected in Figure 1). For example she states that,

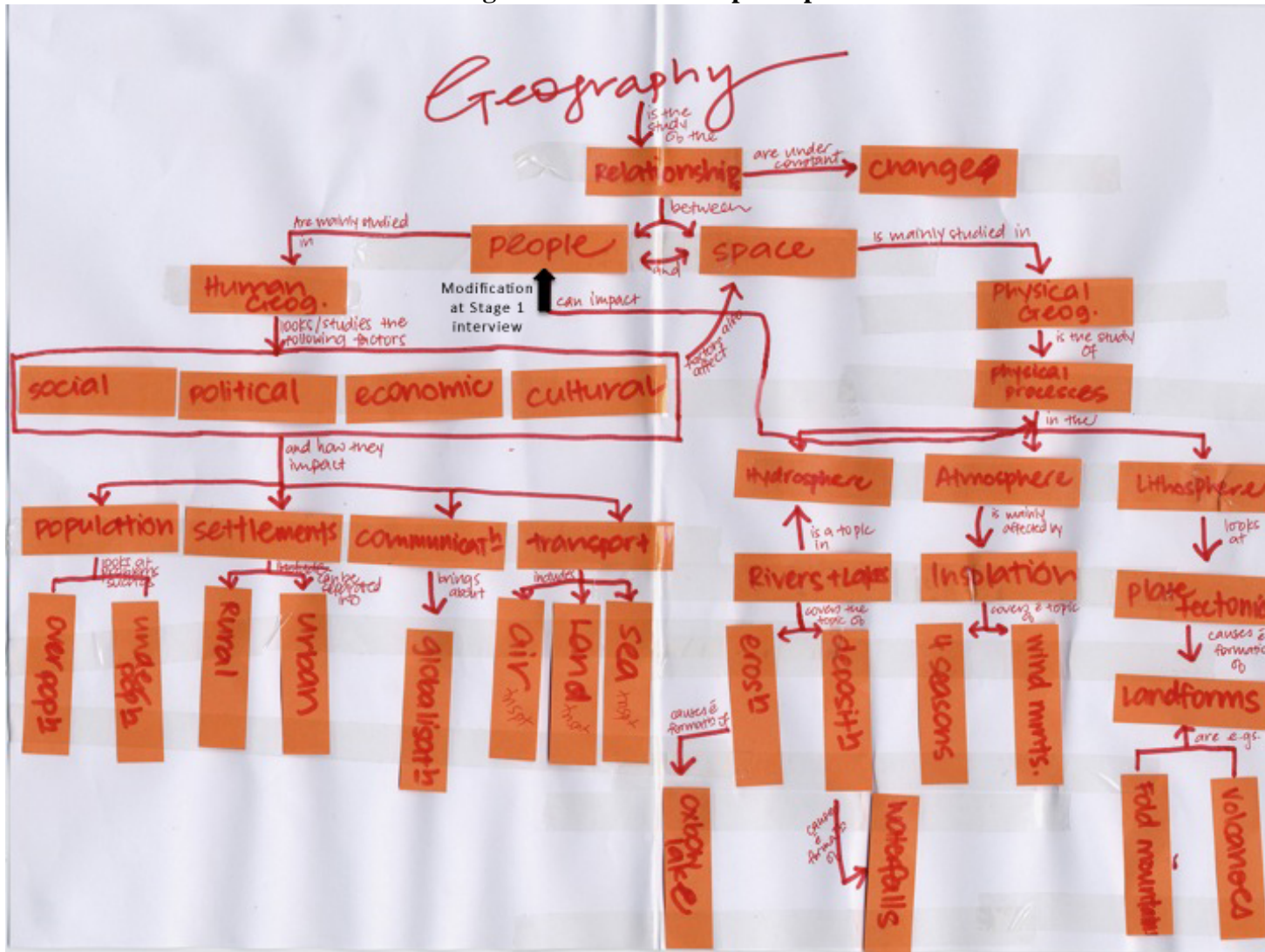
Geography, to me, is about, I suppose the relationship about people and... and space, you know, a man's environment or something like that? Erm, and I think it has to be a two-way thing lah [an interjection commonly used in casual Singaporean speech]. How the environment affects man, and how man has the ability to change or affect the environment.

However despite this modification, Anna's focus in Geography continued to primarily centre around people. For example, in the Photo Elicitation exercise she ranked the photos with people in them as 'more Geographical' than those without because those were the ones where 'you can see the Physical and Human interacting'. Anna believed that Geography 'had to do with people' whereas just physical landforms and processes had more 'to do with Science'. She attributed this specifically to the Singapore education system because the subject syllabi for Geography stress the interaction between people and the environment as the main focus of Geography. For example she stated that,

...when you look at the mountain range, the rivers, and the trees and all that, yah I think they are Geographical as well. Not to say that they are less important, but I think like, like ...it's more like a Science, all that which is something that in the Singapore education system [for Geography] is not something that we go very much into?

Anna therefore appeared to take her reference point on what is Geography or not from school Geography, explaining that the 'reason why I drew this [concept map] was because I thought going into school, this is the kind of Geography that is expected of us, to be taught to the students.' Here we can see the influence of the national education context in Singapore. Anna's conception of Geography as the study of the interaction

Figure 1 Anna's Concept Map



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between people and the environment stems directly from the subject syllabi mandated by the MOE. She also ranked photos focusing solely on landforms as 'less Geographical' because of this conception.

Anna made a clear distinction between school and academic Geography in her interviews. For example, she explained that her concept map did not include her knowledge of academic Geography – 'what I have been trained in and the kind of Geography that I learned in uni and all, really does not get incorporated'. For example, Anna stated a marked preference for choosing Human Geography modules at university: 'I did Gender, I did all the cultural Geography modules, then I also really liked Economic and Political Geography. I was really bad at the Physical ones'. Anna's preference for Human Geography is not surprising, given that both school Geography and academic Geography at the NUS is skewed towards Human Geography. Despite this preference, her concept map of Geography appears on the surface 'balanced' due to her belief that she was a teacher first and needed to teach students what was in the syllabi instead.

I think that after doing this exercise right, my conception of what Geography is, I find it very skewed. And to go into a class and impart that onto the students would be unfair... a good Geography teacher would actually give equal weightage to whatever topic that he is teaching, and you have to highlight the important things to the students, you have to show it to them because that's what a teacher's supposed to do.

Anna pointed out that 'ultimately, as much as I like this other type of Geography, we're preparing them [the students] for the exams ah, you know. And this is what is needed'. Although Anna had only just begun her teacher training programme at the point the map was constructed, she had already spent a few months at a Pre-University centre teaching 'A' level Geography under the MOE's push for pre-service teachers to have practical experience (if possible) before they enroll at the NIE. This experience of teaching may have affected her concept map of Geography, though in the interviews itself referred mainly her work experience with a textbook publisher as the important influence.

I concentrated mostly on the Geography textbook. Earth Our Home (lower sec) and Geog Elective (upper sec)...I think I am a little bit more confident teaching secondary school, simply because I did the textbook before, I kind of know the syllabus and the content and I've been through with MOE what needs to come out.

Anna's personal work experience therefore was a major influence on her concept map and discussion of Geography. It made her very aware of MOE's expectations of what students needed to learn in school Geography and led to an intimate knowledge of the subject syllabi for secondary school.

Anna also stated that as a secondary school student she had no conception of Geography beyond it being 'just a subject' she did and she recalled that she 'really didn't enjoy it at all'. Beyond a holiday to Western Australia where Anna saw Geographical landforms



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firsthand and felt that 'they were cool', Anna admits that she was 'never a nature lover or anything'. Although Anna did not include fieldwork or techniques in Geography in her concept map, Anna nevertheless articulated that she learnt to appreciate Geography more when the learning was experiential. She recalled that while at Junior College (JC) 'it'd be like it's raining, let's all go stand under this hut and watch saturation overland flow. And because [name of JC] is on a hill, we would do slope studies and have lessons on the hill and learn about the sheer impact and stress and all that kind of stuff'. She also believed that 'for a Geography teacher right, they have to be very gung-ho, let's go trekking up Bukit Timah [hill] today. I think if they can have this kind of personality and not be afraid to go and rough it out in the mud and things like that, then that would be good'.

This appreciation for learning by going out of the classroom and into the field extended also to an observation that Geography teachers had a 'type'. For example, she explained that

when I think back to all my old Geography teachers, they all fit a certain type. They do, erm, they do. They are just the less corporate looking. I think they're not so corporate looking as I don't know, a Math teacher or an Accounts teacher or something like that... I can't tell you why though. If they're taking you into the field I can understand why, but in the classroom, it's the same situation for any teacher right? And yet there's a difference. Maybe it's their interest and stuff like that.

Anna linked the way that her Geography teachers dressed to the 'gung-ho' attitude towards going outdoors that she admired in effective Geography teachers. She even referred to one of her professors at the NUS as someone who would always dress 'like Crocodile Dundee... Maybe he's just, always in khaki, always always in khaki'.

Anna appreciated other personal qualities of her Geography teachers at JC and beyond. For example, she felt that her Human Geography lecturer at JC was really 'very excited about what he taught, even if it was in a lecture theatre. It was one of those where you don't need any notes, and he would just stand there and get you interested about the subject, so I think that really hooked me onto Geography'. She also switched majors at university from Literature to Geography because the lecturers 'very very nice and they're so supportive and nurturing, you know, it just makes you feel that when you go for Geography class, you're like this woman is so nice, she really cares'.

In summary therefore, it appears that although Anna's subject knowledge and preferences in Geography were skewed towards the Human Geography modules taught at university, from the start of the teacher education programme, she had already consciously adopted a stance that was oriented towards teaching it at school. Anna herself admitted that she did not have particularly strong feelings towards the subject while at secondary school, but grew to like it later on mostly because she liked the personal qualities and teaching styles of her teachers. This extended to an appreciation of the way that they dressed which reflected the image of the Geographer as an adventurous and outdoorsy person. However, Anna's concept map of Geography and her ranking of what is or is not quintessentially Geographical related closely to her focus on man-environment interactions. This was

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influenced by the Geography syllabi mandated by the MOE, and which she had a good knowledge of due to her work experience with a textbook publisher.

### Changes to Subject Conceptions

Anna did her Teaching Practice at what is known in Singapore as a 'neighbourhood' government secondary school.

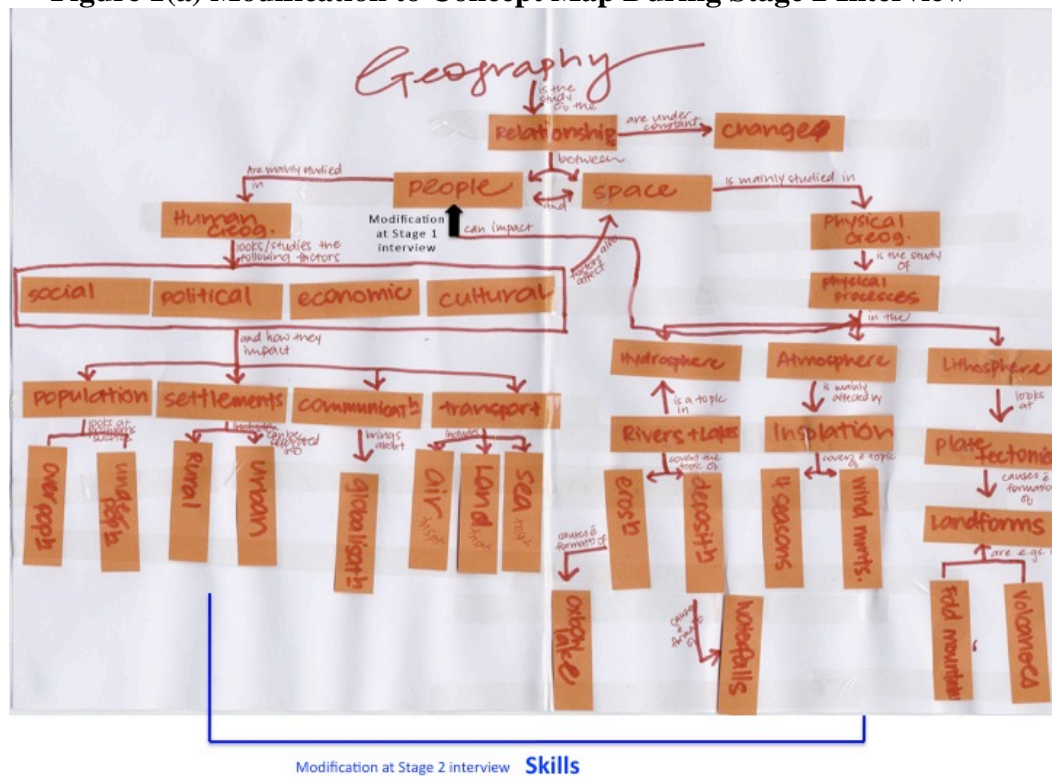
I taught Sec 1 & 2 Geography... I had two sec 1 Geography classes, 1H, which was the second best class, and 1F, which is the class which is just before the Normal stream [i.e. weakest Express class]... so the ability of the kids, there was a range there. In Sec 2, I taught 2E and this class was a very, very problematic class, they are blacklisted in the whole school. Express, but again the borderline one lah.

When asked to reflect on how ten weeks of Teaching Practice in a neighbourhood secondary school affected her subject conceptions, Anna felt that what was missing from her concept map was

the skills part. When I organized my concept map before, it was organized as topics or how I would categorise Geography, but as I went and did my practicum [Teaching Practice] what I have come to realize is that one important aspect that I need to revisit ever so often with the students is skills lah... I think skills would actually need to be integrated into every topic you know...

By 'skills', Anna was referring to data interpretation skills and the ability to answer exam questions correctly. She explained that 'Initially when I started off, I didn't realize how weak they were in answering questions so my focus was lot on concept concept... But I did realize later on that I did need them to be more exam focused'. Anna annotated this change on her concept map as shown in Figure 1(a). Therefore it appears that her time in school had caused Anna to become more conscious of the need to include examination skills in her concept map for school Geography rather than to make any fundamental changes to her concept map of Geography. This could be because 10 weeks is too short a period for any fundamental changes to occur to a pre-service teacher's subject conceptions. Another plausible reason might also be that Anna's concept map and articulation of what Geography is was already one that was centred on school Geography.

Figure 1(a) Modification to Concept Map During Stage 2 Interview



At the same time, Anna expressed a realization that there was room to incorporate academic Geography within school Geography: ‘I also have the space to... teach the students whatever I gained from university. Like you know ways of seeing or looking at Geography and questioning things. I have the space to move around and add what I’m interested in rather than just the curriculum’. However, after discussion of how her concept map could be drawn differently to reflect academic Geography, Anna commented that she believed that such a map would be more appropriate to Geography at ‘tertiary’ level but that hers was still more suited to secondary school. Thus it appears that at this point in time, the two varieties of Geography remain split in Anna’s mind though she might be open to incorporating some elements of university Geography in her lessons.

### Teaching Practice

#### Beliefs and Approach

During her first interview before Teaching Practice, Anna made reference to her own experience as a student where school Geography was all about drilling for examinations.

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And at that time, what we did to try to do well at Geography was to make our own notes, and then we would like draw all the diagrams and label them and practice drawing them, and memorise the notes from A to Z.

She recalled not enjoying Geography then and vowed 'if I ever become a teacher, I'll become a Geography teacher, just so I can teach Geography the right way'.

In discussing her beliefs about how Geography should be taught, Anna felt that teaching for understanding was key. Anna believed that teaching would be most effective if students 'could understand the concept, because that's what it's about to me, you know. I think it's very important that they know what's going on, they know the processes'. She also stressed the importance of understanding linkages between concepts. She felt that teaching to the test and rote-learning worked only in the short run, 'but you forget everything. If you ask me things that I studied in secondary school the initial part, that's how I used to learn what, just memorise everything, I cannot remember anything. But for my O levels, I can still remember certain things because I was explaining it in stages to myself'.

These approaches to teaching and learning were reflected in Anna's lesson plans, as well as in her discussions of what she did in class. In every lesson, Anna provided overviews of the topic being taught and to show how each lesson linked to other lessons. Anna also drew links across the topics that she was teaching, for example, between earth's rotation, weather and climate and natural vegetation. This is because she did not think 'it would be beneficial to students if they learnt them all in silo you know. It helps their understanding if they can link it... it gives a holistic understanding of the topic and how everything just flows'. subject conceptions of Geography focused mainly on Human-Environment interactions. Anna also made reference to the relationships between people and the environment in her lessons. This is not surprising since the lower secondary syllabus and the textbooks used (which Anna had helped to edit) also focus on these interactions. What is surprising is that Anna went beyond the syllabus at times. For example, when I asked her why she taught the students about cloud formation even though it was not in the lower secondary syllabus, Anna explained that 'I think I felt that though it's not in the syllabus, the conceptual understanding behind that was important, and they maybe don't know it very in depth but I felt they had to know how it was formed lah. If you learn about temperature and rainfall, I felt that you couldn't have it and not learn that'.

Anna also espoused a constructivist approach towards teaching. She found that the whiteboard 'is really a very very important tool' in that she would write students' responses to questions on it, so that when it was time for the students to construct a mindmap at the end of the lesson 'then whatever they've spoken is all there. I don't know, somehow I feel they can draw a better link because somehow they contributed'. Anna recalled an incident when a student actually asked her if she was really 'even a qualified teacher' because if she really 'knew the answers, [she] wouldn't be asking so many questions'.

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Anna explained that she used a lot of co-operative and group strategies in class because ‘the style of teaching I want to have is not for me to just tell them everything. I actually find that it’s more beneficial for them and they retain the knowledge longer, if they come up with the, if they come and discover things themselves’. In one of her lesson plans on plate tectonics, Anna constructed her own jig-saw puzzles for each group of students where the denser oceanic plates were made from plasticine and the lighter continental plates were made of styrofoam. She then got the students to push different types of plates against each other and to note on a worksheet what would happen to the plates. Anna explained that this was because

I picked out what I wanted them to understand first, and the concept of trying to get them to comprehend the movement of plates just from the video, I felt they couldn’t do it... So for this introduction to landforms and rocks... It’s the simplest thing I could think of, I just let them play around with it and get their own conceptions and own ideas.

Anna continued to use group work in almost every lesson to give students an opportunity to share and build on ideas together despite facing a number of problems. For example, she felt that although her secondary 1 students enjoyed these types of lessons, ‘sometimes it’s just too chaotic’ and she would have ‘loved it if the class could take their noise level down a few notches’. As the average Singaporean classroom has about 40 students, it is unsurprising that group work led to some chaos. Anna, however, distinguished between ‘good noise’ and ‘bad noise’ and believed that the former should be tolerated ‘as long as they’re learning’. Another problem Anna cited was the resistance of her Secondary 2 class to group work and their refusal to engage in tasks together.

I was very shocked with this incident that happened. Like when I ask them to share answers with their friends right, doing group work, they cover their work. I said you have to share, this is a group thing, they said, why should I tell him the answer. They’re not very keen on sharing, they hate group work. They just want you to sit down and lecture them and that’s all.

Anna attributed this to the fact that the students were used to teacher-centred teaching approaches, and stated that it took her up to the ninth or tenth week of Teaching Practice before she made any progress with the class in this area.

Anna also appreciated learning Geography through experiential methods as a student. Apart from the jig-saw activity cited above, she also took the students out of the classroom twice – once to learn about where to site weather instruments and once to observe the trees in the grounds as an introduction to the topic of Natural Vegetation. Regarding the latter activity, Anna felt that

the kids I taught believe that trees just dropped out from somewhere you know, not real. So I thought, ok just let them go out of the classroom, let them draw and touch and write.

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Just as she enjoyed learning experientially and appreciated Geography more as a result, Anna believed that taking her lesson 'out of the classroom is really like very very useful... just by bringing them down, it made a world of difference. I went for only 1 period, but they loved it, they really, really loved it. Even the class that didn't really like group work, they loved it'.

### Influences

In examining the influences on her lesson planning decisions, Anna drew a lot on her own personal experiences of what she liked (experiential learning and teachers who were interested in Geography) and disliked (rote learning and drilling) as a student, as well as on how she built up her own understanding of Geography for herself, for example, at O-levels (quoted above). However, in her discussions, she drew a lot more on the influence of her school mentor or Co-operating Teacher (CT) for Geography. Anna obviously had a high regard for her CT – 'My Geography CT was awesome. He's very very good... I think he really made me see right, above and beyond the nitty gritty things'. Anna's constructivist approach also seemed aligned with her CT's philosophy that 'you know a good lesson is one where you come out of the class right, and the wow moment is given by the student. That's what I try to aim for, whatever lesson that I give, whatever main point, I try to get it from the student'.

She also credited him with many of the activities that she planned for her classes. For example, she stressed linkages across lessons because 'that was actually something that my CT did... and I sort of adopted it'. Her persistence in using group work despite the problems and her adoption of mind maps at the end of lessons was also attributed to the influence of her CT. Anna stated that her CT was very open to her ideas, and believed like she did about experiential learning, encouraging her to spend more time on the lesson on where to site weather instruments, and even providing the impetus for the lesson on Natural Vegetation.

Given that Anna's teaching approaches also dovetailed with the teaching philosophies at the NIE, I asked Anna if she felt that the programme at the NIE had influenced her lesson planning in any way. Anna made reference to isolated teaching techniques, like the Socratic questioning technique, which she felt were useful but overall she dismissed what she had learnt as 'pitched for higher, students with higher abilities'. While Anna admitted that the tools she learnt at the NIE kept co-operative learning 'at the forefront of my mind', she also felt that it was 'definitely my own experience... Yeah I still would have [taught in these ways], I just wouldn't have known the official terms and all that'.

Anna, her CT and the NIE have all espoused similar pedagogical philosophies, yet Anna attributed these to her CT or to her own personal beliefs, and far less to the teacher education programme. In the interviews, Anna often draws a line between her CT whom she cites as practical and in sync with the realities of teaching in a school, and her supervisor who is depicted as unrealistic and out of touch with the classroom context.

Anna felt that her NIE supervisor was a stickler for classroom management – 'My sup's stand is that everyone must be seated, bags to the side, sitting up straight, looking to the

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front, if you want to talk, you raise your hands'. Anna explained that even though her supervisor had no issues with her content knowledge or mastery, she got lower grades from her supervisor on her Assessment for Performance in Teaching (APT) Forms than she did from her CT because 'I think my supervisor had really high expectations. Right down to the T kind, she is very big on classroom control. Cannot lah. In the classrooms that she came to observe, chaos... she didn't like the chaos'. (Anna did obtain the top grade for her Teaching Practice in the end and one of her lessons was even video-recorded for her supervisor's archives). Anna felt that the type of classroom control her supervisor expected from her was not realistic, and that 'in this school ah, really cannot' and it was therefore 'very very stressful every time I heard my sup was coming down'. Anna recounted trying to please her supervisor by taking on board some of her suggestions. 'I got a whistle and everything for like when the sup comes. Of course before that I'd train the class with the whistle thing... There was, to be honest, there was definitely a change in the, like how I taught, when the supervisor came.' However, she felt that such techniques were 'not how the class works'.

Instead Anna, together with her CT, placed the NIE supervision visits as something outside of the regular school context, an inauthentic performance:

My CT always said, when your sup comes down, it's a lights, camera, action kind of thing. So you have to doll it up because it's your grade. If you want to do it for every lesson you will die. So he was very realistic in telling me that.

Anna agreed with him that for her regular lessons, she would continue allowing 'good noise' because 'I don't want to make it fake and all that'.

Although the NIE as an institution espoused constructivist and co-operative learning ideologies, to Anna these appeared incongruent with her NIE supervisor's expectations. She saw the NIE supervisions as something set apart from the everyday school context. Anna also appeared to place much more value on the practical experience of her CT within this school context. Perhaps this is also because Anna found that their 'styles are very similar' to begin with. Anna drew on her CT's advice a lot because they dovetailed with her own beliefs about effective teaching. In the same way, Anna accepted selected techniques (for example, Socratic questioning) that she encountered at the NIE because they co-incided with her own beliefs about the benefits of students constructing their own knowledge.

### Teaching to the Test

As noted above, Anna came to a realization that while she could teach the content of Geography in constructivist ways, there was still a need to focus on examination skills. This was in part due to the school's overall focus on examination results.

Like the first staff meeting that we had, and every staff meeting that I go for, what is always flashed to us is you know the 'O' level results and then

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they had to meet a certain criteria so that they can get Gold or Silver, then after three years they can win some award... so that is the focus of every staff meeting.

Anna also expressed surprise that this focus on examination results meant that there was little effort to build a strong school culture. Anna herself came from a Catholic girls' school in Singapore with a long history and a strong school spirit, and where school events were celebrated with enthusiasm. She therefore found it strange that the school 'tried to squeeze as much academic time in as possible' so that celebrations were conducted in only a half-hearted way. Anna observed that 'I don't know whether it's because it's a neighbourhood school [and therefore lacking tradition and spirit] and I've never been in that kind of situation before'.

However, she started to focus more on the students' examination skills because she realized that they lacked them – 'the school that I went to, the ability of the students was not very high, so I think in that aspect I really had to just go back to the basics and teach them'. However, Anna did not see the teaching of examination skills as separate or contrary to teaching the students for understanding. Instead she realized that when

I dedicated a certain part of my lessons to skills, or even my whole lesson focused on skills right, then that would help them to understand the topic much more... Because when I use a map to explain a topic to them, they know what to look out for, and understand what I'm trying to tell them.

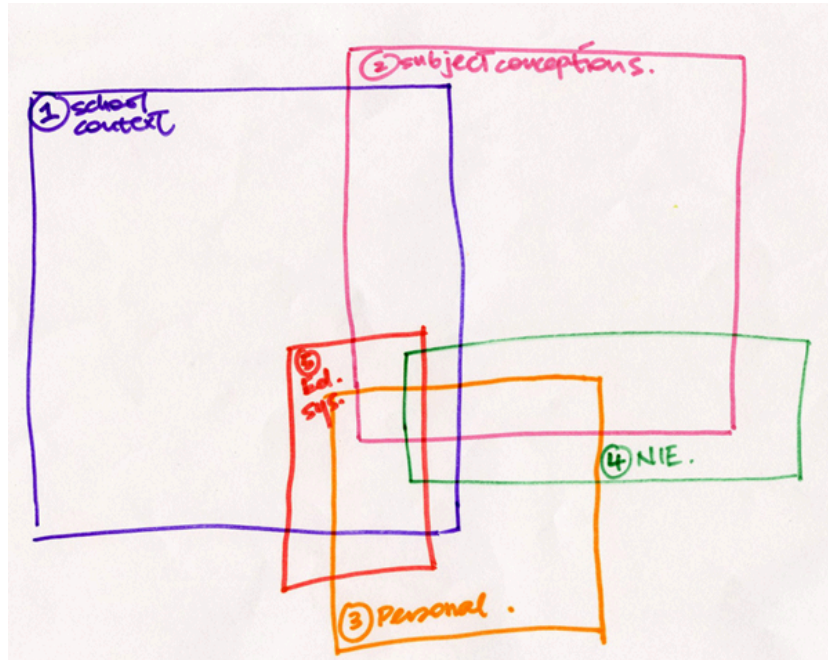
She also felt getting them to learn how to interpret questions and write answers in a systematic way would correct their tendency to just memorise the content when they studied for tests, and 'just see certain words in the question already they just write everything out and nothing to do with the question'.

### Comparing Influences

As noted above, Anna placed great emphasis on the school context and discourses surrounding practical experience in affecting how she planned her lessons. These include influence of her CT in affecting how she taught, the focus on examinations in school and the lower ability of the students which made her focus more on examination skills. In Figure 2 below, it is therefore unsurprising that the school context affected her lesson planning most. In discussing her COI, Anna also cited the same three elements in the school context as most important.



Figure 5.2 Anna's Cultures of Influence Map



Anna's subject conception was clearly articulated around school Geography. Anna believed that her subject conception was the second most important factor in her COI map. She attributed its importance to the fact that

the content and the tools you're trying to pass down to the students comes from your subject conceptions. What is important, what is not important, how I teach it, my understanding also. If I know it more in depth, I can teach more you know.

Anna therefore explicitly makes reference to content knowledge here, which she again attributed to her personal work experience and 'having done my textbook planning and working with curriculum development people in MOE before, so that helped me make it more systematic. I knew why they wanted them to cover things and things like that'. Anna also pointed out that this part of her personal experience overlapped with her subject conceptions. Here what constitutes Geographical knowledge for Anna draws from the power of the state in deciding what is valuable knowledge in school Geography. This is separate from her academic or other types of conceptions of Geography, which do not overlap with her personal experience of working for the MOE to publish textbooks.

Anna did not think that what she learnt at the NIE was very influential. 'I think in terms of the educational paradigms and all that, not really very relevant'. The only parts about the teacher education context which she made reference to when discussing her COI map were a number of isolated techniques and the requirements of the APT form. However, the relative significance of the teacher education context was dwarfed by the school

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context and the discourse of practical experience, as Anna took on board her CT's advice to ignore the form to 'find your [her] style. And so the form became less important'.

Anna believed that the national education context affected her decisions the least. This is because the power of state discourse is mediated through the school context. 'I think largely it falls into the school lah, the policies and all lah, *Teach Less, Learn More*, it falls more to the school'. Anna also acknowledged the contradiction that schools and teachers faced in reconciling the *Thinking Schools, Learning Nation* (TSLN) ethos with intense competition at the national level. She believed that 'at the end of the day they say, yes do this do that or whatever, but the exams are what counts, you know, so it's really just the exam bit. The policies and all you don't really see it being carried out in the school, my practicum school at least, at all'.

### Teacher's Personal Context

Anna referred to Geography's orientation to fieldwork and the casual way that her Geography teachers preferred to dress. In discussing what she felt was appropriate attire for herself as a Geography teacher, Anna also expressed a penchant for 'just being comfortable in whatever you're wearing. You have to be able to walk around the class and do things, and I don't know, just be comfortable?' Anna also pointed out that 'sometimes the classroom is really, really hot. I did find myself going out and buying a lot of short-sleeved things because it's really really warm in the afternoon'.

Although Anna linked her teachers' appearance to 'Crocodile Dundee', Anna did not associate her own dress to that of an adventurer. Instead she pragmatically explained that

I just feel that I have to be comfortable when I'm in class. Because when you're in front, I really feel like you have to entertain the students, you know? And run around, make them sit down, chase them around. Maybe because of that?'

This idea that teacher is someone who performs is also seen in Anna's conception of an effective teacher. 'I feel that when I am in the class right, I'm like a performer. You have to be enthusiastic, you have to, it's all about holding their attention you know.'

Regarding the discourse surrounding teachers' appearance, and the rules that promote a conservative image for teachers - Anna believed that 'most of the rules are alright'. This was because she felt that it would be inappropriate to dress too provocatively and because 'if you're gonna be around boys, or even girls, you have to be a role model in some aspects'. Anna did however raise the issue of body piercings, as she herself wore a nose-stud. In the Singapore context, it is traditional, and therefore acceptable for female Indian teachers to pierce their noses, but body piercings and even multiple ear piercings are considered inappropriate for teachers. Anna explained that when she was doing her Contract Teaching at the Pre-University institute, she was able to reason with her Principal that

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the kids are old enough to know that they are the students and I am the teacher, and when I was a student, I couldn't have one, so they will just have to deal, because I can't just constantly change and be a student again what.

However, she acknowledged that during her Teaching Practice in a secondary school, the context was different due to the age of the students as well as the nature of Teaching Practice as a period of assessment.

I feel cannot lah. I didn't think it was appropriate, so I took it off... also because it was Practicum right, and you want to make a good impression.

**Excerpt from thematic matrix: Subject Conceptions**

<b>Subject Conceptions</b>	<b>Anna</b>	<b>Baozhu</b>	<b>Catrina</b>	<b>Daniel</b>	<b>Eddie</b>	<b>Frederick</b>
<b>Overview of concept map</b>	Comprehensive map for teaching Geog; Bigger concepts: relationship between people and space; relationship changes	Comprehensive, bigger concepts: space, environment, spread, values, skills	Sketchy, big concept: divided into PG&HG, linkages unclear, not annotated, inaccuracies in content and linkages	Comprehensive map for academic Geog; Bigger concepts: paradigms to understand space and place, human impacts on environment, human study of physical environment	Sketchy, big concept: inter-relationship between people and environment, map reading/GIS as means to understand content of Geog	Big concepts: PG, HG, Maps and images; linkages made explicit within and across PG and HG content
<b>Interaction between people and environment</b>	Yes, must have people; only enviro more to do with Science	Yes	People make use of space	Yes, but only one element in Geog	Yes, people are important to Geog	Yes, people are important to Geog, give space meaning
<b>Study of physical landscape</b>	Yes, but only one element in Geog	Yes, esp in relation to resource use	Yes	Yes, but only one element in Geog	Yes	Yes, esp in relation to resource use
<b>Spatial lens</b>	No mention	Yes, Geog is a perspective	No mention	Yes, Geog is a perspective and this perspective changes over time	No mention	No mention
<b>Visual discipline</b>	No particular mention	Yes, represent data, analyse data through maps - in concept map	No particular mention	Yes, to understand movement and flows, space and place	Mapreading and GIS to understand data - in concept map	Yes, data represented through maps and images - in concept map
<b>Conservation</b>	Related to managing changes in rel. between people and space	Yes, important component of Geog, key value	No particular mention	No particular mention	No particular mention	Yes, in relation to resources
<b>Fieldwork</b>	Yes, central to Geog	Yes, central to Geog	No particular mention	Yes, central to Geog	No particular mention	Yes, central to Geog
<b>Distinction between school and acad Geog</b>	Very different, does not incorporate acad geog into map meant for teaching; HG at uni is most interesting part of Geog	Very different; leaves out acad content in map; draws on school geog	Very different, cannot reconcile it, never had to	Has a concept map that is academic in nature, thinks this framework is important in school geog as well	Very different, only developed understanding of geog as inter-relationship bet people and environ at uni	HG at uni is completely diff from school Geog, PG less so

**Participation in Research:  
Pre-Service Geography Teachers' Subject Conceptions and Practice in Singapore.**

I am conducting research on:

- the subject conceptions of pre-service Geography teachers
- what factors have influenced these conceptions
- the influence of subject conceptions on pre-service teachers' classroom practice
- what other factors affect pre-service teachers' classroom practice

This research is being conducted as part of my PhD programme at the Institute of Education in London. It is not affiliated to any research at the National Institute of Education in Singapore and has no bearing whatsoever on your Post-Graduate Diploma in Education programme here. Participation in this research is completely voluntary and you are free to drop out of the project at any point.

Your participation in this research would entail the following:

1. Participation in three rounds of interviews spread throughout the academic year at NIE, each lasting approximately 1 hour.
2. During the interviews you will be asked to discuss your past school/ academic/ personal experiences of Geography, as well as your experiences during Teaching Practice.
3. You will also be asked to take part in photo sorting and ranking exercises, and participate in various (concept/ other) mapping activities.
4. You will also be asked to share the resources and data in your Practicum File with me. The reason for this is so I can have a better understanding of your teaching practice and the influences on these.
5. You will be asked to comment on my analyses of your subject conceptions and teaching practice, as well as the influences on these, during the course of the interviews.

All interviews will be recorded using a digital voice recorder and all the data generated and/or discussed during the interviews may be used in my PhD thesis, as well as in academic publications. Care will be taken to keep the data collected confidential, and no one will have access the raw data files but me. No names will be revealed in my thesis or in any subsequent publications. However, I cannot guarantee that no one will be able to identify who you are based on what I report if they already know you are a participant in this research.

If you are satisfied that you are suitably informed about the nature of the proposed research and the demands it will place on you, please sign and date this document.

**Name and  
signature:**

**Date:**