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Perceptions of Geography as a vocation: a study of secondary school students in the Illawarra and South East region of New South Wales

Abstract

The number of students in NSW studying Geography in the senior years of high school has declined significantly since the 1990s. A number of reasons for the decline in candidature have been suggested in the literature, including: a lack of teachers trained in Geography; an increase in the number of competing subjects; a lack of knowledge of the discipline; irrelevant or boring syllabus content; and negative student perceptions. Limited research has examined how students understand Geography, specifically in terms of its vocational value. Accordingly, this thesis analyses how students and teachers understand Geography. Its two key research questions are:

1. to what extent, and how, do high school students and teachers understand Geography as a vocation?
And
2. do high school students' understandings of Geography as a vocation influence their selection of Geography as a subject in the senior years of schooling?

During 2007, 188 Year 10 and 11 students, and 21 teachers, from four schools in the Illawarra and South East Region of NSW completed a short questionnaire, which examined understandings of Geography as a vocation and a subject. Results from this exercise were that in a broad sense, students and teachers have good knowledge of Geography related careers, and of the high employability of Geographers – although they only proffered this knowledge when prompted. Geography was rarely listed when student and teacher participants were asked what school subjects they considered useful for getting a job, without subject-specific prompts. Additionally, survey results showed that although students understood Geography as a diverse subject, they were more inclined to describe it negatively than positively. Although a core group of 'converts' rated Geography as interesting, relevant and fun, overwhelmingly a majority of students considered high school Geography to be uninteresting, irrelevant and boring.

This thesis concludes that the decline in the numbers of senior high school students studying Geography in NSW is not likely a result of the subject being considered of little vocational value, but rather, as a combination of two key trends: most students simply do not like Geography as currently taught in high school, and choose other, competing subjects considered more interesting, or more vocationally relevant, before Geography – even if they have been made aware that Geography does lead to rewarding careers.

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Perceptions of Geography as a vocation: a study of secondary school students in the Illawarra and South East region of New South Wales

Heather Smith

A thesis submitted in part fulfilment of the requirements of the Honours degree of Bachelor of Science in the School of Earth and Environmental Sciences, University of Wollongong 2009.

The information in this thesis is entirely the result of investigations conducted by the author, unless otherwise acknowledged, and has not been submitted in part, or otherwise, for any other degree or qualification.

Signed: _____

April: 2009

Abstract

The number of students in NSW studying Geography in the senior years of high school has declined significantly since the 1990s. A number of reasons for the decline in candidature have been suggested in the literature, including: a lack of teachers trained in Geography; an increase in the number of competing subjects; a lack of knowledge of the discipline; irrelevant or boring syllabus content; and negative student perceptions. Limited research has examined how students understand Geography, specifically in terms of its vocational value. Accordingly, this thesis analyses how students and teachers understand Geography. Its two key research questions are:

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List of Acronyms and Abbreviations

ACER	Australian Council for Educational Research
ACT	Australian Capital Territory
ANZSCO	Australian and New Zealand Standard Classification of Occupations
BC	Before Christ
DET	Department of Education and Training
GIS	Geographical Information systems
HSC	Higher School Certificate
HSIE	Human Society and Its Environment
ICT	Information and Communication Technologies
IT	Information Technologies
KLA	Key Learning Area
LOTE	Language other than English
NSW	New South Wales
PD/H/PE	Personal Development, Health and Physical Education
RGS	Royal Geographical Society
TAFE	Technical and Further Education
USA	United States of America
WWII	World War Two

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CHAPTER 1: INTRODUCTION

Media articles have appeared in recent years with headlines such as; ‘Geography loses half its students’ (Ferrari 2006), ‘Find a way to make Geography popular’ (Baker & Norrie 2005) and ‘Teachers’ Perceptions: Why NSW students are not electing to study Geography in Years 11 and 12’ (Hamper & Kleeman 2007). Geography, it seems has an image problem.

Yet, in an increasingly connected dynamic global climate, where all contemporary issues are described as geographical in nature (Conolly 2000), Geography education is clearly more needed than ever, being ‘fundamentally important to wellbeing... in a global society, economy and environment’ (Wilbanks 1995:315), as well as preparation for ‘global citizenship and environmental responsibility’ (Bjelland 2004:329). Previous studies have examined the growth of careers in which Geography is a relevant discipline (Gober et al. 1995a; Le Heron & Hathaway 2000; Holmes 2001; Gedye et al. 2004; Murphy 2007; Sidaway & Johnston 2007), and the high employability of Geography graduates (Briggs 1988; Zhou et al. 1999; Le Heron & Hathaway 2000; Van Noorden 2001; Greiner et al. 2002; Kneale 2002) while the Environmental Education Database lists over 700 environmentally related programmes available at the undergraduate and postgraduate levels in Australia (Thomas et al. 2007). Despite all this, numbers of Geography students in the senior years of high school in NSW continue to decline (Figure 1.1).

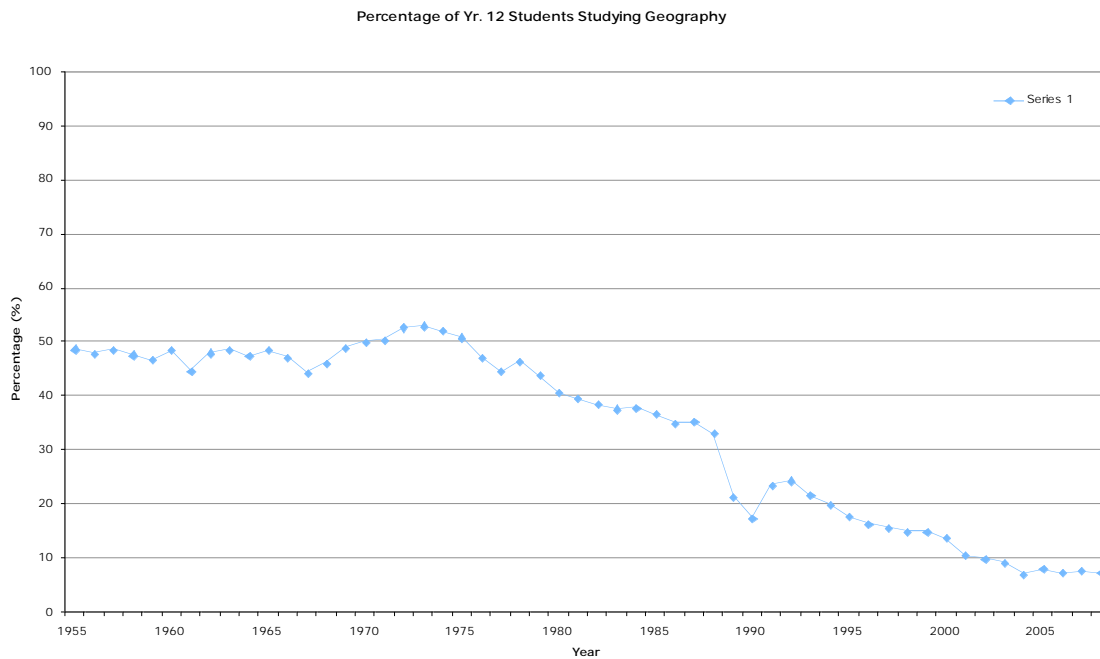


Figure 1.1: Percentage of Year 12 students studying Geography in NSW

Source: NSW Board of Studies statistics archive (2008)

Despite societal need and employability, Geography in the secondary school ‘is suffering a step decline in popularity’ (Baker & Norrie 2005:7). Between 1990 and 2000, there was a decline of 59 percent in HSC students in NSW. Furthermore,

in 2000, when the HSC was overhauled, 6420 sat geography. By 2003 the figure had fallen to 5623, and last year it was 4466. The Geography Teachers Association blames the fall on fatigue after compulsory study in years 7-10, a perception the study is irrelevant and a growing number of HSC subject options. (Baker & Norrie 2005:7)

Candidature figures for the NSW HSC Geography course from 2005 to 2008 were: 4,913, 4,504, 4,528 and 4,299, respectively, or as a percentage of total candidature: 8.5, 7.7, 7.7 and 7.2 percent, respectively. The decline in student numbers in the senior years of high school has not been isolated to NSW, but has been identified both Australia-wide and internationally (Ainley et al. 1994; Ballantyne 1996; Cranby 2001; Bliss 2006; IAG et al. 2006; Hamper & Kleeman 2007).

This thesis responds to the circumstances regarding the state of Geography education at the secondary school level. It was catalysed following dinner with a friend, and his sixteen-year-old son, Tom, in 2006. Tom had recently read Naomi Klein's 'No Logo' (2000) and was very interested in what he had read. Sometime during the conversation I mentioned that I had read 'No Logo' as part of my undergraduate Geography studies. Tom, whom was quite surprised, questioned me about how concepts considered in 'No Logo', such as 'branding', the international division of labour and globalisation, were relevant to the study of Geography. Rather than explain the relevance of these concepts, I questioned Tom about what he thought Geography was, and what he understood Geographers to do. His understandings of Geography as a subject, and the nature of geography-related employment were particularly limited, particularly as he was close to completing Year 10, and had therefore studied Geography at school for the last four years. His understanding, of Geography as a discipline and vocation, comprised of 'looking at rocks and maps'. The experience caused me to consider more deeply how students understand Geography, and whether student misunderstandings of the discipline were responsible for the decline in students selecting to study Geography.

This thesis accordingly examines NSW Year 10 and 11 students', and teachers' understanding of Geography as a vocation and as a subject, in order to determine if student understandings impact on the number of students electing to study Geography in the senior years of high school.

Throughout 2007, the NSW Board of Studies conducted a review of Geography education in NSW, 'following a recommendation in the 2006 HSIE Syllabus Evaluation Report' (Swan 2007a). The review considered the current state of Geography in NSW, in years K-12, in relation to syllabuses, teaching practices, research, trends and future directions (Swan 2007b). Remarkably, the results of this review have and will not be made available to the public. Furthermore, the BOS review did not consider the role of 'vocation' as a factor influencing selection of geography. Accordingly, this thesis seeks to fill these gaps.

1.1 RESEARCH AIMS AND OBJECTIVES

The purpose of this thesis is to examine if and how high school students and teachers understand Geography *as a vocation*. The thesis is organised around two primary research questions:

1. to what extent, and how, do high school students and teachers understand Geography as a vocation; and
2. do high school students' understandings of Geography as a vocation influence their selection of Geography as a subject in the senior years of schooling?

By answering these two questions, this thesis will provide a description of how Geography is understood by students and teachers, as well as determine factors that influence subject selection by students at the senior school level, and how Geography as a discipline is located within these factors. A questionnaire based, quantitative methodology was adopted for this thesis. Students in Years 10 and 11, as well as teachers from four schools, located within the Illawarra and South East Region of NSW completed a short anonymous questionnaire during 2007. The questionnaire collected information, including demographic characteristics; participant's understandings of the factors influencing subject and career decision-making; participants' understandings of Geography as a vocation; and participants' descriptions of Geography as a subject. This methodology allowed for the researcher to collect data that answered the research questions, and for comparisons of different variables.

1.2 THESIS STRUCTURE

This thesis is organised into five chapters. Following this introductory chapter, Chapter 2 reviews literature relevant to the thesis, including the history, role and state of Geography education; the changing role of universities in career preparation; geographical careers; and student career and subject selection. Chapter 3 details the research methodology adopted, Chapter 4 presents the results of the research, and Chapter 5 synthesises the findings of the thesis and makes conclusions about the implications of this research for Geography teachers, discipline leaders and subject marketing.

CHAPTER 2: LITERATURE REVIEW

2.1 THE HISTORY AND ROLE OF GEOGRAPHY EDUCATION

This section examines literature that considers the history, role and state of Geography education. Initially, the foundations and establishment of the discipline, both internationally and in Australia, are considered. An analysis of literature detailing the current ‘state’ of the discipline, at the school and tertiary level is presented, in order to establish the context in which this research is located.

According to Martin (2003) it is difficult to consider the ‘history of geography’, as each country has its own history of geographical thought. Despite the fact that literature exists detailing the ‘history of geography’, it is not an area where academics have conducted much research, and consequently, Martin (2003) contends that the area has not advanced.

2.1.1 The foundations of the geographical discipline

The origins of the discipline of Geography are well documented in the literature (Gould 1985; Holt-Jensen 1999; Martin 2003; Johnston & Sidaway 2004; Sherman et al. 2005), with all agreeing that geographical thinking existed long before Geography as a formalised discipline. Holt-Jensen (1999) analyses Geography from the ancient world to the Middle-Ages (400s to 1400s), through the Renaissance (1300s to 1600s), into the modern period, which Martin (2003) contends began in the mid 19th century with the work of Von Humboldt and Ritter. Holt-Jensen (1999) states that the term ‘Geography’ was first used about 300BC by scholars at the Museum in Alexandria, however details how interest and thinking about geographical concepts are much older than this. This is a paradox, as Gould (1985) argues: ‘it is among the oldest areas of human enquiry in the world, and yet is also one of the most recent intellectual disciplines if we judge it in modern academic terms’ (1985:8).

According to Holt-Jensen (1999) throughout much of the Middle-Ages, few advances were made in Scientific, and subsequently, geographical thinking in Europe. At that time, ‘scholars made accurate but sterile copies of the works of the ancients, rejecting anything

that did not conform with the dogmas of the Christian Church' (1999:19). Holt-Jensen's (1999) account of Geography, acknowledges the Eurocentric position of much of the literature in the area, analysing the contribution of Arab and Chinese geographers throughout this time.

The Renaissance period in Europe, resulted in a revival of geographical thinking from ancient times, as it was considered a necessity for global exploration and colonial expansion (Holt-Jensen 1999). From the 1500s, it was possible in the UK to study subjects that are today identified as geographical, such as map-making, exploration and chorography, though these were not taught by scholars formally trained in Geography (Johnston & Sidaway 2004). Holt-Jensen (1999) and Johnston and Sidaway (2004) outline the role of 'Geographic Societies' in promoting the development of Geography as a discipline throughout Europe, and although some existed from the 16th century, the first modern society was the Société de Géographie de Paris (established 1821). Holt-Jensen (1999) estimates that almost 100 geographical societies, with more than 50,000 members existed around the world by 1885.

2.1.2 Geography education internationally

James (1972) contends that an educational organization, providing specialist training in a subject is a distinguishing feature of an academic discipline. Geography as an established discipline therefore began in 1874, when university departments were founded in Germany, and soon after in France, Switzerland, Britain and America (Huckle 1985; Holt-Jensen 1999; Johnston & Sidaway 2004; Castree 2005; Sherman et al. 2005; Murphy 2007; Sidaway & Johnston 2007). At the school level, Geography was a widespread subject from the 1850s in Germany, Switzerland and France, and was 'a means to develop children's power of observation' (Holt-Jensen 1999:30).

It is argued in the literature, that university Geography was invaluable in reinforcing ideas of the nation-state, colonial expansion, trade and development (Holt-Jensen 1999; Castree 2005) as Geographical Societies promoted the discipline, and 'sought to widen support for expeditions and research' (Holt-Jensen 1999:29). Others contend that the spread of

university Geography was a result of the need for trained Geography teachers (Bednarz et al. 2003; Johnston 2005; Sidaway & Johnston 2007).

Subjects of a geographical nature were taught throughout British universities and schools, however, it was not recognized as a separate discipline until the late 1800s/early 1900s, (Sidaway & Johnston 2007) and was not held in high esteem in these early years (IAAMSS 1967). Although Geography was present in many British secondary schools throughout the 1800s, Sidaway and Johnston (2007) contend that it suffered, due to the nature of the subject matter, the teaching, and the fact that it was not supported by the presence of the discipline at university. The Geography that was taught in Britain, Europe and the USA at this time, involved the study of place names (Lambert & Balderstone 2000) and 'learning by rote long lists of facts and generalizations' (IAAMSS 1967:3), and is described by Castree (2005) as banal and descriptive.

The Royal Geographical Society (RGS) was established in the UK in the 1830s, and Sidaway and Johnston (2007) describe how it was through their promotion and ongoing financial support, that university Geography in Britain was implemented, initially with a reader in Geography at Oxford University in 1887, followed by Departments at Cambridge in 1888, Manchester in 1892 and Oxford in 1899 (Holt-Jensen 1999; Sidaway & Johnston 2007). The establishment of Geography at American universities and schools was similar to Britain (Murphy 2007). The first Geography academic began teaching at Harvard in 1878, with the first department established at the University of Chicago in 1903. By 1914, Geography departments existed at Harvard, Yale, Teachers College (Columbia University), and the Wharton School (University of Pennsylvania) (Holt-Jensen 1999).

As it became formalised in university departments and school curricula throughout the late 1800s and early 1900s, the nature of Geography as a subject, and the teaching of it changed (IAAMSS 1967; Huckle 1985; Gregg & Leinhardt 1994; Holt-Jensen 1999; Lambert & Balderstone 2000; Johnston & Sidaway 2004; Castree 2005; Sherman et al. 2005; Murphy 2007; Sidaway & Johnston 2007). By this time too, global exploration had declined (IAAMSS 1967; Johnston 1993; Kent 2002; Lam & Lai 2003; Zhang & Foskett

2003; Johnston 2005). According to Zhang and Foskett (2003), Geography in British schools moved from being the 'capes and bays' Geography of the 1930s, to 'regional' Geography', and in the early 1960s to a 'case study' focused geography, that was later replaced by 'quantitative' and 'environmental' Geographies. Similarly, Lam and Lai (2003) detailed the 'conceptual revolution' of Geography that occurred in the second half of the twentieth century, contending that developments and changes in the nature of school Geography closely followed those occurring in academic geography.

Academic literature provides accounts of Geography, at the tertiary and school levels, at different scales, with much suggesting a 'crisis' in geographic education (De Souza 1984; Le Heron & Hathaway 2000; Bednarz & Bednarz 2004; Birkenhauer 2004; Doherty 2004; Keane 2004; Logie 2004; Rawling 2004; Robertson 2004; Semple 2004; Vaughan 2004; Winter 2004). However, as Butt et al. (2006), contend, many of these provide merely descriptive accounts, with few providing the findings of empirically based research. The nature, purpose and status of Geography as a school and university discipline, is a prominent theme of literature in the area (Hopwood 2004); however, analysis of the 'state' of geographic education is not common across, or even within countries (Conolly 2001).

In the UK, Geography was a popular and academically respected school subject throughout the 20th century, with a National curriculum existing from 1991 for students in the 5-14 years age groups (IAAMSS 1967; Rawling 1997; Conolly 2001; Bonnett 2003; Rawling 2004; Vaughn 2004; Sidaway & Johnston 2007). Although compared to other countries, Geography remains popular in the UK, it is suggested in the literature, that this is changing, with declines in student numbers in the post-compulsory school years (Adey & Biddulph 2001; Gardner & Craig 2001; Kent 2002; Bonnett 2003; Hopwood 2004; Sidaway & Johnston 2007).

In contrast, in America, Geography never had a prominent role as a discreet subject, being taught as part of the Social Studies curriculum (Grosvenor 1989; Gritzer 2003; Jones 2006). Unlike in the UK, there has been an increased focus on Geography education at the school level, specifically on geographic literacy (RGC 1997; Stoltman & Wardley 1997; Murphy 2001; Bednarz 2003) and an increase in numbers of high school graduates who

have studied Geography since the 1980s (Le Heron & Hathaway 2000). Similarly, in other countries, the 'state' of Geography education is varied, (Keown 1997; Le Heron & Hathaway 2000; Vodenska 2000; Conolly 2001; Mezosi et al. 2001; Lam & Lai 2003; Logie 2004). The literature offers a number of reasons for the decline in school students studying geography, however the most common across all countries are; teacher training, which Rawlinson et al. (2003) argues impacts on students' perceptions of the subject (Murphy 2001; Bednarz et al. 2003; Bonnett 2003; Bednarz et al. 2004) and the increase in the number of subjects available for selection (Slater 1995; Keown 1997; Sidaway & Johnston 2007).

Similarly, the situation at the university level is also varied. In the UK, Geography has long been an established discipline, and remains as a strong and discreet discipline in most of the older, and some of the newer institutions (Sidaway & Johnston 2007). In recent years though, student numbers, particularly in undergraduate courses have fallen (Rawlinson et al. 2003; Sidaway & Johnston 2007). In America, Geography existed as a strong discipline, experiencing significant growth between the 1950s and 1970s (Wilbanks & Libbee 1979; Libbee 1984), following, which a decline in student numbers occurred (Libbee 1984; Gober et al. 1995a; Murphy 2001). Today it is taught at only approximately 20 percent of higher education institutions (Bjelland 2004). Although student numbers are not as strong as in some other disciplines (Gober et al. 1995a)¹, an increase and expansion of Geography programmes has occurred (Gober et al. 1995a; Wilbanks 1995; RGC 1997; Bjelland 2004). Just as the school situation is varied across countries, so too is the status of Geography at the tertiary level (Nel 1998; Mezosi et al. 2001; Vodenska 2000; Barnes 2007; Li et al. 2007; Tapiador & Martí-Henneberg 2007). The literature in the area tends to observe trends in enrolments, but does not clearly address the underlying reasons for the current state of Geography at the tertiary level. Clearly the situation is not uniform. More research is therefore required in analysing what perceptions of Geography sit behind the enrolment trends in a specific regional educational context. This thesis attends to this need.

¹ It is essential to note, that although declines in student numbers are occurring in Geography at the school and tertiary level, in various countries, literature indicates that this is not a problem isolated to Geography (Gibson 2007), but rather is occurring to many subjects across various faculties.

2.1.3 Geography education in Australia

Conolly (1996) details the place of Geography in the school education in Australia from the early 1900s, when it was taught as part of the Social Studies learning area. The Geography taught during this period was 'place' geography, which focused primarily on NSW and Australia. Like in Britain and the USA, education in Australia underwent significant changes during the second half of the twentieth century. At the tertiary level, Geography departments did not exist until into the 20th century, with only five full-time geographers employed in Australian universities in 1951 (Fagan & Jacobs 1998). However, growth following this period was rapid, and in 1960, there were seven Geography departments employing 42 academic staff, and by 1972 there were 17 Geography departments employing 140 academic staff (Fagan & Jacobs 1998).

Today, Geography does not exist as an independent subject in the primary school curricula of any of the states/territories of Australia, but rather exists as a component of an amalgamated subject (Butler & Simpson 1996; Conolly 1996; Biddle 1999; Battalis & Boland 2006; Bliss 2006). At the secondary school level, both the structure, and status of Geography varies across and within the states/territories; however, Geography is available as an elective Australia-wide in the post-compulsory school years, and is only compulsory as a discreet subject before this time in NSW. Generally there has been a decline in student numbers (Ainley et al. 1994; Ballantyne 1996; Cranby 2001; Bliss 2006; IAG et al. 2006; Hamper & Kleeman 2007) that Gibson (2007) describes as widespread, but not universal. Overall numbers have declined in NSW (Conolly 1996; Conolly 2001; Cranby 2001), South Australia (McInerney & Sheperd 2006), the Northern Territory (Battalis & Boland 2006), Victoria (Kriewaldt 2006), the ACT (Freeman 2006), and Tasmania (Robertson 1996). In Queensland, total numbers have not decreased, but the situation varies from school to school (Ballantyne 1996; Smerdon 2006). Similarly, although student numbers have declined in both NSW and the ACT, some schools, particularly non-government schools, have experienced increases in the post-compulsory years of schooling (Conolly 2001; Freeman 2006).

The reasons reported in the literature for this decline in numbers, include: Geography is increasingly taught by teachers with no training in Geography (Ballantyne 1996; Conolly

1996; Cranby 2001; Bliss 2006; Hutchinson 2006; Kwiewaldt 2006; Smerdon 2006; Gibson 2007); there has been an increase in the number of competing subjects available (Baker & Norrie 2005; Davy 1995; Bowman & Rimmer 1996; Hutchinson 2006; Kwiewaldt 2006; Smerdon 2006; Gibson 2007; Hamper & Kleeman 2007); unfavourable timetabling (Bliss 2006; Hutchinson 2006); the elimination of an extension course (Bliss 2006; Hutchinson 2006); lack of knowledge of the discipline as it is taught as an incorporated subject in all states/territories of Australia, except for NSW (Baker & Norrie 2005; Battalis & Boland 2006; Freeman 2006); irrelevant or boring syllabus content (IAG 2006; Gibson 2007; Hamper & Kleeman 2007); negative student perceptions of Geography (Hutchinson 2006); and other subjects being perceived by students as contributing more than Geography to future employment (Bliss 2006; Hamper & Kleeman 2007).

At the university level, the status of Geography is similarly varied, and as Gibson (2007) states, is a complex and contradictory issue. Much literature details the amalgamation of Geography into multidisciplinary departments (Winchester 2001; Harvey et al. 2002; Holmes 2002; Gibson 2007), and while Geography no longer exists as an independent school at an Australian university, it has not disappeared from any Australian institution (Gibson 2007). Burnley (2001) reports a decline in overall student numbers in Australia, while some literature details increases in undergraduate and postgraduate enrolments (Robertson 1996; Beer 1998; Holmes 2002; Kriewaldt 2006; Gibson 2007). Other literature points to different measures of the health of Geography as an academic discipline, such as research publication and citation (Jones 2002; Gibson 2007) in which Geography far outnumbers other larger disciplines. Yet still missing from this body of work is a close empirical analysis of how students in Australia perceive geography, and how this affects subject selection decisions. This thesis undertakes this task in relation to the specific issue of whether students perceive Geography as vocational – as leading to a career.

2.2 GEOGRAPHICAL CAREERS

This section examines literature considering geography-based careers. Initially, the changing role of universities is established, followed by an in-depth analysis of

understandings, and past and present trends in geography-based careers. The findings of an audit of literature in the area of geographical education are presented, outlining significant gaps in literature concerning Geography as a vocation - which the results of this thesis, presented in Chapter 4, help to fill. Following this, literature in the area of student career choice will be reviewed, considering the factors known to influence decision-making, research in the area, and an analysis of literature that considers the choice of geography-based careers, in order to locate this research within current academic knowledge.

2.2.1 The changing role of universities and career preparation

University education around the world has become increasingly neoliberalist, whereby students are considered customers whom purchase a good (Clark & Higgitt 1997; Gardiner 1998; Zhou et al. 1999; Gedye et al. 2004). These changes have impacted on the expectations and nature of tertiary education. Clark and Higgitt (1997) argue that as students are increasingly paying consumers of tertiary education in the UK, it is becoming increasingly accepted that a university degree is 'preparation for a career' (1997:199). Consequently, Croot and Chalkley (1999) argue that Geography at the tertiary level is losing students, as students chose to study subjects perceived to be the most vocational, of which Geography is not. Similarly, Gedye et al. (2004) contend that the cost of tertiary education incurred on students has placed pressure on universities to produce graduates who are able to compete successfully in the employment market.

2.2.2 Understandings of Geography as a career

This scenario – in which Geography suffers because of its lack of vocational relevance – is contradicted by actual experience. Geography graduates are identified in articles, both recent and older, as being 'highly employable' due to the desirable skills that they develop during their degree (Briggs 1988; Zhou et al. 1999; Le Heron & Hathaway 2000; Mezosi et al. 2001; Van Noorden 2001; Greiner et al. 2002; Kneale 2002). Le Heron and Hathaway (2000) contend that most Geography graduates in NZ, Australia and the USA find employment in professional occupations outside of teaching. Alternatively, the skills and experience developed through the study of Geography have said to be 'important in a

whole range of careers, but not central to many' (Van Noorden 2001:20). This, according to many who write in the area, is part of the problem, of the long held perception that studying tertiary Geography leads to limited employment opportunities (Le Vasseur 1999; Le Heron & Hathaway 2000; Conolly 2001; Cranby 2001; Hay 2001; Greiner et al. 2002; Gedye et al. 2004).

Geography at the tertiary level has been misunderstood in terms of its career value (Le Vasseur 1999; Le Heron & Hathaway 2000; Conolly 2001; Cranby 2001; Hay 2001; Greiner et al. 2002; Gedye et al. 2004). Greiner et al. (2002) contend that the stereotype in which Geography is considered a field with limited employment prospects continues. Similarly, Mezosi et al. (2001) contend that despite the high demand for geographers, there is little awareness of these options. As to the misunderstanding of geography's vocational value, different perspectives and causes have been identified and analysed by different authors. Two significant, and interrelated factors, commonly detailed in the literature, are the perceived non-specialist nature of Geography and the 'identity' of geography.

Because Geography is broad, it is often considered to be a non-specialist discipline (Conolly 2001; Greiner et al. 2002). Consequently, the wide range of careers that geographers are employed in, are not as readily explained or understood as other occupations. According to Greiner et al. (2002:153) 'Geography continues to struggle with an image problem that not only affects popular understanding about the discipline but also complicates awareness of employment prospects'.

Geography, and geographically related careers are often described in the literature, as having an 'identity' issue (Rawling 1997; Le Vasseur 1999; Conolly 2001; Cranby 2001; Hay 2001; Greiner et al. 2002; West 2003). Greiner et al. (2002) argue that this is not a new issue, and is due of the lack of jobs that contain the term 'Geography' in their title. Those employed in non-Geography related careers identify themselves with a term that is easily understood and indicative of their training, however, Geography graduates are rarely employed in a job titled 'geographer' (Gober et al. 1995a, 1995b and 1995c; Conolly 2001; Hay 2001). Hay (2001) contends that professional geographers might refer

to themselves as economists, urban planners, geologists, or environmental scientists. Consequently, students, and the wider public are unaware of the employment options available to university Geography graduates.

In a rare comparative study to this thesis, Le Vasseur conducted research in 1999, into student knowledge and understandings of Geography as a career. 359 American school students were surveyed. Results revealed that students have a limited understanding of Geography related careers, with most listing map-making, exploring and meteorology when asked what careers geographers are employed in.

2.2.3 Past trends in Geography careers

Much literature outlines the careers in which Geography graduates were employed prior to the 1990s (Wilbanks & Libbee 1979; Lawton 1980; Balchin 1983; Briggs 1988; Healey 1989; Unwin 1991; Walford 1991; Miyares & McGlade 1994). There is nodisagreement in the literature about the careers in which Geography gradates in the UK, America and Australia were employed in during the mid-20th century. According to Balchin (1983) Geography graduates were limited in number, and were overwhelmingly employed as teachers prior to WWII. This began to change, with the establishment of planning departments following WWII, and throughout the 1960s and 1970s Geography graduates were primarily employed as teachers, town planners and academics. Further changes followed in the employment patterns of Geography graduates (Lawton 1980; Balchin 1983; Clark & Higgitt 1997) and ‘graduates penetrated into a wide range of professional posts in local and central government, industry, commerce, banking and accountancy’ (Balchin 1983:334). Li et al. (2007) survey of 20 tertiary Geography departments in China revealed similar trends in the employment destinations of graduates. While Geography graduates were formerly employed as teachers, academics and public servants, this situation has been changing, and since the 1990s, employers in many other sectors have recruited Geography graduates.

While not all literature in the area reveals such positive patterns of diversification of tertiary Geography graduates during this post war period (see Wilbanks & Libbee 1979) research conducted throughout the 1980s and early 1990s generally reveals a healthy

position for tertiary Geography graduates entering the workforce (Lawton 1980; Balchin 1983; Briggs 1988; Walford 1991). Lawton (1980) contends that due to the valuable skills developed during a Geography degree, graduates are able to find employment in a range of occupations. Balchin's (1983) research identified over 90 occupations where Geography graduates were known to be employed, with approximately only 20 percent and two percent of the 2500 Geography graduates in the UK, annually, employed in teaching and planning respectively. Similarly, Briggs (1988) surveyed 202 Geography graduates from the University of Glasgow, and revealed Geography graduates were employed in a diverse range of occupations, and experienced high employment levels, with only '5 graduates out of the 202 over the 7 year period unemployed 3 months after graduating, an unemployment rate of 2.5 percent' (Briggs 1988:137). These findings are supported by Walford (1991), who found that Geography graduates show both a short and long term ability to gain employment following graduation, with 89 percent of Geography graduates in fulltime employment 6 months after graduation, compared with 83 percent for other graduates.

2.2.4 Current trends in Geography careers

Discrepancies exist between people's understanding of contemporary Geography, its vocational value, and the employability and career options for university Geography graduates. Research has shown that Geography graduates today are employed in a diverse range of careers (Gober et al. 1995b; Le Heron & Hathaway 2000; Holmes 2001; Gedye et al. 2004; Murphy 2007; Sidaway & Johnston 2007). Murphy (2007) describes how the job market continues to expand in America for Geography graduates, as does Gibson (2007:99), who contends that 'the infiltration of geographical information technologies (GIS) and methodologies (focus groups, surveys, interviews) into mainstream planning and social and environmental impact assessment has meant new vocational streams for Australian Geography graduates, complementing traditional career paths'.

A number of studies have been conducted that further contribute to the knowledge available concerning the employability and employment destinations of Geography graduates. Gober et al. (1995) conducted a study which surveyed Geography graduates in America about their experiences finding employment, and revealed that over 75 percent of

graduates were employed, and 18.7 percent were completing further study (Gober et al. 1995a, 1995b, 1995c), with

respondents clustered into five predictable occupations: teacher (15.6%), environmental manager/technician (12.9%), GIS/remote sensing specialist (10.5%), cartographer (8.2%), and planner (6.7%)' (1995b:331–332).

Gedye et al. (2004) surveyed 105 geographers who graduated, between 1994 and 1999, from The University of Plymouth. The results were similar to Gober et al. (1995a, 1995b, 1995c), with the most common careers for Geography graduates being teaching (16%), banking/finance/accounting (12%) and project management (9%).

While the research by Gober et al. (1995a, 1995b, 1995c) and Gedye et al. (2004) showed that teaching is a significant source of employment for geographers, a study by Rawlinson et al. (2003) surveyed 127 Geography teachers in North East England, showing few 'younger' Geography teachers, with the largest cohort (43 percent) in the 41 – 50 year age group, suggesting that fewer Geography graduates are seeking employment in the education sector, something that has also been observed by Bednarz et al. (2004).

While these studies demonstrate the diversity of the employment in which university Geography graduates are employed, they also provide evidence of the employability of Geography graduates. Gedye et al. (2004) found that 82 percent of graduates were in full-time employment, 2 percent were unemployed, and the remaining 16 percent in other pursuits. Similarly, Clark and Higgitt (1997) surveyed 103 Geography graduates from the years 1984, 1989 and 1994 from two British universities, showing that most Geography graduates obtained employment quickly. Le Heron & Hathaway (2000) contend that 'starting salaries are very competitive with or better than those of other science and arts disciplines, and geographers are well represented in higher income cohorts' (2000:274). Given these results, why then are students seemingly unaware of geography's vocational orientation? To answer this needs close examination of students' perceptions of Geography in relation to career paths.

2.2.5 Literature audit

To situate this study more precisely in the field of geographic education research, an audit was conducted of literature, from ten years of nine selected Geography journals. The criteria used for selecting the articles were that the articles were on the broad subject of geographical education and that the articles were published in refereed journals. Both the titles and abstracts of articles published between 1997 and 2006 were recorded and analysed, from journals that were considered by the author to be most likely to contain relevant articles on geographic education and careers (Table 2.1 and 2.2). The journals searched were *The Journal of Geography in Higher Education*, *International Research in Geographical and Environmental Education*, *Journal of Geography*, *Geographical Education*, *The Professional Geographer*, *Geographical Research (formerly Australian Geographical Studies)*, *South Australian Geographical Journal* and *The Geographical Journal*.

Table 2.1: Journal Articles on Geographical Education

Journal Title	Subject of Article										Total
	1	2	3	4	5	6	7	8	9	10	
<i>Journal of Geography in Higher Education</i>	14	5	16	54	13	31	26	49	4	152	364
<i>International Research in Geographical and Environmental Education</i>	0	6	74	15	1	6	11	21	25	178	337
<i>Journal of Geography</i>	2	4	13	52	5	12	11	43	10	80	232
<i>Geographical Education</i>	1	0	9	8	2	5	1	7	2	34	69
<i>The Professional Geographer</i>	0	0	5	0	0	4	0	2	0	5	16
<i>Geographical Research (formerly Australian Geographical Studies)</i>	0	0	3	0	0	0	7	0	0	2	12
<i>South Australian Geographical Journal</i>	1	0	7	0	0	0	0	0	0	2	10
<i>The Geographical Journal</i>	0	0	0	0	0	0	0	1	0	1	2
<i>The American Geographical Society's Focus on Geography</i>	0	0	0	0	0	0	0	0	0	0	0
Total	18	15	127	129	21	58	56	123	41	454	1042

Table 2.2:Key to Subject of Articles

Key to Subject of Articles			
1	Geography as a vocation (careers and work experience in geography)	6	Courses, curriculum and standards in Geography education
2	History and philosophy of Geography education	7	Research methodology and fieldwork in Geography education
3	The state of Geography education	8	ICT in Geography education
4	Teaching methodology and related issues in Geography education	9	Geography academics, teachers and teachers in training
5	Learning strategies and key skills in Geography education	10	Other

The audit returned 1042 articles. It revealed extensive research on some areas of school and tertiary Geography education, specifically that regarding the state of geographical education, teaching methodology, and the use of ICT in Geography education (confirming the findings of Grosvenor 1995). The audit also highlighted a relative absence of academic literature specifically relating to Geography as a vocation. Of the 1042 articles located, only 18 (or 1.7 percent) considered vocational issues. Given this paucity, it is necessary to conduct further investigation into the factors that influence students in selecting subjects and careers, particularly the role of the perceived vocational nature of a subject.

These findings are supported by Brown (1997) who argued that literature in the area of geographic education was too focussed on instructional strategies and materials. In contrast, Warf (1999) argued against this conception that all geographic education literature is simplistic, non-analytical and lacking in academic rigor, and give many examples of literature in the area that are not simply descriptive accounts of classroom pedagogy and instruction. It is not the purpose of this thesis to engage in the debate about the intellectual quality of research in the area of geographic education, but rather to address debates about vocational orientation. Because this theme is underemphasized in the literature, the thesis proceeds accordingly to determine if secondary high school students and teachers perceive Geography as vocational, and if perceptions of Geography as a vocation influence their selection of Geography as a subject in the senior years of high school.

2.2.6 Student career choice: prior research

Research in the area of vocational education dates back to the early 1900s (Patton 2001). In Australia, much of this considers the occupational decision making of students, specifically within the vocational psychology and sociology disciplines (Beavis et al. 2005). The literature acknowledges that changes have occurred in society, and to the nature of 'work', with these changes resulting in an increasing in the importance of workplace preparation (Vick 1996; Patton 2001; Jarvis & Keeley 2003; Lairio & Penttinen 2006). Lairio and Penttinen (2006) describe how processes, such as globalisation and new technologies produce social changes, and are 'reshaping the structures of working life and the contents of work, creating new kinds of work and generating increasingly diversified expectations regarding occupational skills, social competencies, and learning in new situations' (2006:144). As a result, it is today a function of secondary schools and universities, in Australia, as elsewhere, to provide students with the necessary knowledge and skills, to enable them to make informed choices regarding careers, and subsequently, to successfully find employment (Vick 1996).

Athanasou (2003) contends that student career choice is influenced by a combination of interrelating factors, however, most of the research focuses on three main topics: the factors influencing career decision-making, the difficulties students face during the process of career decision-making, and student aspirations for future careers (Mullis et al. 1998; Patton 2001; Mortimer et al. 2002; Athanasou 2003; Walker 2006).

A number of studies have examined the career intentions of high school and university students (Beavis et al. 2005; Lairio & Penttinen 2006; Walker 2006; Witko et al. 2006) with contradictory findings, particularly regarding students' certainty and confidence in fulfilling career aspirations. Beavis et al (2005) surveyed 3018 Australian senior secondary school students', in Years 10, 11 and 12 about their perceptions of work, finding that most students had plans for their future career, with approximately 30 percent of participants undecided. Analysis of participants' responses, revealed that while most had future career plans, 'the proportion of students aspiring to higher level jobs is higher than the proportion of jobs in the market, while the proportion of students aspiring to lower level jobs is lower than the proportion of these jobs in the labor market (2005:6).

Walker (2006) interviewed 339 secondary high school students, of various socio-economic backgrounds, from nine Australian schools in NSW, Queensland and Western Australia. Walker's research explored 'five areas of interest: education and career decision-making process; career advisers and career information services; vocational education and training in schools; traditional trades as a career; and teaching as a career' (2006:55). Secondary high school students' career aspirations were determined by various influences, however, similar to findings of Beavis et al. (2005), Walker's analysis of students' career plans revealed that students' plans did not match those available. Walker (2006) concluded that secondary school students' aspirations were ill-informed, and reflected a lack of knowledge of vocational options, acknowledging that 'further critical exploration' of career knowledge and choice is needed (see also Lairio and Penttinen 2006).

2.2.7 Choice of Geography as a career

Few academic studies were found that examined factors influencing students to pursue a Geography based career. Although, research was available that considered the 'employability' of Geography graduates, (reviewed above), few researchers have assessed influences on choice such as personal factors or career counselling, or considered the difficulties faced by students in choosing to study Geography at the tertiary level and seek a geographical vocation.

Cranby conducted research in 1995, in which 200 first year university Geography students at Monash University were asked why they chose to study university geography. Of the 200 participants who were able to specify more than one reason, 117 gave reasons relating to interest compared to only 20 who stated reasons relating to career (Cranby 2001). Similarly, Gedye et al. (2004) surveyed Geography undergraduates and graduates from the University of Plymouth. Despite the fact that 84 percent and 74 percent (respectively) of undergraduate and graduates listed job/career prospects as one of the two main reasons that they had chosen to study at university, only 58 percent and 29 percent of undergraduate students and graduates (respectively) chose to study Geography because of career options, and 8 percent and 11 percent (respectively), because they had a career path in mind directly related to Geography. When asked about the factors influencing their

decision to study Geography at the university level, 94 percent of undergraduate students and 95 percent of graduates selected the reason ‘enjoyed/did well at Geography at school’ (Gedye et al, 2004:386). While this literature is useful by comparison, it focused on the subject selection choices of students entering the university system, not at the high school level. In a sense, this may be ‘too late’ in the process to effectively understand how students map pathways to geography. For this reason, this thesis concentrates on perceptions of Geography as a vocation at the high school level.

2.3 SCHOOL STUDENT SUBJECT SELECTION

Changes have occurred to the post-compulsory school student population in Australia. These changes are analysed here following which, past studies in the area of subject selection, and the relevance of subject selection in the post-compulsory school years will be considered. This section then analyses the factors known to influence student subject selection, including Geography.

2.3.1 Changes in post-compulsory schooling in Australia

The subjects available for choice by Australian senior secondary school students (Year 11 and 12, or the equivalent) have increased significantly throughout the past 40 years, and consequently, there have been changes in patterns of subject choices (Ainley et al. 1994; Hauesler & Kay 1997; Lamb & Ball 1998). The availability of more subjects, and a more diverse student population, have both contributed to the complexity of the processes involved when students select subjects to study in the post-compulsory years of high school.

Prior to the 1980s, the rate of Australian secondary students who continued past Year 10 was approximately 30 to 35 percent (Lamb & Ball, 1998) a rate considered low in relation to many comparable countries (Ainley et al. 1994). The rate of completion in Australia of post-compulsory schooling has since increased dramatically (Ainley & Sheret 1992). According to Hemmings (1996:13) ‘between 1967 and 1992 the retention rate in post-compulsory school years in Australia more than trebled’. By 1990, the Year 12 retention rate in Australia was 64 percent, increasing to over 75 percent by 1992 (Ainley et al. 1994;

Lamb & Ball 1998). Today, approximately 90 percent of students continue their schooling past Year 10, and over 80 percent of students complete the post-compulsory years of school in Australia (Alloway et al. 2004).

Increases in retention rates have resulted in not only an increase in the numbers of students completing school, but also significant changes within the nature of the school population, who are today more diverse in terms of their ethnic and linguistic background, socio-economic status, earlier academic achievement, parental educational attainment, and future study and occupational aspirations (Ainley et al. 1994; Lamb & Ball 1998). The Australian post-compulsory school population of the past comprised of students with previous academic success and university aspirations, and consequently, the curriculum offered was comprised primarily of the traditional academic subjects, which included Geography (Lamb & Ball 1998).

Changes in the school population have resulted in reforms in the curriculum, as to ensure an education that meets the needs, interests, abilities, motivations and aspirations of a diverse student group (Ainley et al. 1994; Hauesler & Kay 1997; Lamb & Ball 1998). These changes, 'have been designed for two purposes: to increase school retention rates and to provide a more appropriate curriculum for those students already committed to remain within the system' (Haeusler & Kay 1997:32). Consequently, post-compulsory students in Australia today have a more varied and diverse range of subject options to choose from (Ainley et al. 1994). Geography's declining numbers are possibly a result of this greater competition from other subjects.

2.3.2 Past studies

Ainley et al. (1994) provide an overview of literature researching trends in the area of subject choice since the early 20th century, identifying three main themes: gender differences in subject selection; mental structures using subject preferences as indicators; and subject preference and choice. Ainley et al. (1994) found that while early studies examined which subjects students liked, the studies that followed focussed less on selection of individual subjects, considering rather combinations of enrolled subjects, analysing the characteristics of students who studied different subject combinations

(Ainley et al. 1994; Lamb & Ball 1998). According to Ainley et al. (1994) much is known about subject preferences and choice, from both psychological and sociological perspectives, including that socio-economic status, ethnicity, gender, school size and type, ability, attitudes, beliefs and cognitive styles, have all been shown to be related to subject preference and choice. There is an abundance of research outlining where students go following their completion of high school, and the relationships between the subjects students study and post-school destinations (Ainley et al. 1994; Alloway et al. 2004), but again, there is an absence of analysis of the reasons influencing students in making subject choices.

2.3.3 Selection of Geography in the post-compulsory years

Haeusler and Kay (1997) identified an absence of research considering the reasons for students studying individual subjects, arguing there is limited empirical evidence explaining why students choose particular subjects. Those studies available indicate that differences exist in the reasons for studying different subjects, as well as between the reasons given by male and female students for selecting to study particular subjects (Elsworth & Harvey-Beavis 1995). Similarly, a number of geography-specific literature reviews have identified a lack of geography-specific student-centred research (Martin 1999; Williams 1999; Roberts 2002; Rutherford 2002; Hopwood 2004).

Although not a common subject in all states and territories in Australia in the compulsory school years (Years 7 to 10), Geography is available in all states and territories of Australia in the post-compulsory years. In Australia, subjects are divided into the following Key Learning Areas (KLAs); English, Mathematics, Society and Environment, Science, Arts, LOTE, Technology, and Health and Physical Education. These KLAs are further divided into 15 Subject Areas, within which individual subjects are located. Geography is located within the Society and Environment KLA, and the Humanities and Social Sciences Subject Area, along with History, Politics and Social Studies.

Recent statistics from the Australian Council for Educational Research (ACER 2005) state that approximately 70 percent of students participated in a subject from the Society and Environment KLA, and subjects from this KLA accounted for 20 percent of all subjects

studied by students in Year 12 in Australia. In 2001, the participation rate for Geography for Australian Year 12 students was approximately 12 percent (Fullarton et al 2003; ACER 2005), which has continued to decline (Ainley et al. 1994; Ballantyne 1996; Cranby 2001; Bliss 2006; IAG et al. 2006; Hamper & Kleeman 2007). According to ACER (2005)

participation in the humanities is more likely among females than males (by 20%), 40% more likely among students from the highest quarter of the achievement distribution in Year 9 than students in the bottom quarter, about 70% more likely among students from independent schools than students from government schools, and studied less among those from a language background other than English (ACER 2005:3).

A number of studies have focussed broadly on the reasons why students chose specific subjects (Elsworth & Harvey-Beavis 1995; Ballantyne 1996; Haeusler & Kay 1997). Haeusler and Kay's findings (1997) based on questionnaires completed by 1580 Year 11 students in NSW, investigated reasons why certain subjects were selected for study in the HSC. They found that reasons relating to further study and/or future careers aspirations, were the most significant reasons given for Mathematics and Science subjects, but were considered the least significant for students selecting subjects from the Society and Environment KLA. Rather, students who selected subjects from the Society and Environment KLA gave interest in the subject as being the most important reason.

ACER surveyed students in the post-compulsory school years in Australia as to their reasons for selecting to study subjects (Elsworth & Harvey-Beavis 1995). The 9,052 Year 12 students that participated gave over 50,000 reasons for selecting subjects (one per subject studied). The most frequently cited reasons were: 'the subject is one that I enjoy' (16 percent reasons); 'the subject was compulsory' (15 percent); 'the subject was relevant to the work I want to do' (14 percent); and 'the subject is one that I find interesting' (13 percent) (Elsworth & Harvey-Beavis 1995:22). However, for students who had selected a subject from the humanities and social sciences subject area, 'interest and enjoyment together equalled nearly half of all reasons given, whereas relevance to future work was

given in only 5% of instances'. Elsworth and Harvey-Beavis (1995) report that the reason 'is relevant to the work I want to do in the future' was given by 46.5 percent of the students for at least one subject, indicating that future career plans for students are an important factor influencing some subject selections in the post-compulsory school years.

Ballantyne (1996) conducted research specifically considering the reasons why 343 Year 11 high school students in Queensland were or were not studying geography. It revealed that for the 169 students studying geography, the three most common reasons for their selection were: personal interest (ranked as the main reason by 31% of students); perceived relevance of the subject for pursuing a future job/career (20%); and past achievement (11%). Of the 174 students who were not studying geography, the three most common reasons for not selecting to study Geography were: lack of personal interest (ranked as the main reason by 25% of students); perceived irrelevance of the subject for pursuing a future job/career (23%); and preference for other subjects (21%).

Hamper and Kleeman (2007) surveyed Geography teachers from 107 high schools in NSW about why they thought that the number of students selecting Geography was declining in NSW. Reasons given were: competition from career-oriented subjects (such as Business Studies) (selected as 'to a great extent' or 'considerable extent' by 84% of respondents); the nature of the content in the Stage 5 course (selected as 'to a great extent' or 'considerable extent' by 78% of respondents); and the view that Geography lacks vocational relevance (selected as 'to a great extent' or 'considerable extent' by 77% of respondents). While this study is also important for comparison, it did not ask students directly about their perceptions of Geography as a subject, and as a possible vocational option.

West (2003) surveyed 15 Year 12 Geography students in Queensland, and discussed the role of Geography. The research revealed that students understood Geography to be: widely misunderstood; an enabling subject; a form of general knowledge; and a means of interacting with the world.

In summary, although a wealth of literature exists on geographic education, there is less emphasis within this on students' perceptions of Geography as a career pathway subject. Similarly, although there have been some studies broadly examining factors behind student subject selections, and there are some studies of attitudes towards Geography amongst university level students, with only one exception from over a decade ago (Ballantyne 1996) none have drilled down specifically to analyse what high school students think about Geography and whether it is career-orientated. This thesis seeks to fill this gap.

CHAPTER 3: METHODOLOGY

3.1 INTRODUCTION

This chapter details the methodology adopted to answer the stated research questions and address the research aims. Section 3.2 describes the elements of the study design: the methodology employed; the advantages and disadvantages of the adopted methodology; the study area; the research process; participant details; and the sample. Section 3.3 explains the design of the survey used, including types of questions and survey length. Section 3.4 outlines the methods employed to analyse the information gathered and 3.5 details the ethical considerations in designing the study and the research instrument.

3.2 STUDY DESIGN

3.2.1 Methodology

According to Patton (1990:165) quantitative methods ‘require the use of a standardized approach so the experiences of people are limited to certain predetermined categories’. Advantages include that it is possible to capture the views of many subjects with a limited set of questions, enabling comparison and statistical testing of the data. Sayer (1992) described quantitative or extensive methodologies, as those allowing for the identification of patterns and distinguishing features of a population, detailing how these are often revealed when a sample is used that has been selected using a random procedure. Random procedures for selecting a sample maximise the chance that generalisations of the larger population from which it is drawn are accurate. Accordingly, these methods are designed to determine relations of similarity and difference among members of a population.

A questionnaire based, quantitative methodology was considered most suitable to serve the purpose of this thesis, allowing for the collection of data to answer the research questions, and for comparisons of different variables and characteristics. Questionnaires are

highly structured and provide a straightforward way of obtaining information, and characterised by a structured or systematic set of data. This means ... that we collect information about the same variables or characteristics from at least two (normally far more) cases (De Vaus 2002:3-4).

Furthermore, this methodology allows for some informed generalisations to be made, one of the fundamental goals of research (De Vaus 2002). The issue of reliability is also addressed, as differences in the way that questions are asked/presented are eliminated (Hall & Hall 1996).

‘Self-completion within a group’ (Hall & Hall 1996) for students was determined to be most suitable for gathering data, as the research involved a population from a particular organization (at school), who were already gathered together for purposes other than to complete a questionnaire (Hall & Hall 1996). Questionnaires were distributed to, and completed by Year 10 and 11 students in class time. It was intended that the researcher would be present whilst students were completing surveys. However, in general, school principals did not consider this appropriate or efficient, as it was not possible for the researcher to be in more than one class at any time, and was consequently considered to be highly disruptive to teachers and students. Rather, surveys were given to the school principal by the researcher, and distributed to classroom teachers by the principal, to be completed in class time. Completed surveys were returned to the school principal and collected by the researcher.

‘Self-completion’ was considered to be appropriate for teacher participants as it would have been difficult to get all teachers together to complete the questionnaire. Although it was expected that this approach would have a lower response rate than the methodology used with student participants (often less than 50 percent, Lounsbury & Aldrich 1986) it

was considered more appropriate due to teachers' daily employment schedule. Questionnaires were distributed to teachers by the school principal and collected by school principal once completed, and collected by the researcher when collecting the student surveys.

According to methodological literature, this approach has a number of advantages including respect for participant anonymity and a higher than average response rate through researcher control of the situation (Lounsbury & Aldrich 1986; Hall & Hall 1996). However, because the researcher was not able to be present, it was possible that less usable data was collected, through misunderstandings, as the researcher could not clarify uncertainties of the participants in situ. As with all questionnaires, other disadvantages included: not being able to obtain rich qualitative data in narrative form; and the possibility that participants are able to, and do 'look ahead, disrupting any orderly sequence of questions that might exist, and that they can compare their responses with others' (Lounsbury & Aldrich 1986:94).

3.2.2 Study area

In order to answer the research questions, secondary students and teachers from secondary schools in the Illawarra and South Coast region of NSW, were surveyed. The NSW DET divides the state into 10 regions (Figure 3.1).

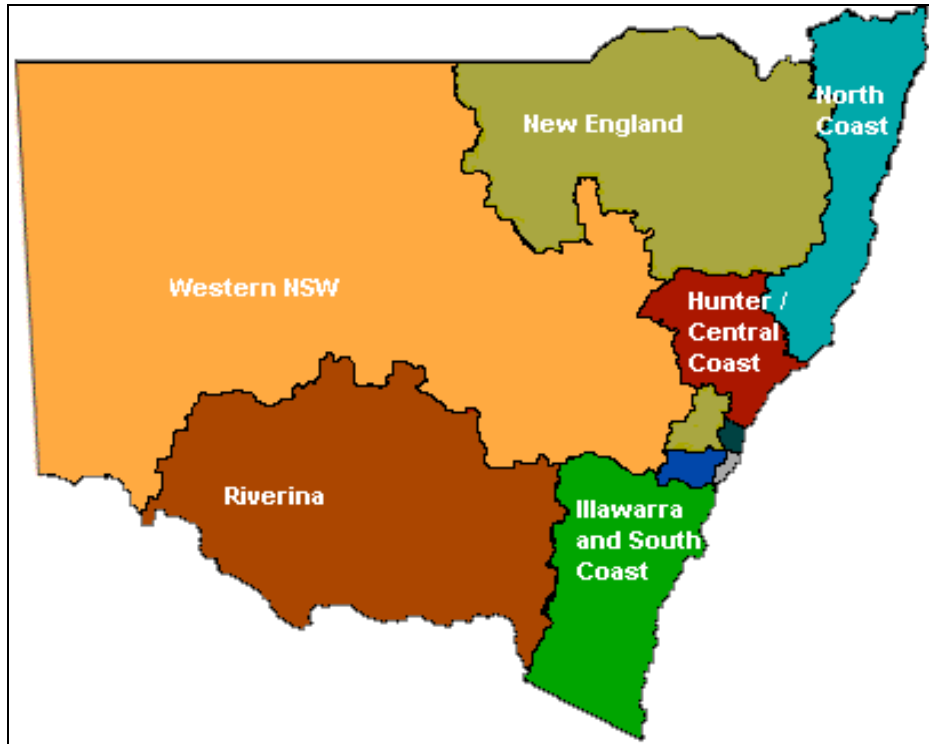


Figure 3.1:Regions of NSW

Source:NSW DET (2007a)

The Illawarra and South Coast Region of NSW occupies the region from Wollongong in the north, to Eden in the south. The region (Figure 3.2) consists of eight school communities, containing 35 public high schools (Yrs 7–12), four public central schools (Yrs K–12) and 1 public senior college (Yrs 11-12). Due to time and accessibility restrictions, only schools located in the NSW DET communities of Wollongong North, Wollongong, Shellharbour, Shoalhaven and Batemans Bay were included in the study area. These districts include 29 public high schools, one public central school and one public senior college, of which all are co-educational. To simplify the study further, Catholic and Independent high schools were excluded from this study, meaning that a doubling-up of complicated ethics approval processes was avoided. The sample was consequently generated only from public schools.

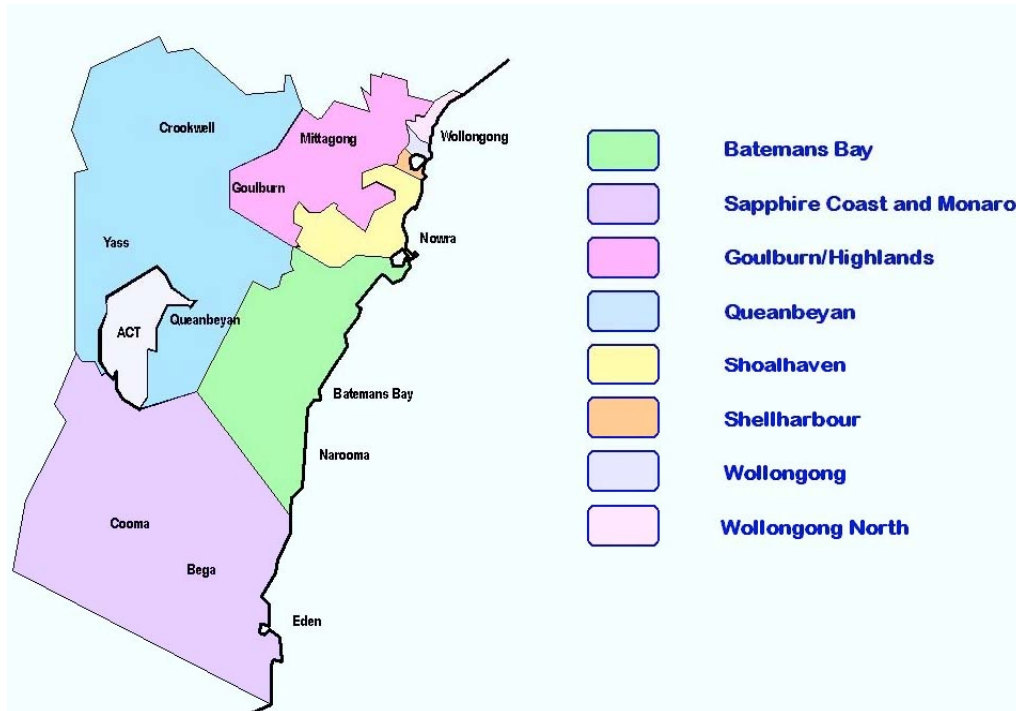


Figure 3.2: Districts of the Illawarra and South Coast region of the NSW DET
Source: NSW DET (2007b)

These five areas of the Illawarra and South Coast region of NSW were selected because they are socially, economically, and culturally diverse, and while being small enough to manage in the time period of an honours thesis, the combined areas were large enough in terms of number of schools and student population to capture meaningful levels of responses.

According to Lounsbury and Aldrich (1986:101) all geographic fieldwork is ‘spatially orientated’, therefore, it is essential that sampling is spatial in its design and that all components of the research area be considered in the development of a sampling design. Using Simple Random Sampling, 22 NSW DET secondary schools were selected, and invited to participate in the research. Simple Random Sampling is ‘based on the use of chance in selection’ (Hall & Hall 1996:109), and therefore those in the population have the same chance of selection. In accordance with this approach, a list of all schools that could be selected (the sampling frame) was formed, and a table of random numbers generated to select a sample.

3.2.3 Research process

Throughout October and early November 2007, 22 of the 31 schools in the selected areas were invited to participate in the research. Of the 22 schools that were contacted, the researcher spoke with the principals of 17, and left messages (never returned) on a number of occasions at the other five. Of the 17 schools in which the researcher spoke with the principals, four schools declined to participate. Participant consent forms were distributed to the principals of the remaining 13 participating schools by the researcher throughout November (Albion Park, Bombaderry, Corrimal, Dapto, Kanahooka, Kiama, Lake Illawarra, Moss Vale, Nowra, Oak Flats, Warilla, Warrawong, and Woonona).

Following discussions with the school principals, it was determined that Year 10 student participants would complete the research during their timetabled Geography classes (as all Year 10 students in NSW study Geography) and Year 11 student participants would complete the research during their timetabled English classes (as this is the only compulsory subject for students in Years 11 and 12 in NSW). The researcher consulted with both the Head teacher of Human Society and Its Environment (HSIE), the faculty in which Geography is located, and the Head teacher of English at each of the participating high schools to instruct them about distribution of the consent forms and surveys. Overall, 1920 Year 10 consent forms, 1370 Year 11, and 850 teacher consent forms were delivered to the 13 schools.

Of the 13 schools that consented to participate in the research and to which consent forms were distributed, many (Albion Park, Bombaderry, Corrimal, Dapto, Kanahooka, Kiama, Warilla, Warrawong, and Woonona) found that they were unable to get a sufficient number of students to return the completed consent forms, and subsequently chose to withdraw from the research. Table 3.1 provides details of the contact made with schools and their responses.

Table 3.1: Schools in the Illawarra and South East Region and a History of Participation in the Project

School	Area of Illawarra and South East Region	School contacted during research	Response
Albion Park	Shellharbour/Shoalhaven	Contacted	Unable to get consent forms completed.
Batemans Bay	Batemans Bay	Not contacted	
Bega	Batemans Bay	Not contacted	
Bombaderry	Shellharbour/Shoalhaven	Contacted	Unable to get consent forms completed.
Bombala	Batemans Bay	Not contacted	
Bowral	Shellharbour/Shoalhaven	Contacted	Declined
Braidwood Cental	Batemans Bay	Not contacted	
Bulli	Wollongong/North Wollongong	Contacted	Unable to speak with principal, message left, unreturned.
Corrimal	Wollongong/North Wollongong	Contacted	Unable to get consent forms completed.
Dapto	Wollongong/North Wollongong	Contacted	Unable to get consent forms completed.
Eden Marine	Batemans Bay	Not contacted	
Figtree	Wollongong/North Wollongong	Contacted	Unable to speak with principal, message left, unreturned.
Illawarra Senior College	Wollongong/North Wollongong	Contacted	Unable to speak with principal, message left, unreturned.
Illawarra Sports	Wollongong/North Wollongong	Contacted	Unable to speak with principal, message left, unreturned.
Kanahooka	Wollongong/North Wollongong	Contacted	Unable to get consent forms completed.
Kiera (Technical)	Wollongong/North Wollongong	Contacted	Declined
Kiama	Shellharbour/Shoalhaven	Contacted	Unable to get consent forms completed.
Lake Illawarra	Shellharbour/Shoalhaven	Contacted	Participated in research.
Moruya	Batemans Bay	Not contacted	
Moss Vale	Shellharbour/Shoalhaven	Contacted	Participated in research.
Narooma	Batemans Bay	Not contacted	
Nowra	Shellharbour/Shoalhaven	Contacted	Participated in research.
Oak Flats	Shellharbour/Shoalhaven	Contacted	Participated in research.
Shoalhaven	Shellharbour/Shoalhaven	Contacted	Unable to speak with principal, message left, unreturned.
Smiths Hill	Wollongong/North Wollongong	Contacted	Declined
Ulladulla	Batemans Bay	Not contacted	
Vincentia	Batemans Bay	Not contacted	

School	Area of Illawarra and South East Region	School contacted during research	Response
Warilla	Shellharbour/Shoalhaven	Contacted	Unable to get consent forms completed.
Warrawong	Wollongong/North Wollongong	Contacted	Unable to get consent forms completed.
Wollongong Performing Arts	Wollongong/North Wollongong	Contacted	Declined
Woonona	Wollongong/North Wollongong	Contacted	Unable to get consent forms completed.

3.2.4 Participants

Four schools remained as participating institutions in this project: Lake Illawarra, Moss Vale, Nowra and Oak Flats. 330 Year 10, 460 Year 11 and 260 teacher consent forms were distributed to these schools. From these, 188 high school students, (73/188 or 39 percent in Year 10, and 115/188 or 61 percent in Year 11), and 21 high school teachers, participated. Overall response rates for this research were approximately 22 percent for Year 10 students, 25 percent for Year 11 students and 8 percent for teachers.

Year 10 and 11 students were considered to be the most relevant for participation, due to the important decision-making processes that these students undertake in terms of further study and career options. Likewise, teachers were considered relevant participants, in order to provide further knowledge about teacher understandings of Geography as a discipline, as well as allowing for an analysis of student knowledge and understanding in relation to that of teachers.

3.2.5 Sample

De Vaus (2002:70) states that ‘a sample is obtained by collecting information about only some members of the population’. In order to accurately choose a sample it is necessary that the population is adequately defined, following which a sampling frame, or a list of the population elements, can be obtained, and a sample selected. When a sample is being selected from a sampling frame, it should be representative of the population, meaning that it is one in which characteristics of the sample are the same as that of the population,

in terms of: gender; class; age; and race. For the purpose of this thesis, a population is defined as those individuals of interest (Hall & Hall 1996), Year 10 and 11 students, and their teachers in NSW, with the sample including students, and teachers from public schools from a number of areas within the Illawarra and South East region of NSW.

3.3 QUESTIONNAIRE DESIGN

Many of the survey questions (Appendix A, B and C) were adapted from prior studies (discussed in Chapter 2) to allow time series and interdisciplinary comparisons. These studies include the Australian Government's Study of Subject Choice in NSW (Ainley et al. 1990), and Subject Choice in Years 11 and 12 (Ainley et al. 1994), and the Federal Department of Education, Science and Training Report 'School Students Making Education and Career Decisions: Aspirations, Attitudes and Influences' (Alloway et al. 2004).

Participation in the research was voluntary. The questionnaires were anonymous and did not collect sensitive personal information. Both the subject of the proposed research, as well as the methodology and research tool were designed after consultation with a number of individuals working in the field of geographical education, at both the secondary and tertiary levels (Lance Goodwin, Nick Hutchinson, Cassey Norris and Martin Pluss) and a review of the literature revealed a significant research gap.

Most of the questions within the three questionnaires were closed, pre-coded or partially-open questions (Hall & Hall 1996:99). The questionnaires included yes/no questions, ranking scales, and checklists, as well as partially-open questions that offered a fixed set of choices with a final open choice of 'other' in which the participant could give an alternative answer (Neuman 2006).

Mostly closed-response questions were used. As Lounsbury and Aldrich (1986) argue, they are straightforward and less time consuming for the researcher to administer, quicker and less complicated for participants, and straightforward and less time consuming for the researcher to analyse collected data. Inherent disadvantages of closed-format questions are that they 'suggest ideas that the respondents may not otherwise have, respondents with no

opinion or no knowledge in the area will answer anyway, misinterpretation of a question can go unnoticed, and distinctions between respondents answers may be blurred' (Neuman 2006:87).

To compensate, some open-ended questions were used in both the student and teacher questionnaires. However, for the sake of brevity and clarity, most of those used in both the student and teacher questionnaire required only single word answers.

The length of the questionnaire was a major consideration. It was essential that the questionnaires were not too long, as student and teacher participants would not be willing to complete them, and the quality of the data would be compromised if participants lost concentration or grew bored while completing the questionnaires. Consequently questionnaires were designed to take no longer than 15 to 20 minutes.

Due to the time involved in the ethics process needed to gain approval to conduct research within schools, it was considered that a formal piloting process would be too time consuming, in the limited time frame of an honours thesis. However, people known to the researcher through personal relationships (both high school-aged students and adults) agreed to pre-test the questionnaire quickly in order to ensure that the questions were understandable and to determine the approximate time needed for completion.

Data gathered from the final set of completed questionnaires was coded and interpreted in Microsoft Excel, with participant responses in the survey analysed to explain differences, in terms of variables, such as student grade level and student sex.

3.4 ETHICAL CONSIDERATIONS

All research conducted within Australian Universities must comply with ethical guidelines (Dowling 2000). According to De Vaus (2002) these guidelines generally serve to ensure five ethical responsibilities towards participants: voluntary participation, informed consent, no harm, confidentiality and anonymity, and privacy.

The study and questionnaire design also needed to be in line with the guidelines stipulated by the NSW DET Research Approval Process, that includes: child protection and duty of care (sensitivity, minimisation of risk or harm, child protection); benefit to public education; level of disruption; value to field of educational research; quality of research design; informed consent and anonymity and confidentiality. Furthermore, because the research involved school students and was conducted within the school environment, the methodology design needed to involve consent from individual school principals and classroom teachers, as well as from teacher participants, each student's parents/guardians, and the students themselves. These considerations affected the time required to conduct the research, and the number of schools agreeing to participate in the research and the student participant response rates. It took approximately 2 months to gain the appropriate approvals, even though the questionnaire was comparatively uncomplicated, and the topic unproblematic. The low overall participation rate in this research can be at least partially explained by the complicated procedures required for ensuring compliance with ethical principles regarding approval and consent.

3.5 CONCLUSION

The methodology adopted for the purpose of this thesis was a quantitative, questionnaire-based method. This method, whereby high school students and teachers from schools located within the Illawarra and South East region of NSW completed short questionnaires, was considered the most appropriate in order to achieve the intentions of this thesis. Questionnaires allowed the researcher to collect information that described and explained the extent and nature of how high school students and teachers understand Geography as a vocation, and whether high school students' understandings of Geography as a vocation influences their selection of Geography as a subject in the senior years of schooling. The next chapter presents the findings of the questionnaires completed by student and teacher participants.

CHAPTER 4: RESULTS

This chapter initially describes the demographic characteristics of the student and teacher participants, and then discusses student decision-making broadly, in terms of both subjects and careers. The remainder of the chapter is organised into sections that closely match the research aims of the thesis, with Section 4.3 interpreting how students and teachers understand Geography as a vocation, in terms of knowledge of geography-based careers, and the nature of these jobs; and Section 4.4 considering whether students' understandings of Geography as a vocation influence their selection of Geography as a subject in the senior years of schooling.

4.1 DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

The participants of this research were 188 Year 10 and 11 high school students, and 21 teachers from 4 public high schools, in the South East and Illawarra region of NSW (Table 4.1).

Table 4.1: Research Participants

School	Year 10	Year 11	Teacher
Lake Illawarra	41	52	4
Moss Vale	0	26	8
Nowra	0	5	3
Oak Flats	32	32	6
Total	73	115	21

4.1.1 Student participants

39 percent (73/188) of student participants were Year 10, and 61 percent (115/188) were Year 11. The Year 10 respondents were from 2 schools: 56 percent (41/73) from Lake Illawarra, and 44 percent (32/73) from Oak Flats. The Year 11 respondents were from 4 schools: 45 percent (52/115) from Lake Illawarra, 23 percent (26/115) from Moss Vale, 4 percent (5/115) from Nowra and 28 percent (32/115) from Oak Flats.

Sex of student participants

86 percent (157/188) of students specified their sex, of which, 53 percent (83/157) were male and 47 percent (74/157) were female. Percentages were similar for Year 10 and 11 within this total sample (Table 4.2).

Table 4.2: Student Participants' Sex

Male		Female		Unspecified		Total	
Total Student Respondents							
83	44%	74	40%	31	16%	188	100%
Year 10							
33	45%	34	47%	6	8%	73	100%
Year 11							
50	43%	40	35%	25	22%	115	100%

Language background of student participants

79 percent (149/188) of students spoke English at home, 2 percent (3/188) spoke a language other than English at home, and 19 percent (36/188) did not answer the question (Table 4.3). Of the participants who answered the question, 98 percent (149/152) spoke English at home, a rate higher than that of Australia and the Illawarra region (for which 78 percent and 85 percent of residents spoke English at home in 2006 respectively: ABS 2006). There were some slight differences between the Year 10 and 11 respondents, however are accounted for when students who did not answer the question are excluded, (99 and 98 percent respectively).

Table 4.3: Language Spoken at Home by Student Participants

English		Language other than English		Unspecified		Total	
Total Student Respondents							
149	79%	3	2%	36	19%	188	100%
Year 10							
66	90%	1	2%	6	8%	73	100%
Year 11							
83	72%	2	2%	30	26%	115	100%

Country of birth of student participants

79 percent (149/188) of students were born in Australia, 6 percent (4/188) were born in a country other than Australia, and 15 percent (29/188) did not answer the question (Table 4.4). Of the students who answered the question, 94 percent were born in Australia, a rate higher than that of Australia, and the Illawarra region (78 percent and 76 percent respectively (ABS, 2006); these rates are closer to the average, however, when the rates for Australia and the Illawarra only include 15-24 year olds, which are 78 percent and 87 percent respectively). The slight differences between the Year 10 and 11 participants are accounted for when the students who did not answer the question are excluded, at 98 percent and 97 percent respectively.

Table 4.4: Student Participants' Country of Birth

Australia		Other		Unspecified		Total	
Total Student Respondents							
149	79%	4	6%	29	15%	188	100%
Year 10							
65	89%	2	3%	6	8%	73	100%
Year 11							
84	73%	2	2%	29	25%	115	100%

Parents' country of birth of student participants

47 percent (87/188) of students had both parents born in Australia, 21 percent (40/188) had one parent born in Australia, 12 percent (23/188) had both parents born in a country other than Australia, and 20 percent (38/188) did not answer the question (Table 4.5). Of the students who answered the question, 58 percent (87/150) had both parents born in Australia, 27 percent (40/150) had one parent born in Australia, and 15 percent (23/150) had both parents born in a country other than Australia. When the students' parents are considered separately, 71 percent (214/300) of parents were born in Australia, and 29 percent (86/300) were born in a country other than Australia, rates that are lower than that for Australia and the Illawarra region (78 percent and 76 percent of residents were born in Australia in 2006, respectively: ABS 2006).

Table 4.5: Student Participants' Parents' Country of Birth

Australia (both)		One parent born overseas		Both parents born overseas		Unspecified		Total	
Total Student Respondents									
87	47%	40	21%	23	12%	38	20%	188	100%
Year 10									
33	45%	20	27%	12	16%	8	12%	73	100%
Year 11									
54	47%	20	17%	11	10%	30	26%	115	100%

Student participants parent's occupation

Father's occupation was used as a measure of the socio-economic status of students, and was chosen over mother's occupation due to the expected higher levels of part-time and casual employment of women (a judgement based on national trends). The question was open-ended with resulting answers re-coded into five groups of occupational categories based on an amalgamation of the eight two-digit employment categories in the Australian and New Zealand Standard Classification of Occupation (Managers, Professionals, Technicians and Trades Workers, Community and Personal Service Workers, Clerical and Administrative Workers, Sales Workers, Machinery Operators and Drivers and Labourers: ABS 2005).

Only 59 percent (110/188) of students specified the occupation of their father. 30 percent of students had fathers employed as Managers and Professionals, 43 percent were Technicians, Trades Workers, Machinery Operators and Drivers, 10 percent were Community and Personal Service Workers, 9 percent were Clerical, Administrative and Sales Workers, and 8 percent were Labourers (Figure 4.1). Compared to the averages for Australia, NSW and the Illawarra region (Table 4.6), some of the percentages were similar to those for the Illawarra region, such as Technicians and Trades Workers, Clerical and Administrative Workers and Machinery Operators and Drivers, while the Illawarra student sample contained more Managers and Community and Personal Service Workers and fewer Professionals, Sales Workers and Labourers than expected.

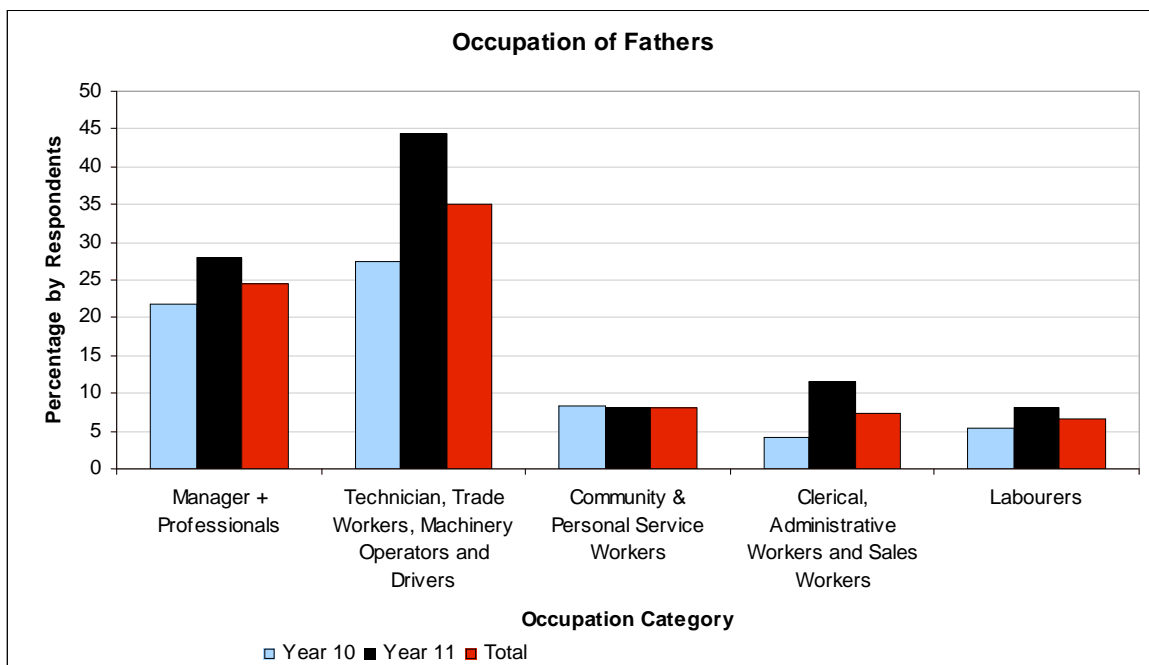


Figure 4.1: Occupation of Fathers

Table 4.6: Students' Fathers Occupation

Employment Category	Of Participants'	Illawarra *	NSW *	Australia *
Managers and Professionals	30%	29.8%	35.9%	34.1%
Technicians, Trade Workers, Machinery Operators and Drivers	43%	40%	33%	34.3%
Community and Personal Service Workers	10%	6.1%	5.4%	5.2%
Clerical, Administrative and Sales Workers	9%	11.5%	14.1%	13.7%
Labourers	8%	12.5%	11.7%	12.6%

* ABS 2006 (Occupation category: Males 15 and over).

In summary, the students were fairly evenly split in terms of sex, were generally Australian born, with at least one parent born in Australia, and speak English at home, with higher than average levels (for both Australia and the Illawarra region for each of these factors. Overall the socio-economic status of students' parents (as determined by father's occupation) was broadly representative of the wider Illawarra region – and thus, just as for the Illawarra region the sample was slightly more 'working class' than might be expected state-wide or nationally.

4.1.2 Teacher participants

21 teachers from four high schools participated in the research (Table 4.7). 38 percent of the respondents (8/21) were male, and 62 percent (13/21) female. According to the ABS 2006, 43 percent of secondary teachers in Australia are male, and 57 percent female. This figure is similar for NSW (44 percent male, 56 percent female: ABS 2006). In other words, female teachers were slightly over-represented in the sample – but not in any significant variation from state or national trends.

Table 4.7: Teacher Participants

School	Total Teachers		Male		Female		Unspecified	
Lake Illawarra	4	19%	1	25%	3	75%	0	0%
Moss Vale	8	38%	4	50%	4	50%	0	0%
Nowra	3	14%	1	33%	2	67%	0	0%
Oak Flats	6	29%	2	33%	4	67%	0	0%
Total	21	100%	8	38%	13	62%	0	0%

The age group with the most participants was the 51–64 year group (52 percent), followed by the 36–50 year group (43 percent) and the 20-35 year age groups (5 percent) (Table 4.8). These rates, which show an older population, are similar to the age distribution of teachers in Australia. (According to ABS data (2003) in 2001, 5 percent of teachers were aged 15–24 years, 22.7 percent were 25–34 years, 28.5 percent were 35–44 years, 33.3 percent were 45–54 years and 9.4 percent were aged over 55 years). 70 percent were classroom teachers; while the remaining 30 percent held executive positions (e.g. deputy principal) (Table 4.9). 43 percent of the teachers had been employed for 11-20 years, 22 percent for 31 years or over, 20 percent for 21-30 years and only 10 percent between 1 and 10 years (Table 4.12). The teacher cohort was thus overall a very experienced one.

Table 4.8: Teacher Participants' Age

Total Teachers		20-35		36-50		51-64		65+	
21	100%	1	5%	9	43%	11	52%	0	0%

Table 4.9: Teacher Participants' Position Held.

Total Teachers		Teacher		Head Teacher		Deputy Principal		Principal	
21	100%	15	70%	4	20%	1	5%	1	5%

Table 4.10: Teacher Participants' Length of Employment as a Teacher.

Total Teachers		Years as a Teacher									
		1-10		11-20		21-30		31+		Unspecified	
21	100%	2	10%	9	43%	4	20%	5	22%	1	5%

In NSW, subjects are organised into eight KLAs (Key Learning Areas); Creative Arts, English, Human Society and Its Environments (HSIE), Languages, Mathematics, Personal Development, Health and Physical Education (PD/H/PE), Science and Technology. The subjects that each of the teacher participants taught in 2007, organised into the KLAs are shown in Table 4.11. It is noted that most teachers taught more than one subject, and some in more than one KLA.

Table 4.11:KLAs and Subjects Taught by Teacher Participants

KLA	School				Total	
	Lake Illawarra	Moss Vale	Nowra	Oak Flats		
Creative Arts	3				3	14%
Visual Arts	3				3	14%
Visual Design	1				1	5%
Photography	1				1	5%
English		4	1	1	6	29%
English		3	1	1	5	24%
Drama		1			1	5%
Human Society and Its Environment	1	4	1	5	11	52%
Geography		2	1	2	5	24%
Economics		1	1	2	4	19%
Commerce			1	2	3	14%
Business Studies				1	1	5%
Legal Studies		1		1	2	10%
Society and Culture		2			2	10%
History	1	2		2	5	24%
Modern history	1				1	5%
Ancient history	1			1	1	5%
History extension	1				1	5%
Languages					0	0%
Mathematics		1		1	2	8%
Maths		1		1	2	10%
PD/H/PE					0	0%
Science		1	1		2	8%
Science		1			1	5%
Agriculture		1			1	5%
Technology					0	0%
No. of Respondents	4	10	3	7	21	100%

One teacher did not specify subjects only KLA (teacher 18)

One teacher is acting principal (teacher 8) only KLA specified

In summary, females are represented slightly more than males in the distribution of teacher participants. The majority of the teachers were older and highly experienced. The teachers came from a diverse range of Key Learning Areas (KLA), and taught a wide variety of subjects, however, those teaching HSIE subjects were over-represented.

4.2 STUDENT SUBJECT AND CAREER THINKING

In a broad manner (and not specific to geography) this section outlines the subjects studied by the student participants, and their reasons for selection, the subjects considered useful in getting a job, along with the reasons, and also outlines student decision-making regarding career selection. The data in this section provide context and comparison for the discussions of geographic-specific results in the later half of this chapter.

4.2.1 Subjects studied

Year 10 and 11 students were asked about their subject selection, and reasons for selecting to study subjects in their senior years of high school (in 2008 for Year 10 students, and in 2007 (at the time of the survey) for Year 11 students). 81 percent (153/188) of students answered the question. The 153 students selected 851 subjects, or 5.6 subjects per student respondent. 22 percent of these subjects were in the HSIE KLA, 18 percent in the English KLA, 16 percent in the Maths KLA, 10 percent in each the PD/H/PE, Science and TAFE KLAs, and 7 percent in each of the Technology and Creative Arts KLAs, with less than 1 percent selecting subjects from the LOTE KLA (Table 4.12). Significant differences existed between the Year 10 and 11 response rates (53 percent, and 99 percent respectively). Of the students who responded, the differences between the Year 10 and 11 students were minimal in terms of number of responses and the responses themselves. Only slight differences existed between the subjects studied by male and female students. Overall male students were more likely to choose subjects from the Technology KLA, and female students were more likely to study subjects from the PD/H/PE KLA. 14 students selected Geography, (9 percent of respondents or 0.02 percent of the total subjects selected), made up of 5 Year 10 and 9 Year 11 students, 5 of whom were male, 6 who were female, and 3 who did not specify their sex.

Table 4.12:Subjects Studied by Student Participants (% By Subject Selections)

KLA	Year 10	Year 11	Total
HSIE	26%	21%	22%
English	17%	19%	18%
Math	17%	16%	16%
PDHPE	9%	10%	10%
Science	16%	7%	10%
TAFE	7%	11%	10%
Technology	2%	9%	7%
Creative Arts	6%	7%	7%
Language	0%	< 1%	< 1%
Total Student Respondents	39	114	153
Total Subject Selections	218	633	851

Students were given a list of 19 pre-coded reasons for studying subjects. The students selected 1322 reasons for studying the 851 specified subjects, or 1.6 reasons per subject, with 51 selected subjects having no reason specified. The reasons selected most often are shown at the top of Table 4.13. They included ‘enjoyment’ (22 percent of reasons), ‘interest (17 percent of reasons) and ‘relevance to future work’ (12 percent of reasons). There were no significant differences between the responses of the Year 10 and 11 students, or between male and female respondents. However, male and female students gave different reasons for subjects from different KLAs.

The 14 students (14/153) who studied Geography selected 11 different reasons, 24 times. ‘Enjoyment’ (16%) and ‘relevance to work’ (13%) were the two most common reasons for selecting to study Geography, followed by ‘interest’ (8%), ‘marks/grades’ (8%) ‘University admission’ (8%), ‘could not do other subjects’ (8%) and ‘teachers’ (8%). No notable differences existed between the reasons given by the male and female students, although the numbers are limited, making comparisons difficult.

Table 4.13: Reasons for Selecting to Study Subjects (Percentage By Responses)

Reason	Year 10	Year 11	Total
Enjoyment	25%	22%	22
Interest	18%	17%	17
Relevance to future work	14%	12%	12
Necessary for future study	7%	5%	6
Subject is useful and practical	8%	7%	7
Marks	3%	5%	5
UAI	5%	4%	4
University admission	2%	4%	4
Parental advice	1%	2%	1
Teachers/career advisor advice	1%	0%	1
Friends	0%	2%	2
Could not do desired subjects	4%	2%	3
Compulsory	7%	8%	8
Part of recommended program of study.	0%	1%	1
Fulfilment of requirement to study subjects from given groups/KLAs	1%	1%	1
No readily stated reason	2%	2%	2
Like teacher	0%	3%	2
Teacher's reputation	0%	2%	1
Other	0%	0%	0
Number of Students Not Responding	40	11	51
Total Reasons Excluding No Response	241	1132	1373

4.2.2 Subjects perceived as useful in getting a job

Year 11 students were asked 'did you choose your school subjects with career options in mind?'. 86 percent (99/115) of Year 11 students responded to the question, with 81 percent (80/99) of these students responding 'yes' and 19 percent (19/99) responding 'no'. Female respondents had chosen their subjects with career options in mind at a higher rate than male respondents (84 percent, compared to 73 percent).

Student and teacher participants were asked what school subjects they considered useful in getting a job (Table 4.14), and the reasons why. 67 percent (141/209) of participants responded to the question, listing 52 different subjects, a total of 355 times, (approximately 2.5 responses by participant). The reasons given by the teachers and students were summarised into 12 primary reasons, with a total of 364 reasons given, and ‘no reason’ given 62 times (Table 4.15).

Table 4.14: Subjects Useful for Getting a Job (Percentage By Responses)

Subject	Year 10	Year 11	Teachers	Total
Math	69%	50%	32%	50%
English	77%	39%	68%	49%
Business Studies	16%	18%	11%	16%
Hospitality	12%	10%	26%	13%
PDHPE	0%	10%	21%	10%
Biology	8%	9%	0%	8%
Science	0%	5%	26%	7%
Information Processing & Technology	0%	9%	0%	6%
Legal Studies	4%	7%	5%	6%
Construction	0%	8%	5%	6%
Industrial Technology	0%	8%	0%	5.5%
Industrial Technology (Wood)	0%	7%	5%	5.5%
Visual Arts	0%	5%	11%	5%
Music	4%	4%	5%	4%
Chemistry	0%	5%	0%	3%
Community & Family Studies	0%	4%	5%	3%
Entertainment	0%	4%	5%	3%
Retail	0%	3%	11%	3%
Ancient History	4%	3%	0%	3%
Aboriginal Studies	0%	4%	0%	3%
Marine Studies	0%	4%	0%	3%
GENERAL TAFE (practical)	0%	1%	15%	3%
Computer Studies	0%	2%	11%	3%
Math (Extension)	0%	3%	0%	2%
Software Design	0%	3%	0%	2%
Economics	0%	2%	5%	2%
Geography	8%	0%	0%	1.5%

Subject	Year 10	Year 11	Teachers	Total
Metal/Woodworks	4%	1%	0%	1.5%
Agriculture	0%	2%	0%	1.5%
Design & Technology	0%	2%	0%	1.5%
Photography	0%	2%	0%	1.5%
Physics	0%	2%	0%	1.5%
Sport, Lifestyle & Recreation	0%	2%	0%	1.5%
Psychology	0%	1%	5%	1.5%
History	0%	0%	11%	1.5%
Automotive	4%	0%	0%	<1%
Metals and Engineering	4%	0%	0%	<1%
Animal Care	0%	1%	0%	<1%
Accounting	0%	1%	0%	<1%
Engineering Studies	0%	1%	0%	<1%
English (Extension)	0%	1%	0%	<1%
History (Extension)	0%	1%	0%	<1%
Industrial Technology	0%	1%	0%	<1%
Modern History	0%	1%	0%	<1%
Nursing	0%	1%	0%	<1%
Italian	0%	1%	0%	<1%
Primary Industries	0%	1%	0%	<1%
Society & Culture	0%	1%	0%	<1%
Textiles & Design	0%	1%	0%	<1%
Visual Design	0%	1%	0%	<1%
Commerce	0%	0%	5%	<1%
Business Services	0%	0%	5%	<1%
No Response	47	19	2	68
Total Respondents	26	96	19	141
Total Responses	55	249	51	355

Table 4.15: Reasons Subjects are Useful for Getting a Job

Reason	Year 10	Year 11	Teachers	Total
Direct Relation to Work	18%	38%	25%	28%
General Knowledge and Skills	13%	38%	27%	28%
Considered Essential	38%	8%	0%	8%
Communication Skills	15%	0%	17%	5%
Assist with University Entry/Good UAI	0%	7%	0%	4%
Obtain Certificate	0%	1%	11%	3 %
Creativity (Positive Trait)	0%	2%	3%	2%
Problem Solving (positive Trait)	8%	0%	6%	2%
Considered Helpful/ Generally Recommended	8%	1%	0%	1.5%
Experience	0%	2%	0%	1.5%
Perceived Academic Level	0%	1%	0%	1%
Extended Learning (Positive Trait)	0%	.5%	0%	<1%
Organizational Skills (positive Trait)	3%	0%	2%	<1%
No Reason			9%	17%
Total Reasons exc. 'No Reason'	40	209	64	364

90 percent (19/21) of teachers responded to the question, listing 21 different subjects, a total of 51 times, (approximately 2.7 responses by teacher). The subjects teachers considered most useful for getting a job were English, Maths, Science and Hospitality. The teachers gave 7 different reasons why particular subjects were useful in getting a job, a total of 64 times, with no reason given on 6 occasions. 'Direct relation to work', 'general knowledge and skills' and 'communication skills' were the reasons given most often by the teacher participants. Geography was not listed the by teacher participants as useful in getting a job.

65 percent (122/188) of students responded to the question, listing 49 different subjects, a total of 304 times, (approximately 2.5 responses by student). Significant differences existed between the Year 10 and 11 students' response rates (36 percent, and 83 percent respectively), with Year 11 respondents more likely to list more subjects per student than the Year 10 respondents (2.6, compared to 2.1). The subjects considered most useful for getting a job were Maths, English, Business Studies and Hospitality. No significant

differences existed between the subjects chosen by male and female students. Students gave 13 different reasons why subjects were useful in getting a job, 249 times, with no reason given 56 times. 'Direct relation to work', 'general knowledge and skills' and 'considered essential' were the most commonly cited reason. Only slight differences existed between the reasons given by male and female students.

Geography was stated twice as being a subject useful for getting a job, both times by Year 10 students, one who was male and one who was female. Both gave the reason 'general knowledge and skills'.

4.2.3 Career decision-making

Career decision-making: have you thought about a career?

Students were asked about their career decision-making. When asked 'have you thought about what career you are interested in?', 78 percent (147/188) of students answered the question. 88 percent (129/147) of the respondents had thought about what career they were interested in. Significant differences existed between the Year 10 and 11 response rates (53 percent, compared to 94 percent). However, the differences in actual responses of the Year 10 and 11 students were only slight. Also, no notable differences existed between the responses of the male and female students. However, Year 10 male respondents indicated that they had thought about what career they were interested in at higher rates (92 percent) than the Year 10 female respondents (78 percent), while no differences existed between the responses of the Year 11 male and female respondents.

Career decision-making: How much thinking have you done?

Students were asked how much thinking regarding career decision-making they had done. 71 percent (134/188) answered the question. Of these, 0.5 percent (1/134) had done 'no thinking' about their future career, 6.5 percent (9/134) 'a little bit of thinking', 27 percent (36/134) 'some thinking', 38 percent (51/134) 'quite a lot of thinking', and 28 percent (37/134) 'a lot of thinking' about their future career (Figure 4.2). Converting these responses to a numerical value, and excluding participants who responded 'don't know', the mean was found to be 3.9 (closest to 4 or quite a lot). Slight differences existed

between the Year 10 and 11 response rates (93 percent, compared to 87 percent, respectively). The responses of the Year 10 and 11 respondents were similar: Year 10 students responded that they had done some thinking about their future career less than Year 11 respondents (28 percent, compared to 47 percent) and that they had done quite a lot of thinking about their future career more than Year 11 respondents (49 percent compared to 35 percent). There were no major differences between the responses given by the male and female respondents.

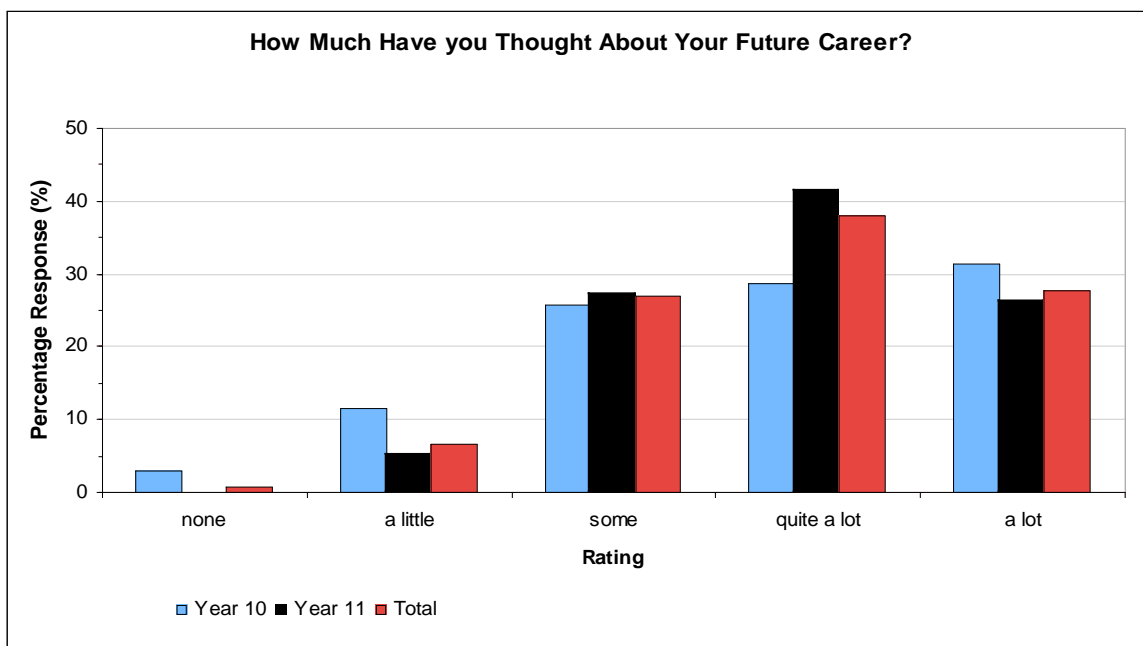


Figure 4.2: How much have you thought about your career?

Career decision-making: how well informed do you feel?

Students were asked how well informed they felt about the educational and career options available to them. 96 percent (170/188) students answered the question. Of these, 1 percent (2/170) did not feel well-informed, 7 percent (12/170) felt a little bit informed, 39 percent (67/170) felt somewhat informed, 41 percent (69/170) felt quite informed, and 12 percent (20/170) felt very informed about educational and career options (Figure 4.3). Converting these responses to a numerical value, and excluding those participants who responded ‘don’t know’, the mean was found to be 3.5 (between ‘somewhat’ and ‘quite informed’). Significant differences existed between the Year 10 and 11 students response rates (48 percent, compared to 86 percent). However, of the students who answered the

question, the differences between the Year 10 and 11 students were only slight, as were differences between the male and female students.

In general, students feel informed about the educational and career options available to them, with Year 10 students more likely than the Year 11 students to select ‘quite informed’. 90 percent of Year 10 respondents, and 93 percent of Year 11 respondents felt somewhat, quite or very informed about the educational and career options available to them, while 62 percent of Year 10 respondents, and 46 percent of the Year 11 respondents felt quite or very informed about the educational and career options available to them.

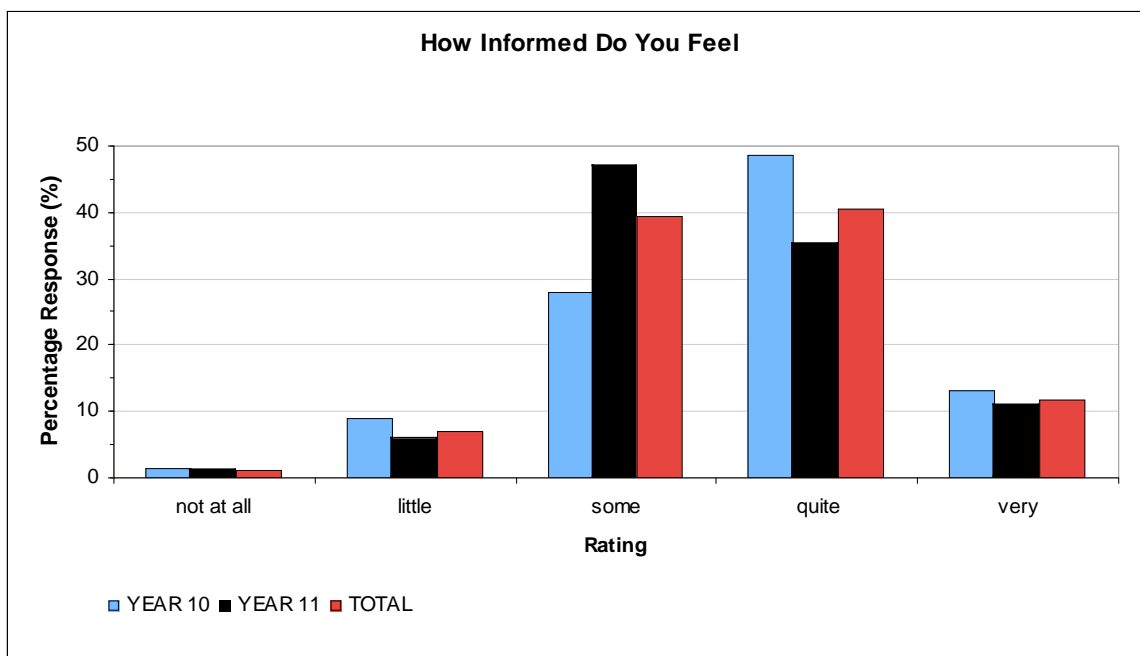


Figure 4.3:How Informed Do You Feel

Career decision-making: what career are you planning?

Students were asked ‘what kind of career are you planning for yourself?’. Their responses and response rates are shown in Table 4.16. 62 percent (116/188) of students responded to the question, giving 57 different responses, a total of 150 times, (approximately 1.3 responses by respondent). Significant differences existed between the Year 10 and 11 students’ response rates (45 percent, compared to 72 percent), with those Year 11 students who completed the question giving slightly more responses per student than the Year 10 respondents (1.3 compared to 1.1). Only slight differences exist between the actual

responses of the Year 10 and 11 students, and between the responses of the male and female students, with male students indicating at higher rates Technical and Trade careers, and female students indicating at higher rates Community and Personal Service careers.

Table 4.16: Students' Intended Employment (Percentage by Respondents)

Response	Year 10	Year 11	Total
Teacher	3%	17%	13%
Child Care	3%	10%	8%
Computers	0%	10%	7%
Medicine	12%	4%	6%
Nursing	12%	4%	6%
Engineer	6%	6%	6%
Trade	3%	6%	5%
Law	3%	6%	5%
Automotive Industry	9%	2%	4%
Hairdresser	9%	0%	3%
Photographer	6%	2%	3%
Journalism	6%	1%	3%
Army	3%	2%	3%
Music	3%	4%	3%
Sport	3%	4%	3%
Entertainment	0%	4%	3%
Architect	0%	4%	3%
Hospitality	0%	4%	3%
Personal Trainer	0%	4%	3%
Fashion Designer	6%	0%	2%
Chef	3%	1%	2%
Vet Nurse	0%	2%	2%
Draftsperson	0%	2%	2%
Beautician	0%	2%	2%
Accountant	0%	2%	2%
Customs	0%	2%	2%
Police	0%	2%	2%
Boilermaker	3%	0%	1%
Business	3%	0%	1%
Electrician	3%	0%	1%
Massage Therapist	3%	0%	1%

Response	Year 10	Year 11	Total
Agriculture	3%	0%	1%
Interior Designer	3%	0%	1%
Zoology	3%	0%	1%
Midwife	0%	1%	1%
Real Estate	0%	1%	1%
Coroner	0%	1%	1%
Financial Planner	0%	1%	1%
Airforce	0%	1%	1%
Flight Attendant	0%	1%	1%
Mortician	0%	1%	1%
Anatomist	0%	1%	1%
Retail	0%	1%	1%
Construction	0%	1%	1%
Film	0%	1%	1%
Counseling	0%	1%	1%
Psychology	0%	1%	1%
Youth Work	0%	1%	1%
Youth Hostel	0%	1%	1%
Graphic Designer	0%	1%	1%
Textiles	0%	1%	1%
Tattoo Artist	0%	1%	1%
Events Coordinator	0%	1%	1%
Landscaping	0%	1%	1%
Butcher	0%	1%	1%
OH&S	0%	1%	1%
Advertising	0%	1%	1%
No Response/Don't Know	55%	28%	38%
Total Respondents	33	83	116
Total Responses	38	112	

Table 4.17 gives details of the employment category of students' intended careers, classified into the Australian and New Zealand Standard Classification of Occupations (ANZSCO) (ABS 2005). Of the intended jobs listed by the students, 2 percent were managers, 72 percent were professionals, 22 percent were Technicians and Trades Workers, 32 percent were Community and Personal Service Workers, 2 percent were

Clerical and Administrative Workers, 2 percent were Sales Workers, 0 percent were Machinery Operators and Drivers, and 0 percent were Labourers, figures that differ significantly from the 2006 employment rates for the 8 areas specified by ANZSCO (ABS 2005).

Table 4.17: Students' Intended Employment (ANZSCO Categories) Percentage by Responses

	Yr. 10	Yr. 11	TOTAL	Illawarra *	NSW *	Australia *
Managers	0%	2%	2%	11.3%	14.9%	13.4%
Professionals	67%	75%	72%	19.2%	21.6%	20.2%
Technicians and Trade Workers	24%	20%	22%	17.0%	13.9 %	14.6%
Community and Personal Service Workers	24%	35%	32%	10.4%	8.7%	9.0%
Clerical and Administrative Workers	0%	2%	2%	14.0%	15.7%	15.2%
Sales Workers	0%	2%	2%	10.2%	9.9%	10.0%
Machinery Operators and Drivers	0%	0%	0%	7.6%	6.6%	6.8%
Labourers	0%	0%	0%	10.3%	9.7%	10.7%

* ABS 2005 (ANZSCO: Occupation category).

4.3 GEOGRAPHY AS A VOCATION

After discussing broad trends in student subject selection and thinking about careers in the first half of this chapter, I now address directly the first research question of this thesis: to what extent, and how, do high school students and teachers understand Geography as a vocation.

4.3.1 Different types of geographical careers

After answering broad questions in the survey about subject selection and careers, student and teacher participants were asked to list as many jobs as they were able that Geographers do. Responses and response rates are shown in Table 4.18. 51 percent (106/209) of participants responded to the question. This is a notable result in itself (see

Chapter 5.1.2). These 106 participants named 84 different jobs, a total of 367 times (3.5 per respondent). All 21 teachers answered the question, naming 32 different jobs, a total of 108 times (approximately 5.1 per teacher).

45 percent (85/188) of students responded to the question, giving 75 different responses, a total of 259 times (approximately 3.0 per respondent). Year 10 respondents had a lower response rate than Year 11 respondents (37 percent, compared to 50 percent). However the Year 10 students were able to name a greater range of careers per student (1.4 and 0.8 respectively), and had slightly more responses per student (3.1 and 3.0 respectively). Both these were lower than the teacher respondents. Of the respondents, who specified their sex, male students gave 124 responses (2.8 per respondent), and the female students gave 131 (3.4 per respondent).

The most commonly listed jobs, by both the student and teacher participants include Meteorologist/Weather Analyst, Teacher, Mapping/Cartographer/Computer Mapper, Town Planner, Scientist/Environmental Scientist, Environmental/Land Manager, Surveyor/Surveying, Weather Reporter, and Environmentalist/Environmental care.

When the question was answered (in 106/209), it seems that both students and teachers have a fairly comprehensive understanding of geographically based careers, as they are able to list a numerous and diverse range of occupations.

Table 4.18: Geographical Careers

Response	Year 10	Year 11	Teacher	Total
Meteorologist/Weather Analyst	52%	31%	48%	40%
Teacher	26%	36%	43%	36%
Mapping/ Cartographer/Computer Mapper	11%	31%	52%	30%
Town Planning	4%	9%	62%	18%
Scientist/Environmental Scientist	15%	16%	24%	17%
Environmental/Land Management	33%	2%	29%	15%
Surveyor/Surveying	4%	14%	29%	14%
Weather Reporter	7%	19%	5%	13%
Environmentalist/Environmental care	7%	14%	19%	13%
Demography/study population	0%	3%	33%	8%
Geologist	4%	14%	0%	8%
Park Ranger	11%	3%	10%	7%
Study Land	0%	12%	0%	7%
Study Environment	0%	7%	0%	4%
Study the World	0%	7%	0%	4%
Politics/Government	0%	0%	19%	4%
Resource Management	0%	0%	19%	4%
Water Management	0%	0%	19%	4%
Travel Agent	11%	2%	0%	4%
Conservationist	7%	2%	0%	3%
Hydrologist	7%	0%	5%	3%
Council Worker	4%	3%	0%	3%
Mining	4%	0%	10%	3%
National Parks	4%	0%	10%	3%
Paleontologist/Find fossils	4%	3%	0%	3%
Archaeologist	0%	5%	0%	3%
Study Plants	0%	5%	0%	3%
Testing/Researching Ecosystems	0%	5%	0%	3%
Researcher	0%	3%	5%	3%
Trade	7%	0%	0%	2%
Wildlife Ecologist	7%	0%	0%	2%
Cosmology	7%	0%	0%	2%
Documentaries	7%	0%	0%	2%
Greeny	7%	0%	0%	2%
Astronomy	7%	0%	0%	2%
Geographer	0%	3%	0%	2%
Green Peace	0%	3%	0%	2%
Hippy	0%	3%	0%	2%
Landscaper	0%	3%	0%	2%
Navigator	0%	3%	0%	2%
Plant Trees	0%	3%	0%	2%
Save Animals	0%	3%	0%	2%
Study Biodiversity	0%	3%	0%	2%

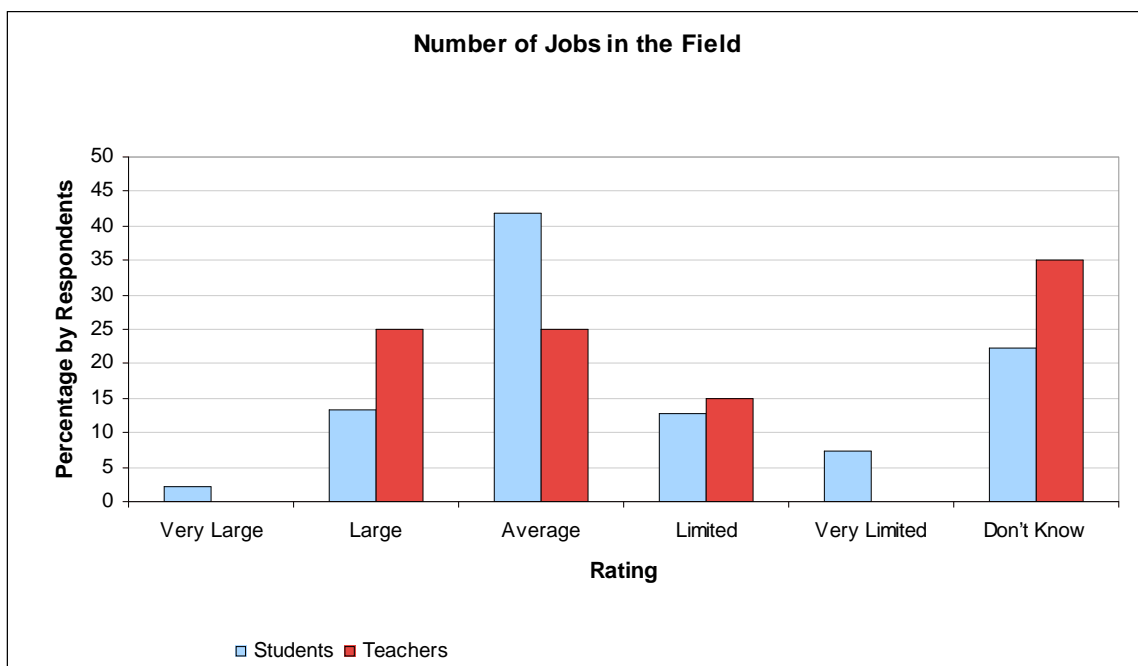
Response	Year 10	Year 11	Teacher	Total
Census Bureau Analyst	4%	0%	5%	2%
Anthropology	0%	0%	10%	2%
Commerce/Economics	0%	0%	10%	2%
Consultant	0%	0%	10%	2%
Biogeographer	4%	0%	0%	1%
Ecosystems	4%	0%	0%	1%
Ecotourism Planner	4%	0%	0%	1%
Explorer	4%	0%	0%	1%
Farming	4%	0%	0%	1%
Geospatial Analyst	4%	0%	0%	1%
Government	4%	0%	0%	1%
Hippy	4%	0%	0%	1%
Look at Hills	4%	0%	0%	1%
Market Researcher	4%	0%	0%	1%
Navigator	4%	0%	0%	1%
With Animals	4%	0%	0%	1%
Construction	0%	2%	0%	1%
Draftsman	0%	2%	0%	1%
Gardener	0%	2%	0%	1%
Gradients	0%	2%	0%	1%
Investigate	0%	2%	0%	1%
News	0%	2%	0%	1%
Observing	0%	2%	0%	1%
Politics	0%	2%	0%	1%
Pollution	0%	2%	0%	1%
Protest	0%	2%	0%	1%
Sampling	0%	2%	0%	1%
Sketching	0%	2%	0%	1%
Study Atmosphere	0%	2%	0%	1%
Study Corrosion	0%	2%	0%	1%
Studies Seas	0%	2%	0%	1%
Traveler	0%	2%	0%	1%
Armed Services	0%	0%	5%	1%
Climate Change Advocate	0%	0%	5%	1%
Foreign Affairs	0%	0%	5%	1%
GIS Analyst	0%	0%	5%	1%
Legal Studies	0%	0%	5%	1%
NGO's/Aid Organizations	0%	0%	5%	1%
RTA	0%	0%	5%	1%
Urban Renewal	0%	0%	5%	1%
Agronomy/Agriculture	0%	0%	5%	1%
Total	83	176	108	367
Respondents	27	58	21	106
No Response	46	57	0	103
Total Participants	73	115	21	209

4.3.2 Geographical careers

Student and teacher participants were asked to respond to questions about geographical careers in terms of a number of factors, including: the number of jobs in the field, how easy it is to get a job in the field, unemployment levels in the field, job satisfaction in the field, and the social status of jobs in the field. The following discussion of results is in relation to those teachers and students who responded to the questions.

Geographical careers: number of jobs in the field

74 percent (154/209) of teacher and student participants combined answered the question relating to the number of jobs in the field (Figure 4.4)



Year 10 Students (Participants/Respondents) - 73/54

Year 11 Students (Participants/Respondents) - 115/80

Teachers (Participants/Respondents) - 21/20

Figure 4.4: Number of Jobs in the field

95 percent (20/21) of teachers responded to the question. 65 percent (13/20) gave a response other than 'Don't Know'. Of these, 38 percent considered there to be a large/very large number of jobs in the field, 38 percent considered there to be an average number of jobs in the field, and 24 per cent considered available jobs limited/very limited.

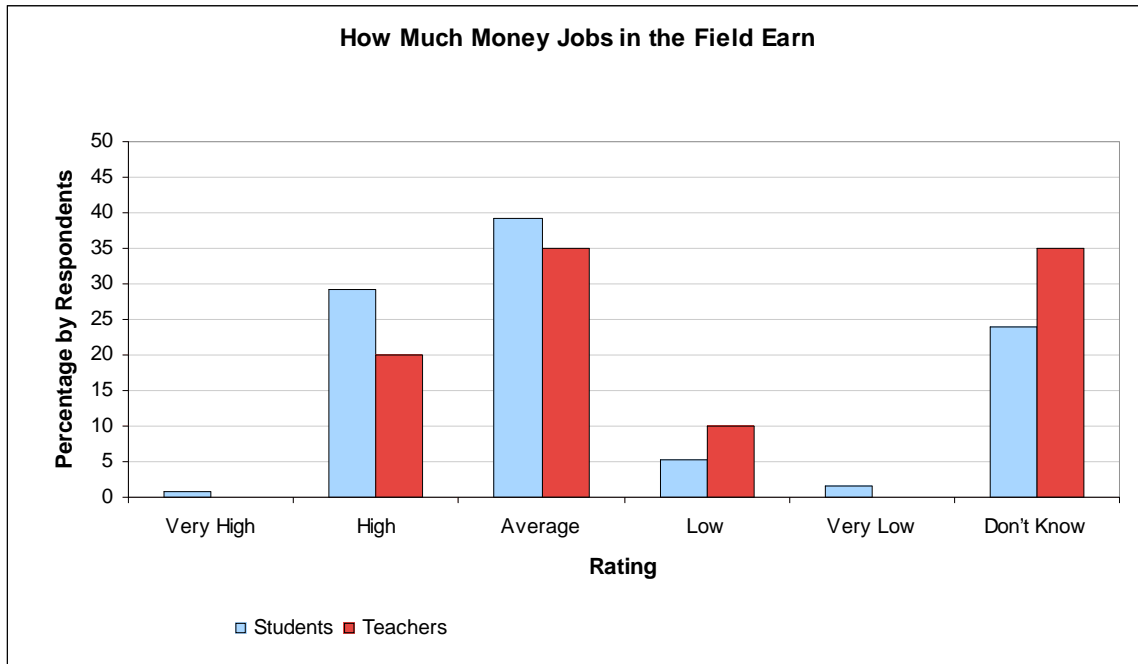
Converting these responses to a numerical value, and excluding responses of ‘Don’t Know’ the mean was found to be 4.2 (closest to 4 or ‘average’), as indicated in Figure 4.4.

71 percent (134/188) of students responded to the same question. 78 percent (104/134) gave a response other than ‘Don’t Know’. Of these, 20 percent considered there to be a large/very large number of jobs in the field, 54 percent considered job availability to be average, and 26 percent considered jobs limited/very limited. Converting these responses to a numerical value, and excluding responses of ‘Don’t Know’ the mean was found to be 3.9 (closest to 4 or ‘average’). This middling of student responses is illustrated clearly in Figure 4.4. There were only very slight differences between the Year 10 and 11 respondents in terms of both response rates and the spread of actual responses. Overall, the male respondents were fairly evenly split between considering the number of jobs in the field to be limited/very limited, average and large/very large, while the majority of female respondents considered the number of jobs in the field to be average (71 percent). Only slight differences existed between the Year 10 and 11 male and female respondents.

In general terms the results reveal that the number of jobs available in the geographical field was considered to be average or large/very large by more than 70 percent of the respondents (responding other than ‘Don’t Know’) across all participant groups.

Geographical careers: how much money can geographers earn

73 percent (153/209) of teacher and student participants answered the question relating to earnings of jobs in the field (Figure 4.5)



Year 10 Students (Participants/Respondents) - 73/54

Year 11 Students (Participants/Respondents) - 115/79

Teachers (Participants/Respondents) - 21/20

Figure 4.5:How Much Money Jobs in The Field Earn

95 percent (20/21) of teachers responded to the question. 65 percent (13/20) gave a response other than ‘Don’t Know’. Of these, 31 percent considered the earnings of jobs in the field to be high/very high, 54 percent considered them average, and 15 per cent considered them low/very low. Converting these responses to a numerical value and excluding responses of ‘Don’t Know’, the mean was found to be 4.2 (closest to 4 or ‘average’), shown clearly in Figure 4.5.

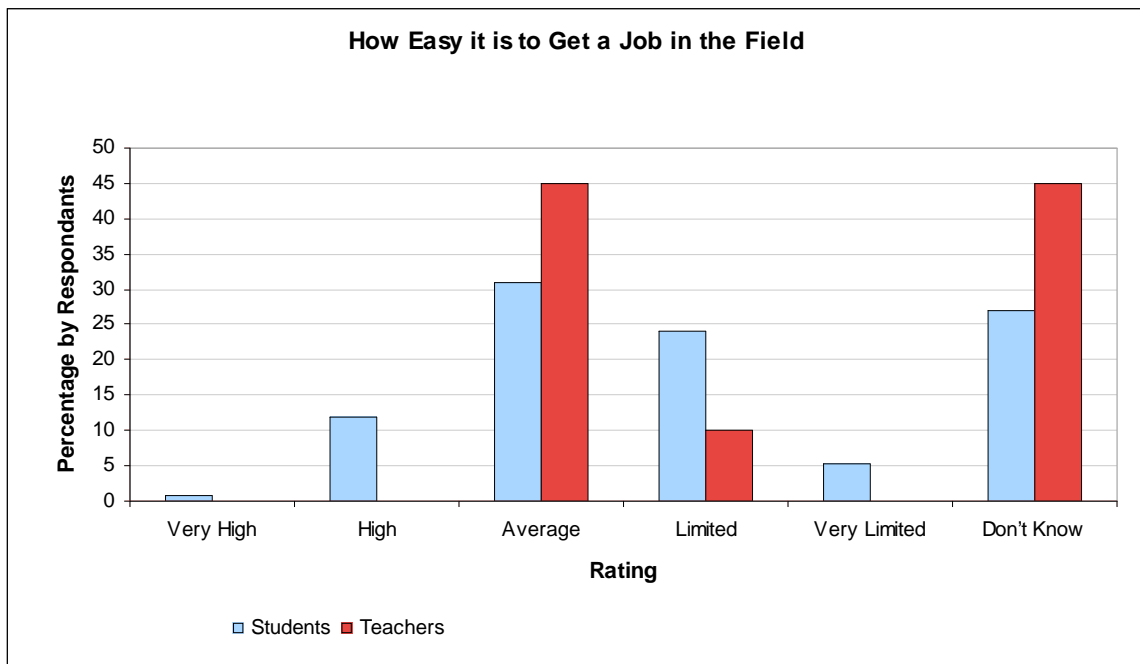
71 percent (133/188) of students responded to the question. 76 percent (101/133) gave a response other than ‘Don’t Know’. Of these, 40 percent considered the earnings of jobs in the field to be high/very high, 51 percent considered them average, and 9 percent considered them low/very low. Converting these responses to a numerical value and excluding responses of ‘Don’t Know’, the mean was found to be 4.3 (closest to 4 or ‘average’). Figure 4.5 highlights the ‘middling’ of student responses to this question. Only very slight differences existed between the Year 10 and 11 respondents in terms of both response rates and actual responses. Male respondents were evenly split in terms of considering the earnings of jobs in the field to be average and large/very large (43 percent

respectively), compared to only 12 percent considering the earnings to be low/very low, while the majority of female respondents considered the earnings to be average (62 percent) and large/very large (36 percent) with only 2 percent considering the earnings to be low/very low. Only slight differences existed between the Year 10 and 11 male and female respondents.

Overall the results to this question reveal that the earnings of jobs in the geographical field were considered to be average or high/very high by 85 percent or more of the respondents (responding other than ‘Don’t Know’) across all participant groups.

Geographical careers: how easy it is to get a job in the field

73 percent (153/209) of teacher and student participants answered the question relating to how easy it is to get a job in the field (Figure 4.6).



Year 10 Students (Participants/Respondents) - 73/54
Year 11 Students (Participants/Respondents) - 115/79
Teachers (Participants/Respondents) - 21/20

Figure 4.6:How easy it is to get a Job in the Field

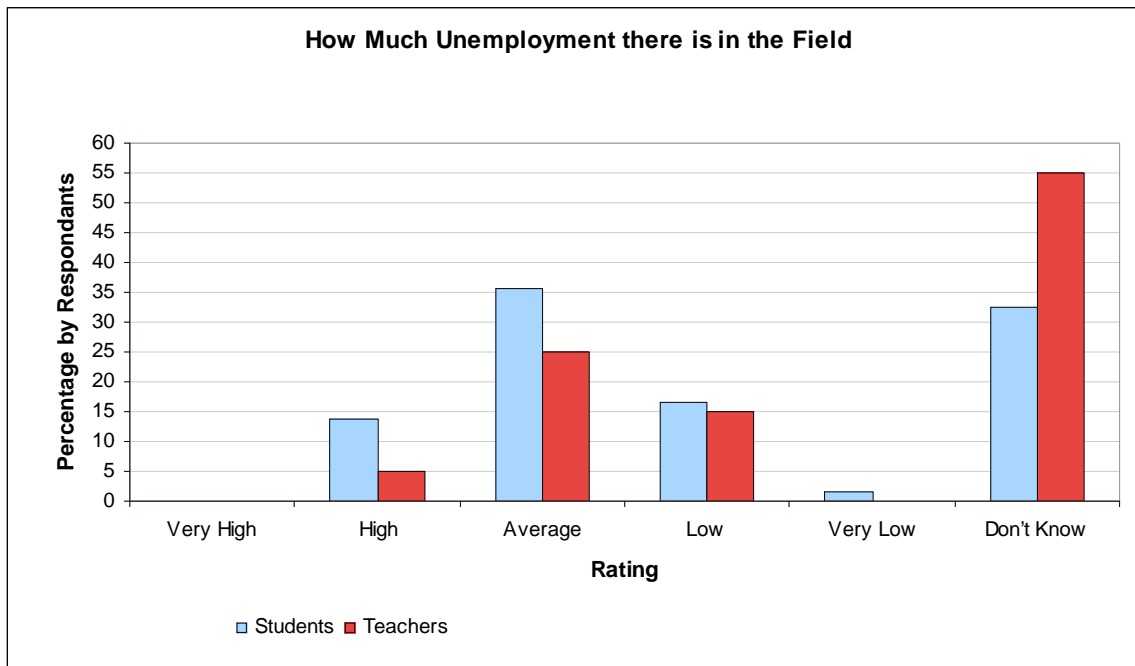
95 percent (20/21) of teachers responded to the question. 55 percent (11/20) gave a response other than 'Don't Know'. Of these, none responded that it was easy/very easy to get a job in the field, 82 percent considered it average, and 18 per cent considered it hard/very hard. Converting these responses to a numerical value and excluding responses of 'Don't Know', the mean was found to be 3.8 (closest to 4 or 'average') demonstrated in Figure 4.6.

71 percent (133/188) of students responded to the same question. 73 percent (97/133) gave a response other than 'Don't Know'. Of these, 18 percent considered it easy/very easy to get a job in the field, 42 percent considered it average, and 40 percent considered it hard/very hard. Converting these responses to a numerical value and excluding responses of 'Don't Know', the mean was found to be 3.7 (closest to 4 or 'average'), a trend shown in Figure 4.6. Only slight differences existed between the Year 10 and 11 respondents in terms of both response rates and actual responses. Overall some differences existed between the responses of the male and female respondents, however, these were not conclusive.

These results show that teachers believe that geographical jobs are more difficult to find than the students, who are split between those that think it is easy, average and difficult.

Geographical careers: how much unemployment is there in the field

73 percent (153/209) of teacher and student participants answered the question relating to unemployment levels in the field (Figure 4.7).



Year 10 Students (Participants/Respondents) - 73/52

Year 11 Students (Participants/Respondents) - 115/80

Teachers (Participants/Respondents) - 21/20

Figure 4.7:How Much Unemployment there is in the Field

95 percent (20/21) of teachers responded to the question. 45 percent (9/20) gave a response other than 'Don't Know'. Of these, only one teacher (11 percent) considered the unemployment levels in the field to be high/very high, 56 percent considered them average, and 33 percent considered them low/very low. Converting these responses to a numerical value and excluding responses of 'Don't Know', the mean was found to be 3.8 (closest to 4 or 'average'), as indicated in Figure 4.7.

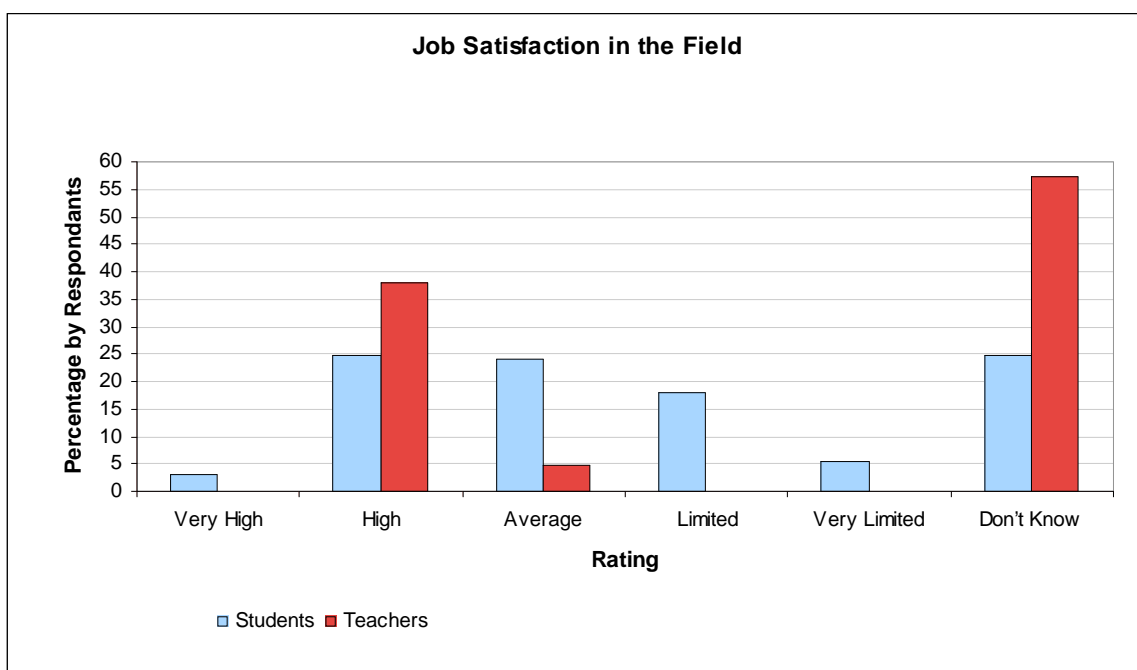
70 percent (132/188) of students responded to the same question. 67 percent (89/132) gave a response other than 'Don't Know'. Of these, 20 percent considered the unemployment levels in the field to be high/very high, 53 percent considered them average, and 27 percent considered them low/very low. Converting these responses to a numerical value and excluding responses of 'Don't Know', the mean was found to be 3.9 (closest to 4 or 'average'). This 'middling' of responses to this question is shown clearly in Figure 4.7. Only very slight differences existed between the Year 10 and 11 respondents in terms of response rates and rate selecting 'Don't Know'. However Year 11 respondents were more

likely to consider the unemployment levels in the field to be high/very high, and much less likely to consider the unemployment levels in the field low/very low.

These results reveal a ‘middling’ attitude towards levels of unemployment in geographical careers. Although unemployment levels in the geographical field was considered to be high/very high by only 25 percent or less of the respondents across all participant groups, only 20 percent of Year 11 respondents considered the levels of unemployment in the geographical field to be low/very low.

Geographical careers: satisfaction of jobs in the field

74 percent (154/209) teacher and student participants answered the question requiring that they rank geographical careers in terms of the satisfaction of jobs in the field (Figure 4.8).



Year 10 Students (Participants/Respondents) - 73/53

Year 11 Students (Participants/Respondents) - 115/80

Teachers (Participants/Respondents) - 21/21

Figure 4.8: Job Satisfaction in the Field

All of the teachers (21) responded to the question. 43 percent (9/21) gave a response other than ‘Don’t Know’. Of these all but one (89 percent) considered the satisfaction of jobs in

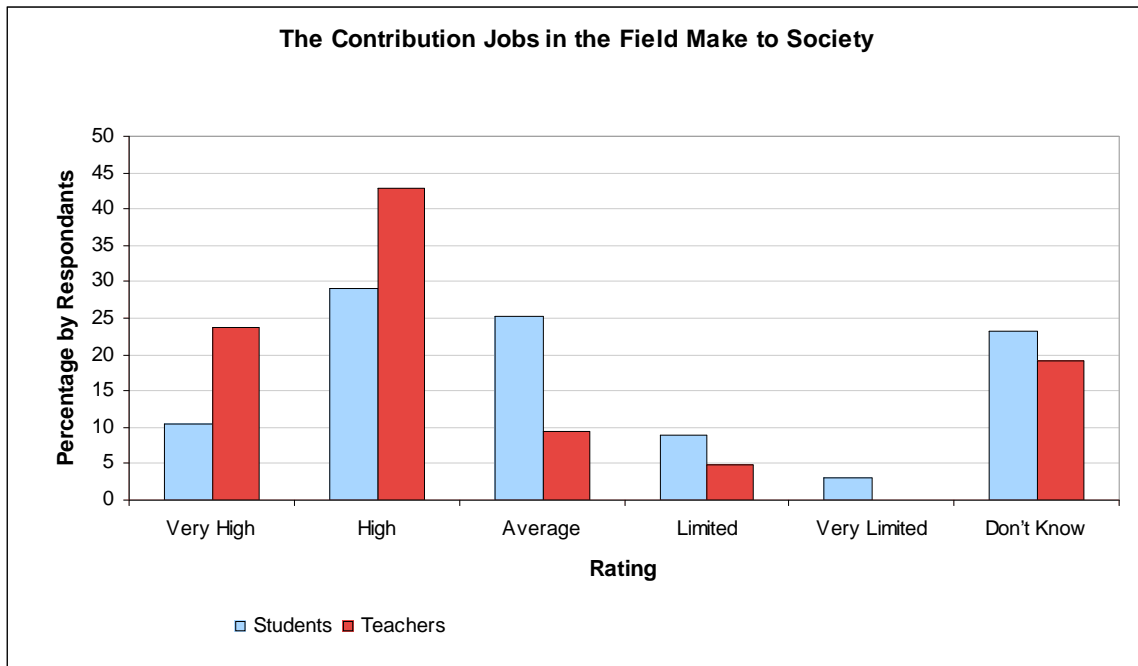
the field to be high/very high, with the other respondent considering it average. No one rated geographical careers as unsatisfying. Converting these responses to a numerical value and excluding responses of 'Don't Know', the mean was found to be 4.9 (closest to 5 or 'high'), shown clearly in Figure 4.8.

71 percent (134/188) of students responded to the same question. 77 percent (103/134) gave a response other than 'Don't Know'. Of these, 36 percent considered the satisfaction of jobs in the field to be high/very high, 31 percent considered it average, and 33 percent considered it low/very low. Converting these responses to a numerical value and excluding responses of 'Don't Know', the mean was found to be 3.9 (closest to 4 or 'average'). Only very slight differences existed between the Year 10 and 11 respondents, in terms of response rates and rate selecting 'Don't Know'. However Year 11 respondents were much more likely to consider the job satisfaction in the field to be high/very high, and much less likely to consider it low/very low, while the rates considering the job satisfaction to be average were relatively equal. No notable differences existed between the responses by the male and female respondents.

Overall these results reveal that perceptions of the satisfaction of jobs in the geographical field are not the same amongst teachers and students. Whereas Year 11 and teacher respondents considered the satisfaction of jobs on the geographical field to be average or high/very high, results were much more split for Year 10 respondents.

Geographical careers: contribution of jobs in the field to society

74 percent (155/209) teacher and student participants answered the question relating to the contribution of jobs in the field to society (Figure 4.9).



Year 10 Students (Participants/Respondents) - 73/54

Year 11 Students (Participants/Respondents) - 115/80

Teachers (Participants/Respondents) - 21/21

Figure 4.9: The Contribution that Jobs in the Field Make to Society

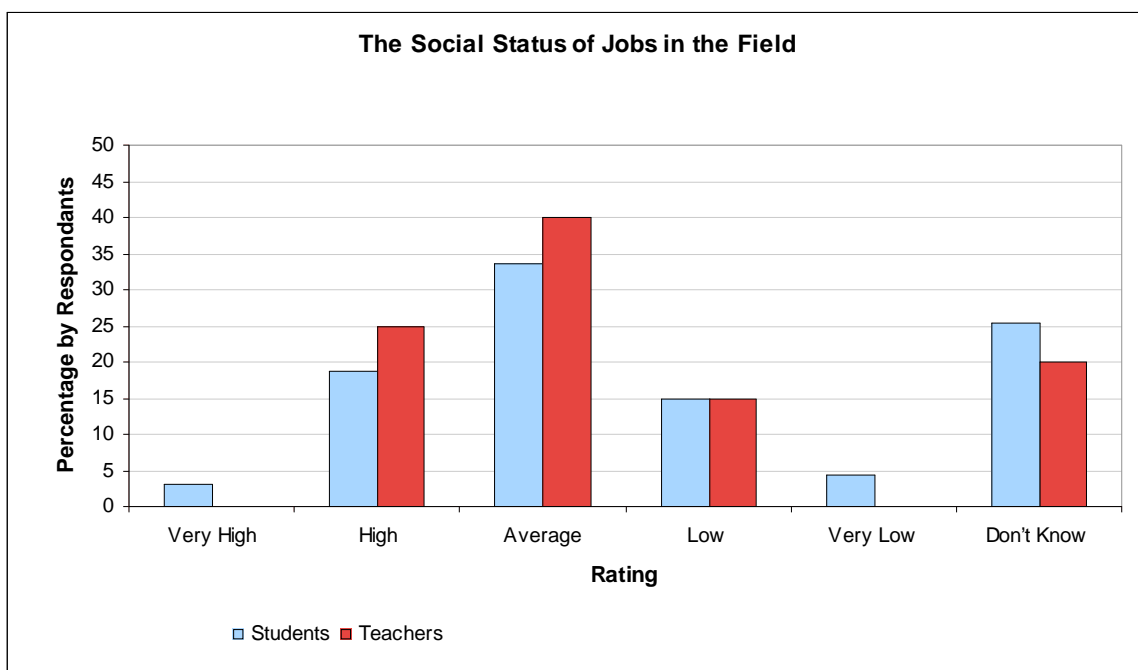
All 21 teachers responded to the survey question. 81 percent (17/21) gave a response other than 'Don't Know'. Of these, 82 percent considered the contribution of jobs in the field to be high/very high, 12 percent considered it average, and 6 percent considered it limited/very limited. Converting these responses to a numerical value and excluding responses of 'Don't Know', the mean was found to be 5.1 (closest to 5 or 'high'). This distribution of teacher responses is shown in Figure 4.9.

71 percent (134/188) of students responded to the same question. 77 percent (103/134) gave a response other than 'Don't Know'. Of these, 51 percent considered the contribution of jobs in the field to be high/very high, 33 percent considered it average, and 16 percent considered it limited/very limited. Converting these responses to a numerical value and excluding responses of 'Don't Know', the mean was found to be 4.5 (between 'average' and 'high') as illustrated in Figure 4.9. There were only very slight differences between the Year 10 and 11 students in terms of both response rates and actual responses, and no notable differences between the responses of the male and female students.

Overall these results reveal that the perceived contribution of jobs in the geographical field was considered to be average or high/very high by 77 percent or more of the respondents across all participant groups, with teachers generally more likely to rate geographical careers as contributing highly to society, compared to students – although student too thought geographers were making important contributions to society.

Geographical careers: social status of jobs in the field

74 percent (154/209) teacher and student participants answered the question relating to the social status of geographical careers (Figure 4.10).



Year 10 Students (Participants/Respondents) - 73/54
Year 11 Students (Participants/Respondents) - 115/80
Teachers (Participants/Respondents) - 21/20

Figure 4.10: The Social Status of Jobs in the Field

95 percent (20/21) of teachers responded to the question. 80 percent (16/20) gave a response other than ‘Don’t Know’. Of these, 31 percent considered the social status of jobs in the field to be high/very high, 50 percent considered it average, and 19 percent considered it limited/very limited. Converting these responses to a numerical value and excluding responses of ‘Don’t Know’, the mean was found to be 4.1 (closest to 4 or ‘average’), indicated in Figure 4.10.

71 percent (134/188) of students responded to the same question. 75 percent (100/134) gave a response other than 'Don't Know'. Of these, 29 percent considered the social status of jobs in the field to be high/very high, 45 percent considered it average, and 26 percent considered it limited/very limited. Converting these responses to a numerical value and excluding responses of 'Don't Know', the mean was found to be 4.0 ('average'). This 'middling' of student responses is demonstrated in Figure 4.10. There were only very slight differences between the Year 10 and 11 respondents in terms of both response rates and actual responses, and no notable differences existed between the male and female respondents.

Overall these results reveal that the social status of jobs in the geographical field was considered to be low/very low by 35 percent or less of the respondents (responding other than 'Don't Know') across all participant groups. Most felt that geographical careers were of average social status, although notably more did perceive geographical careers as high status than low status.

4.3.3 Descriptions of Geography

Student participants were asked in separate survey questions to rank Geography in terms of whether they considered Geography to be; irrelevant or relevant and non-vocational or vocational – on sliding scales from 1 to 10.

Geography: relevant or irrelevant?

73 percent (138/188) of students responded to the question relating to the relevance of Geography (Figure 4.11). On a 10 point scale, with 1 being irrelevant and 10 being relevant, Geography was considered to be irrelevant (ranked between 1 and 4) by 36 percent of respondents (49/138), 28 percent of respondents (40/138) considered Geography to be neutral (ranked 5 and 6), and 36 percent of respondents (49/138) considered Geography to be relevant (ranked between 7 and 10), giving a mean of 5.5 for the student respondents.

There were only slight differences between the Year 10 and 11 students in terms of response rates and the actual responses, although Geography was less likely to be considered relevant (ranked between 7 and 10) by Year 10 students (30 percent), compared to Year 11 students (39 percent). There were also some slight differences between the responses of the male and female respondents, with males considering Geography to be both irrelevant and relevant at higher rates than the female students (who were slightly more likely to rate Geography as neutral).

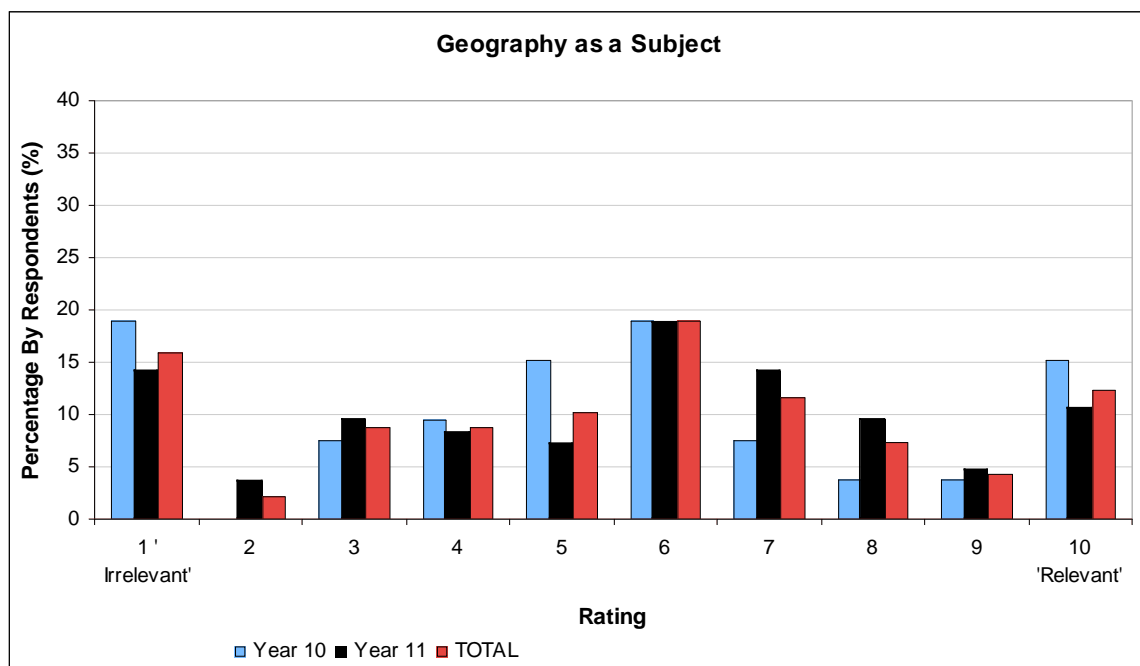


Figure 4.11:Relevance of Geography as a Subject

Despite this mean, the majority of student responses were split into three groups; those that considered it neutral, those that considered it irrelevant (1) and those who considered it relevant (10), as shown in Figure 4.11.

Geography: vocational or non-vocational?

71 percent (134/188) of students responded to the question relating to the vocational opportunities generated by studying Geography (Figure 4.12). On a 10 point scale, with 1 being non-vocational and 10 being vocational, Geography was considered to be non-vocational (ranked between 1 and 4) by 35 percent of the respondents (47/134), 44 percent of the respondents (59/134) considered Geography to be neutral (ranked 5 and 6), and 21

percent of the respondents (31/134) considered Geography to be vocational (ranked between 7 and 10), giving a mean of 4.9 for the respondents.

When the above results were cross-tabbed by student’s sex, there were no notable differences between male and female students. There were only very slight differences between the Year 10 and 11 respondents in terms of the response rates for the question. However, Year 10 respondents did consider Geography to be vocational (27 percent) at higher rates than the Year 11 respondents (17 percent), and not vocational (28 percent) at lower rates than the Year 11 respondents (40 percent).

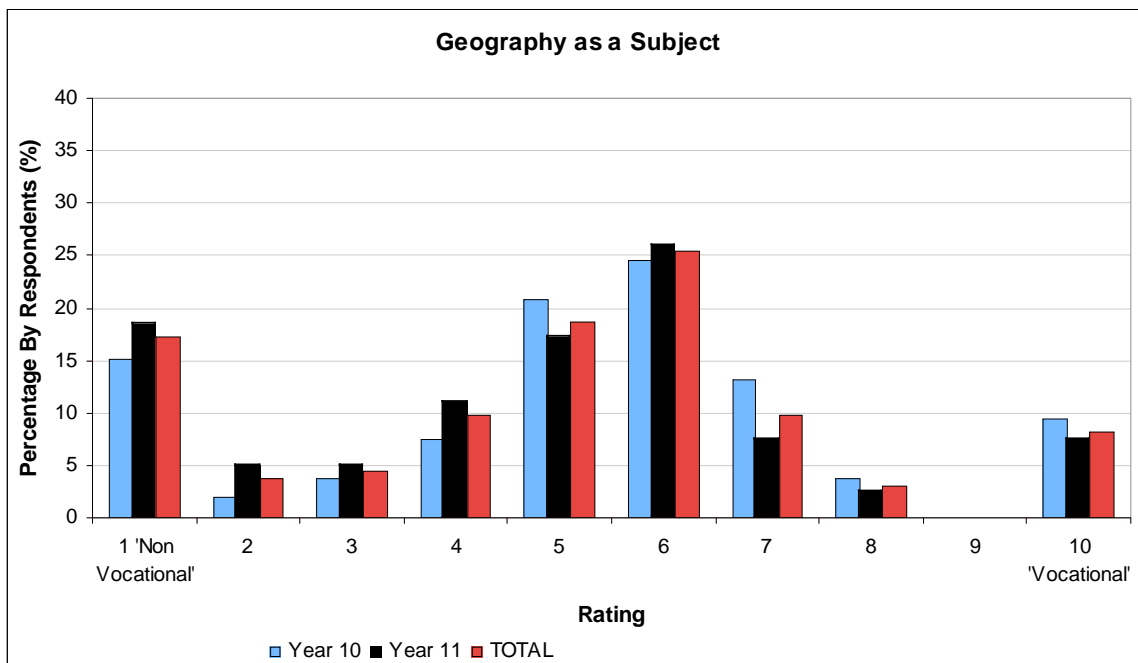


Figure 4.12: Vocational Opportunities of Geography as a Subject

Similar to the results to the sliding scale about relevancy, the student sample was split over whether Geography was considered to be vocational. Many rated it 5 or 6 – meaning fairly neutral response. Only 21 per cent of the Year 10 and 11 respondents thought Geography was vocational – but when this was the case, students rated Geography at the top of the vocational scale. In contrast, a notable proportion of the sample rated Geography at the lowest end of the scale. Opinions were polarised as to the vocational opportunities generated by studying Geography.

4.3.4 Teachers advice regarding geographical careers

Teachers were asked a number of questions relating to geography-based careers. When asked if they actively advised students to consider geography-based careers, 48 percent (10/21) answered ‘yes’, and 52 percent (11/21) answered ‘no’. 12 HSIE teachers responded to the question of which 58 percent (7/12) actively advised students to consider geography-based careers, while the remaining 42 percent (5/12) did not. Teachers were asked to make comments regarding their responses. Some of these comments are shown Table 4.19 and Table 4.20 below.

Although, the basis for advising students to consider geography-based careers varies, as indicated by the diversity of the comments made by the teachers (Table 4.19). Overwhelmingly teachers (1, 8, 17, 21) advised students to consider geographically-based careers due to the perceived value of Geography to environmental concerns. In contrast, the majority of the teachers who responded that they did not actively advise students to consider geography based careers, indicated it was due to their lack of knowledge (10, 11, 12, 16) (with exception of one response of ‘boring’:15).

Table 4.19:What is the basis for actively advising students to consider geography-based careers?

KLA teaching in		Comments
1	HSIE	The awareness geographers have regarding ecological sustainability and preservation.
6	CAPA	Loved it at school. Even as an artist, Geography is the basis of our pop patterns and historical patterns (where we are, what we do etc).
7	HSIE	Job prospects in local government especially.
8	HSIE	Its currency to global issues.
9	HSIE	Help students appreciate of their studies in geography.
17	HSIE	Managing the environment is increasingly becoming a priority for the human race.
19	ENG	If they like it (etc). To follow their interests and strengths.
21	HSIE	Understanding the concept of footprints.

Table 4.20: Teachers who do not advise students to consider geography-based careers comments

KLA teaching in		Comments
10	HSIE	The thought had never crossed my mind.
11	MATHS	I have little information apart from personal experience.
12	ENG/HSIE	Not an expert. Not really sure of career options.
15	ENG	Having taught it and studied it, the ways schools present it is boring. The students don't like it.
16	ENG/HSIE	Ignorance.

Teachers were asked if they felt students were aware of geographical career options. Their responses and comments are shown in Table 4.21. 24 percent (5/21) answered 'yes', 48 percent (10/21) answered 'no', 19 percent (4/21) answered 'don't know', and 9 percent (2/21) responded fairly/some. 8 percent (1/12) of the HSIE teachers who participated in the research answered 'yes', 67 percent (8/12) answered 'no', 8 percent (1/12) answered 'don't know', and 17 percent (2/12) answered fairly/some, indicating that overwhelmingly, HSIE and non-HSIE teachers alike do not feel that students are aware of geographically based career options.

Teachers were also asked if they were aware of geographical career options, and what could be done, and by whom, to increase teacher's knowledge of geographical careers. Their responses and comments are shown in Table 4.21. 29 percent (6/21) answered 'yes', 53 percent (11/21) answered 'no', 9 percent (2/21) answered 'mostly/probably', and 9 percent (2/21) responded 'limited/not at all'. 34 percent (4/12) of the HSIE teachers answered 'yes', 58 percent (7/12) answered 'no', and 8 percent (1/12) responded 'not at all'. Generally teachers (particularly HSIE teachers) did not consider that teachers are fully aware of geography-based career options. Teachers were split in their advice, between those who make practical solutions (see 1, 6, 9, 12, 13, 21), those that make recommendations regarding the decline in status of Geography as a subject (8, 15, 18), and those who consider it is only relevant to Geography teachers (2, 3, 4, 5, 14).

Table 4.21: Awareness of Geographical Careers

KLA Teaching In		Are students aware of options for geographical careers?		Are teachers aware of options for geographical careers? What could be done to increase teachers' awareness?	
1	HSIE	Fairly	They are advertised in some classrooms.	Not all	All teachers should be made aware of the career options.
2	ENG	Don't know	N/A	Probably	Isn't it up to careers advisors and Geography teachers?
3	SCI	Don't know	N/A	No	Geography teachers need to highlight this in their course.
4	CAPA	Yes	It depends on the Geography staff and career advisors.	Limited	Not relevant to teachers outside Geography or as career advisor.
5	CAPA	Yes	Students are individually interviewed by careers advisors, and any that express an interest would be given excellent, comprehensive advice.	No	Not sure it I relevant to those outside the Geography faculty and career advisor. I need knowledge specific to my subject area.
6	CAPA	N/A	I'm sure they are told/shown. Maybe no exposure to wide choices.	Yes	Visits/ discussions from other staff.
7	HSIE	Not much	It is growing (off a low base) because environmental issues loom larger and larger.	Reasonably	Clearly Geography teachers push the field, but careers teachers in high schools provide info and facilitate experiences – they cant push particular barrows.
8	HSIE	No	N/A	No	It's a shrinking subject that has to compete with an increasing range of other subjects.
9	HSIE	Not particularly	N/A	Yes	Encourage guest speakers from various professions associated with geography.
10	HSIE	No	N/A	No	Somewhere, sometime I saw a chart setting this out.
11	MATH	Don't know	Not sure what Geography teachers are saying to their students.	Yes	Career advisors could be used more in the faculty.
12	ENG/HSIE	Not that I know	N/A	Not really	Visits/lectures from unis.
13	HSIE	No	N/A	No	Lectures.

KLA Teaching In		Are students aware of options for geographical careers?		Are teachers aware of options for geographical careers? What could be done to increase teachers' awareness?	
14	MATH	No	N/A	No	Subject specific; those teachers should promote the benefits of the subject.
15	ENG	No	They believe it is reading map only.	No	It starts with the curriculum. Too much emphasis on physical geography, rather than human geography.
16	ENG/HSIE	No idea	N/A	No	N/A
17	HSIE	No	The link between the subject and a career path is not obvious.	No	The subject Geography needs a name change that reflects its current content and important status in today's world. Geography just sounds old fashioned and disconnected.
18	HSIE	Some	N/A	Yes	N/A
19	ENG	Yes	Career advisor, HSIE teachers, year advisor.	Generally yes	N/A
20	SCI	Yes	If the school and career advisor are doing their job.	Mostly	N/A
21	HSIE	No	Should be explained.	No	Should be explained.

4.3.5 Overall results regarding Geography as vocation/career

Despite the low response rates, particularly by the Year 10 students, participants were able to list 84 jobs that geographers do, indicating that both students and teachers have a good understanding of the breadth of careers Geography is relevant to.

In brief, geographical careers are considered favourably or average by the majority of participants in terms of the number of jobs available, how much money the jobs in the field earn, the level of unemployment in the field, the job satisfaction in the field, the contribution of jobs in the field and the social status of jobs in the field, and less favourably in terms of the ease of getting a job in the geographical field, although difference exist between different participant groups.

Geography was considered to be non-vocational or neutral (in terms of being non-vocational or vocational) by the majority of Year 10 and 11 participants, with only 21 percent of the students considering Geography to be vocational. The proportion of Year 10 students considering Geography to be vocational was higher than the Year 11 participants, and there are no significant differences by sex.

Teachers were split in terms of advice they offered to students regarding the pursuit of geographically-based careers. Overwhelmingly teachers did not consider that students and teachers were informed of the options for geographically relevant careers.

4.4 GEOGRAPHY AS A SUBJECT

This section discusses survey results in relation to the second aim of the thesis: how students understand Geography as a subject, in order to establish if students' understandings of Geography as a vocation influence their selection of Geography as a subject in the senior years of schooling.

4.4.1 Geography is about

Students were asked to list 5 things that Geography is about, with the responses and response rates shown in Table 4.22. 68 percent (127/188) of students responded to the question, giving 52 different responses, a total of 467 times (approximately 3.7 per respondent). No significant differences existed between the Year 10 and 11 response rates (66 percent, and 69 percent respectively), nor between the number of responses given per respondent (3.7 respectively), however, Year 11 respondents gave a greater range of responses (47 compared to 33). There were no differences between the number of responses given by male and female respondents. The following 9 responses were given by 10 percent or more of the respondents: Climate/Weather, Earth Features (Land, mountains, water, sea, surface etc), Environment, Maps, The World/Earth/Global 'Stuff', Countries/Places/Location of countries, People, population and community, Societies/Society and Flora & Fauna/Nature/ Living Things/Animals.

Although the number of different responses given by the students indicates an understanding of the diversity of Geography as a subject, it is notable that some of the more dynamic and contemporary problem-based themes that are at the forefront of geographical thought were very rarely listed by student participants, including: Climate change/Global warming, Environmental impacts, Environmental sustainability, Pollution, and Research, Employment, Planning and Migration.

Table 4.22: Geography is about ... (Percentage By Respondent)

Response	Year 10	Year 11	Total
Climate/Weather	35%	48%	43%
Earth Features (Land, mountains, water, sea, surface etc)	33%	43%	39%
Environment	37%	33%	35%
Maps	39%	27%	31%
The World/Earth/Global Stuff	29%	30%	30%
Countries/Places/Location of countries	33%	15%	22%
People, population and community	29%	16%	21%
Societies/Society	12%	14%	13%
Flora & Fauna/Nature/Living Things/Animals	8%	13%	11%
Management (Land, Waste, Water, Coastal)	15%	6%	9%
Ecosystems	2%	14%	9%
Global Warming/Climate Change	4%	11%	8%
Economics/Trade	8%	6%	7%
Air/Atmosphere	6%	8%	7%
Environmental Impacts/Impacts of society on environments	10%	4%	6%
Environmental Sustainability	4%	8%	6%
Development/Urban Development	4%	8%	6%
Weather Maps	10%	1%	5%
Australia's Place in the World	6%	2%	4%
Pollution	2%	3%	3%
Latitude & Longitude	4%	2%	3%
Globalization	0%	5%	3%
4 spheres	0%	3%	2%
Aboriginal people	6%	0%	2%
Relations Between Countries	4%	1%	2%
Socio Economic Ladder	4%	1%	2%
Continental Drift	2%	2%	2%

Response	Year 10	Year 11	Total
Water Cycle	4%	1%	2%
Future Planning (Improving the World)	2%	1%	1.5%
Biophysical interactions	0%	2%	1.5%
Research	2%	1%	1.5%
Planet Structure	2%	1%	1.5%
Colouring in	0%	2%	1.5%
Human Rights	2%	0%	1%
Graphs	2%	0%	1%
Surveys	2%	0%	1%
Aid	2%	0%	1%
Travel	0%	1%	1%
Third World Countries	0%	1%	1%
Migrants	0%	1%	1%
World customs	0%	1%	1%
Distance	0%	1%	1%
Biodiversity	0%	1%	1%
Religions	0%	1%	1%
Planning	0%	1%	1%
Knowing Where You're Going	0%	1%	1%
Altitude	0%	1%	1%
Creating GPS systems	0%	1%	1%
Drought	0%	1%	1%
Employment	0%	1%	1%
Conservation	0%	1%	1%
Boring	0%	1%	1%
Total Responses	178	289	467
Total Respondents	48	79	127

4.4.2 Descriptions of Geography

Students were asked to list 5 words that describe Geography. The responses and response rates are shown in Table 4.23. 56 percent (105/188) of students responded to the question, giving 78 different responses to the question, a total of 340 times (approximately 3.2 per respondent). Only slight differences existed between the Year 10 and 11 response rates

(62 percent and 58 percent respectively). Year 11 respondents gave a greater range of responses (70 compared to 48) but less by respondent (3.1 compared to 3.4).

Table 4.23: Descriptions of Geography (Percentage By Respondent)

Response	Year 10	Year 11	Total
Not Interesting/Boring/Long/Uneventful/Brain Draining/Sleepy/Tedious	79%	33%	50%
Earth/World/Natural World and Features	8%	39%	29%
Interesting/Fascinating	21%	13%	16%
Mapping	16%	15%	15%
Environments and ecosystems	18%	12%	14%
Weather/climate	2.5%	19%	13%
Not Useful	16%	10%	12%
Useful/Helpful	16%	9%	11%
Hard/Complicated/Difficult	13%	7%	9.5%
Fun/Enjoyable/Enlightening/Entertaining	18%	3%	8.5%
Flora and Fauna	5%	10%	8.5%
People/Society/Community/Population	8%	7%	7.5%
Easy	8%	7%	7.5%
Informative/Educational/Factual	8%	6%	6.5%
Air/Atmosphere	0%	9%	5.5%
Places	8%	4.5%	5.5%
Annoying/Frustrating	5%	4.5%	4.5%
Irrelevant/Waste of time	13%	0%	4.5%
Graphs	2.5%	4.5%	4%
World Studies	0%	6%	4%
Landscape	8%	0%	3%
Confusing	8%	0%	3%
Trade	8%	0%	3%
Lambert/Doyle	0%	4.5%	3%
Environmentally Friendly/Sustainability	0%	4.5%	3%
Countries	0%	4.5%	3%
Common Sense	0%	4.5%	3%
Crap/Stupid	5%	0%	2%
Relevant/Worthwhile	5%	0%	2%
Vocational	2.5%	1.5%	2%
Environmental Management	0%	3%	2%
Drainage Basin	0%	3%	2%
Equator	5%	0%	2%
Repetitive	5%	0%	2%
Topography	5%	0%	2%
Four Spheres/Biosphere	0%	3%	2%
Pollution	0%	3%	2%
Not Vocational	0%	3%	2%

Response	Year 10	Year 11	Total
Math/Numbers	0%	3%	2%
Location	0%	3%	2%
Important	0%	3%	2%
Green	0%	3%	2%
General Knowledge	0%	3%	2%
Coloring	0%	3%	2%
Greenhouse/Global warming	0%	3%	2%
Future	2.5%	0%	1%
OK	2.5%	0%	1%
Aid	2.5%	0%	1%
Atlas	2.5%	0%	1%
Convenient	2.5%	0%	1%
Spatial	2.5%	0%	1%
Testing	2.5%	0%	1%
Understandable	2.5%	0%	1%
Variety	0%	1.5%	1%
Travel	0%	1.5%	1%
Tim Bailey	0%	1.5%	1%
Tectonics	0%	1.5%	1%
Studying	0%	1.5%	1%
Statistics	0%	1.5%	1%
Scientific	0%	1.5%	1%
Research	0%	1.5%	1%
Relationships	0%	1.5%	1%
Non-Compulsory	0%	1.5%	1%
Measuring	0%	1.5%	1%
Life	0%	1.5%	1%
Latitude & Longitude	0%	1.5%	1%
Knowledgeable	0%	1.5%	1%
Issues	0%	1.5%	1%
Hippies	0%	1.5%	1%
Globalization	0%	1.5%	1%
GIS	0%	1.5%	1%
Geologist	0%	1.5%	1%
Future	0%	1.5%	1%
Exploration	0%	1.5%	1%
El Nino	0%	1.5%	1%
Compost	0%	1.5%	1%
Bludgey	0%	1.5%	1%
Abstract	0%	1.5%	1%
Total Responses	130	210	340
Total Respondents	38	67	105

Of the 78 different responses, 25 were considered to actually describe Geography as a subject, rather than describe the topics covered in geography. Of these, 5 were considered to be neutral/unclear in terms of being positive or negative. These included: 'abstract', 'bludgey', 'non-compulsory', 'convenient' and 'common sense'. Of the remaining 20 responses, 10 were considered to be positive and 10 negative. These 20 responses were given a total of 156 times.

The positive responses included: 'interesting'/'fascinating', 'useful'/'helpful', 'fun'/'enjoyable'/'enlightening'/'entertaining', 'easy', 'informative'/'educational', 'relevant'/'worthwhile', 'vocational', 'important', 'OK' and 'understandable'. These 10 responses were given 61 times in total (39 percent of the 20 combined positive and negative responses) - 33 times by the 38 Year 10 participants (0.9 times per respondent), and 28 times by the 67 Year 11 participants (0.4 times per respondent).

Negative responses included: 'not interesting'/'boring'/'long'/'uneventful'/'brain draining'/'sleepy'/'tedious', 'not useful', 'hard'/'complicated'/'difficult', 'annoying'/'frustrating', 'irrelevant'/'waste of time', 'confusing', 'crap'/'stupid', 'repetitive', 'not vocational' and 'testing'. These 10 responses were given 95 times in total (61 percent of the 20 combined positive and negative responses) - 56 times by the 38 Year 10 participants (1.5 times per respondent), and 38 times by the 67 Year 11 participants (0.6 times per respondent).

Year 10 respondents were more than twice as likely to give both positive and negative descriptions of geography, than the Year 11 respondents. Male students were twice as likely to give a positive description of Geography as the female students (0.7 positive responses per male respondent, compared to 0.35 per female student). Female students gave more negative descriptions of Geography than male students (1.0 negative responses given per female respondent, compared to 0.8 per male student).

4.4.3 Geography is ...

Students were asked in separate survey questions to rank Geography in terms of whether they considered it to be; hard or easy, not interesting or interesting and boring or fun.

Geography: hard or easy?

74 percent (139/188) of students responded to the question that asked them whether they considered Geography to be hard or easy. On a 10 point scale (with 1 being hard and 10 being easy), Geography was considered to be hard (ranked between 1 and 4) by 29 percent of the respondents (41/139), neutral (ranked between 5 and 6) by 35 percent of the respondents (48/139), while 36 percent of the respondents (50/139) considered Geography to be easy (ranked between 7 and 10), giving a mean of 5.7 for the respondents. Despite this mean, most of the student responses were split into three distinct groups, those that considered it neutral (6), those that considered it hard (1), and those that considered it easy (10), as shown in Figure 4.13. Only slight differences existed between the numbers of respondents that considered Geography hard and easy, and between the Year 10 and 11 responses. Overall some differences existed between the responses of the male and female respondents, however, these were not conclusive.

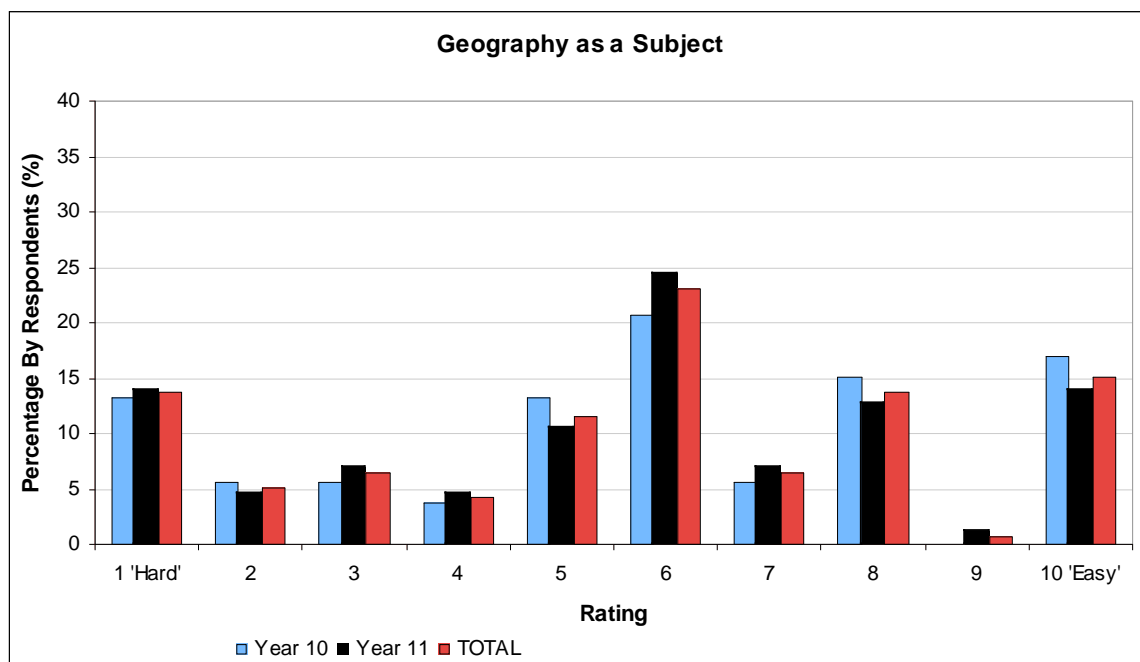


Figure 4.13: Hard or Easy? - Geography as a Subject

Geography: interesting or not interesting?

74 percent (139/188) of students responded to the question that asked them whether they considered Geography to be interesting or not interesting. On a 10 point scale (with 1 being not interesting and 10 being interesting), Geography was considered to be not interesting (ranked between 1 and 4) by 51 percent of the respondents (72/139), 21 percent of the respondents (29/139) considered Geography to be neutral (ranked between 5 and 6), and the remaining 28 percent of the respondents (38/139) considered Geography to be interesting (ranked between 7 and 10), giving a mean of 4.5 for the respondents.

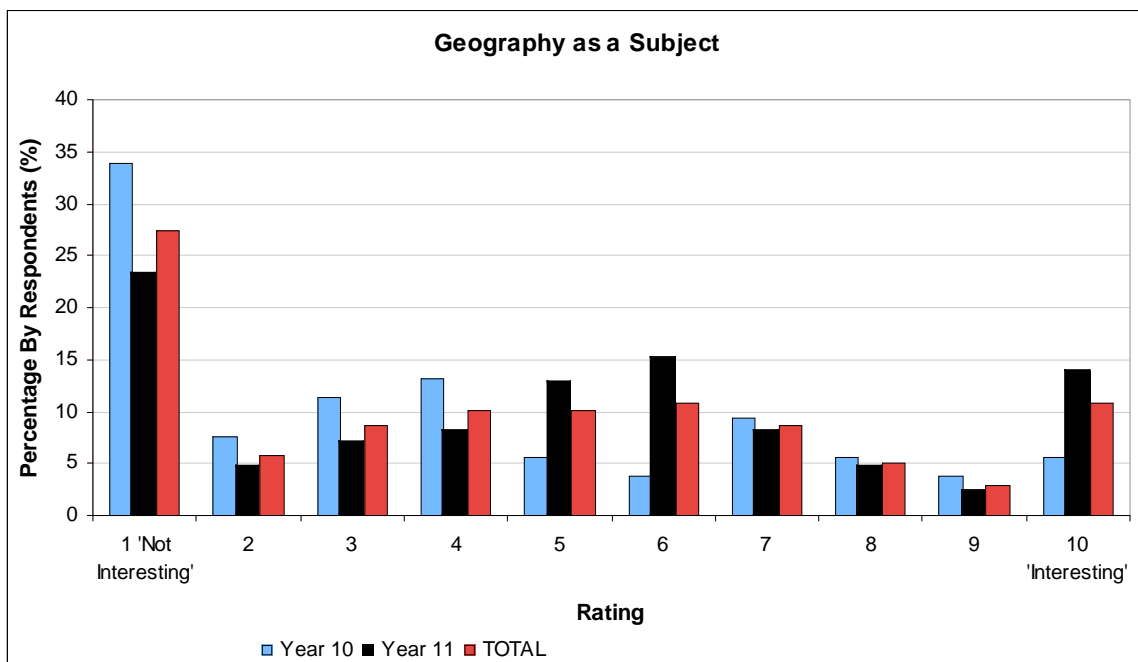


Figure 4.14: Interesting or Not Interesting? - Geography as a Subject

Geography was considered to be not interesting (ranked between 1 and 4) by the majority (more than 50 percent) of the Year 10 and 11 respondents, with the number of students that considered Geography to be not interesting more than double those that considered it interesting (illustrated in Figure 4.14). However, the proportion of Year 10 students considering Geography to be not interesting was notably higher than the Year 11 respondents (66 percent, compared to 43 percent). Overall some differences existed between the responses of the male and female respondents, however, these were not conclusive. Also worth noting is that amongst those students who rated Geography as

interesting, they were most likely to rate it at the top of the scale. Amongst ‘converts’ (particularly in Year 11) Geography is clearly considered very interesting indeed.

Geography: boring or fun?

73 percent (137/188) of students responded to the question that asked them whether they considered Geography to be boring or fun. On a scale from 1 to 10 (with 1 being boring and 10 being fun), the majority of students considered Geography to be boring (ranked between 1 and 4) by 54 percent of the respondents (74/137), whilst 28 percent of respondents (38/137) considered Geography to be neutral (ranked between 5 and 6), and only 18 percent of respondents (25/137) considered Geography to be fun (ranked between 7 and 10). A mean of 4.1 was determined for the total student respondents.

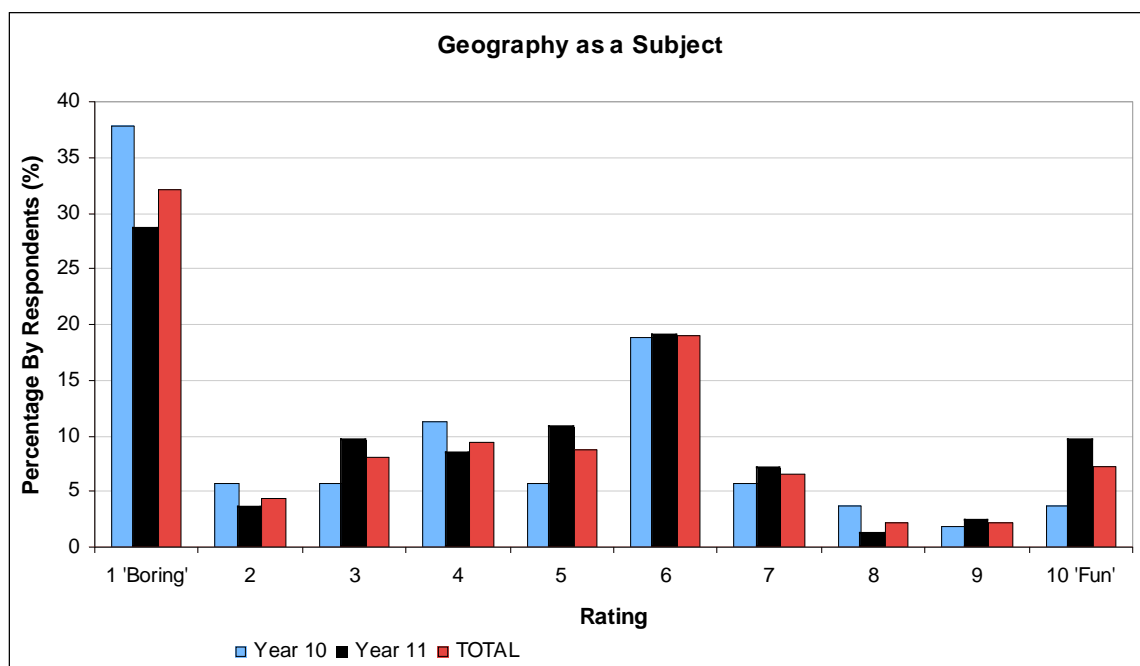


Figure 4.15: Boring or Fun? - Geography as a Subject

Geography was considered to be boring (ranked between 1 and 4) by the majority (more than 50 percent) of the Year 10 and 11 participants and the percentage that considered it boring more than four times that that considered it fun (shown in Figure 4.15). The proportion of Year 10 students that considered Geography to be boring was higher than the Year 11 students (60 percent, compared to 50 percent). There were no significant differences between male and female respondents.

4.4.4 Conclusion

The breadth of the answers indicates that both Year 10 and 11 students have a good understanding of the diversity of Geography as a subject. Of the responses that actually described geography, and that were easily defined as being negative or positive, negative responses were more than twice as likely as positive responses, and the Year 10 students were twice as likely to give both positive and negative responses as the Year 11 participants.

Students were split in terms of whether Geography was easy or hard. However, Geography was considered interesting by equally few Year 10 and Year 11 students, although, the rate of Year 10 participants considering Geography to be not interesting was significantly higher than for Year 11. Geography was considered to be boring or neutral (in terms of being boring or fun) by the majority of Year 10 and 11 participants. It must be noted however, that to some extent the results to these questions were 'polarised', as there were some respondents who indicated that they considered Geography to be interesting and fun (at the uppermost limit of the scale).

CHAPTER 5: DISCUSSION AND CONCLUSION

The purpose of this thesis was to examine how secondary school students and teachers understood Geography as a vocation and as a subject, in order to determine if this understanding is a causative factor in the decline in the number of students electing to study Geography in the senior years of high school. In order to achieve this purpose, the thesis was organised around two primary research questions:

1. to what extent, and how, do high school students and teachers understand Geography as a vocation; and
2. do high school students' understandings of Geography as a vocation influence their selection of Geography as a subject in the senior years of schooling?

This chapter initially presents findings about the factors influencing student subject selection. Following which, the key findings that answer these two research questions, are presented, relating to literature in the area. By answering the two aforementioned research questions, this thesis provides a description of how Geography as a vocation is understood by secondary students and teachers, and also determines the factors that influence the selection of Geography by students at the senior school level. Limitations of the study and recommendations for further research will be made, following which conclusions made by the conducted research will be made.

5.1 OVERALL FINDINGS

According to the literature, in the first half of the 20th century, Geography graduates in the United Kingdom, America and Australia were primarily employed as teachers (Balchin 1983). This changed from the 1960s, with Geography graduates being employed as teachers, town planners or academics, with further diversification of the employment destinations of Geography graduates in the United Kingdom, America and Australia diversifying from the 1970s (Lawton 1980; Balchin 1983; Gober et al. 1995a Clark & Higgitt 1997; Le Heron & Hathaway 2000; Holmes 2001; Gedye et al. 2004; Murphy 2007; Sidaway & Johnston 2007). As outlined in Chapter 2, prior research has been conducted that provides evidence of the diversity of employment destinations of

Geography graduates (Balchin 1983; Briggs 1988; Gober et al. 1995). Despite this, literature indicates that Geography is widely misunderstood in terms of its career value, and is considered a field with limited employment prospects (Le Vasseur 1999; Le Heron & Hathaway 2000; Cranby 2001; Conolly 2001; Hay 2001; Greiner et al. 2002; Gedye et al. 2004).

5.1.1 Student subject selection

Student participants answered questions about the subjects they had selected to study in their senior years of high school. In accordance with the findings of previous studies, in which HSIE (Society and Environment) subjects accounted for 20 percent of all subjects studied by a sample of Year 12 students in Australia in 2001 (ACER 2005), HSIE subjects accounted for 22 percent of the subjects studied by the student participants who responded to the question. Student participants were also asked about their reasons for studying subjects. The three reasons most commonly selected by the student respondents, of the total reasons specified were: 'enjoyment' (22 percent of total reasons), 'interest' (17 percent of total reasons) and 'relevance to future work' (12 percent of total reasons). These reasons closely resemble those revealed by a study conducted by Elsworth and Harvey-Beavis (1995), in which 'enjoyment' (accounted for 16 percent of reasons), 'the subject is compulsory' (15 percent of reasons), 'relevance to work' (14 percent of reasons) and 'interest' (13 percent of reasons).

81 percent of the Year 11 respondents indicated that they had selected their subjects with career options in mind. Furthermore, 88 percent of Year 10 and 11 participants responded that they had considered the career they might be interested in, with 93 percent indicating that they had done 'some', 'quite a lot' or 'a lot' of thinking about their future career.

These findings indicate that high school students are concerned about their career options, and make decisions, such as subject selection, based on these concerns, further supporting earlier research studies in the area (Elsworth & Harvey-Beavis 1995; ACER 2005).

In the study conducted by Ballantyne (1996) (that examined why senior high school students were studying Geography), 'interest', 'relevance to work' and 'past achievement'

were the three most commonly given reasons. 14 student respondents from this study indicated that they were studying Geography, with the reasons given most often being 'enjoyment', 'relevance to work' and 'interest', although the numbers of students studying Geography in this study were very limited, making comparisons difficult. However, these reasons given for Geography are the same three reasons most commonly given of the total reasons in this research.

5.1.2 Understandings of geography-based careers

Although research exists that indicates that Geography graduates are employed in a diverse range of occupations, only one prior study was found in which students' understanding of geography-based careers was assessed. Le Vasseur (1999) found American school students in the 6th and 9th grades had limited knowledge of occupations to which Geography was relevant, besides map-making, exploring and meteorology. In contrast to this, the results of this thesis demonstrate that both student and teacher participants have a reasonably accurate and comprehensive knowledge of geography-based careers, and an understanding that Geography is of vocational value to a diverse range of occupations. In total, participants were able to list 84 occupations that geographers do, an amount similar to the 90 plus occupations where Geography graduates from the United Kingdom were employed (as identified in the study conducted by Balchin 1983).

A number of previous studies provided details of the employability of Geography graduates (Briggs 1988; Walford 1991; Gober et al. 1995a, 1995b, 1995c; Clark & Higgitt 1997; Le Heron & Hathaway 2000; Gedye et al. 2004), although no previous research existed that examined how students understood geographically-based careers. Geography graduates were found to get jobs relatively quickly upon graduation (Briggs 1988; Gober et al. 1995a, 1995b, and 1995c; Clark & Higgitt 1997; Gedye et al. 2004); experience lower than average rates of unemployment (Walford 1991); and have starting salaries that were competitive or higher than other graduates, and were well represented in the higher income cohorts (Le Heron & Hathaway 2000). The results of this thesis indicate that although students and teachers did not rate geography-based careers as highly, compared to research from previous studies, in terms of the number of jobs, the money earned, the

ease of getting a job and the levels of unemployment levels, geography-based careers were still considered positively (average or above) by the student and teacher participants in terms of all of these factors.

No previous research was located that considered secondary school students' and teachers' perceptions of geography-based careers, in terms of the satisfaction of jobs in the field; the contribution of jobs in the field or the social status of jobs in the field. This thesis found that Geography based careers are considered to be 'high' in terms of both their job satisfaction and contribution by the teacher participants, and 'average' and 'average-to-high' respectively by the student participants. The social status of geography-based jobs is considered by student and teacher participants to be 'average' in comparison with other professional fields. Generally student respondents felt they were more informed about the number of jobs available, the ease of getting a job, and the contribution of jobs in the field (as indicated by the percentage selecting 'Don't Know', less than 25 percent). In contrast teacher participants only seemed informed about the contribution and social status of jobs in the field (as indicated by the percentage selecting 'Don't Know', less than 20 percent).

Of particular note was the percentage of respondents that considered the satisfaction of jobs in the field to be 'high/very high'. Overwhelmingly, student and teacher participants considered geography-based careers as jobs from which one would get great satisfaction.

These results also showed that teachers believe that geography-based jobs are more difficult to find than do the students, who are split between those that think it is easy, average and difficult. This is against the reality that Geography graduates find it comparatively easy to get jobs (Briggs 1988; Gober et al. 1995a, 1995b, and 1995c; Clark & Higgitt 1997; Gedye et al. 2004). However, given that students view careers in the field of geography positively, it is unlikely that this is a causative factor in the decline in the number of students selecting to study Geography in the senior years of high school.

No prior research was found that analysed how students viewed Geography in terms of its relevance or vocational nature. The findings of this thesis are that student participants consider Geography 'neutral' or slightly positively (relevant), in terms of whether it is

relevant or irrelevant, and slightly higher by the Year 10 student participants than the Year 11. Overall Geography was considered to be 'neutral' or 'relevant' by 64 percent of the student participants, although it must be noted that the sample was 'split' in terms of whether they considered it irrelevant, neutral or relevant, and consequently, Geography was either considered to be neutral, extremely irrelevant or extremely relevant.

In terms of whether Geography is vocational or non-vocational, the student participants considered Geography to be 'neutral', although significantly more Year 10 students considered Geography to be vocational than Year 11 students. Overall Geography was considered to be 'neutral' or positively vocational by 65 percent of the student participants (72 percent for the Year 10 participants, and 60 percent for the Year 11 participants), although again the sample was 'split', with those considering Geography to non-vocational, neutral or vocational.

The student response rates for the questions regarding understandings of Geographically-based careers, varied significantly. The question asking students to 'what jobs Geographers do?' was answered by 37 percent, and 50 percent, of Year 10 and 11 students, respectively. Although it is possible that these low response rates were a result of a fault in the survey, or the distribution method, this is unlikely, as these rates were significantly lower than other similar questions. Rather, it is likely that only students who had an idea about geography-based careers answered the question, leaving a sizable 'do not know' student group unrecorded.

These results reveal that when queried, both students and teachers have a broadly accurate understanding of the extensive range of careers to which Geography is relevant, as well as of the employability of geography-based careers. However, when students and teachers were asked in surveys (prior to the questions about geography-based careers) about the school subjects that they considered to be of vocational use, Geography was listed only twice (2/355), both times by students, revealing that there are many other subjects that students and teachers think of first when prompted without discipline-specific questions, about the school subjects useful in getting a job. This suggests that there is less of a problem about students' understanding of Geography as a vocation – and more an overall

awareness problem for Geography as a discipline in relation to higher-profile disciplines and their career paths. Geography is known to be a vocational discipline, but simply isn't in the consciousness of students as prominently as other disciplines when thinking about vocational matters.

Teacher participants were split in terms of advising students to consider geography-based careers, with most citing reasons concerning environmental management and sustainability when asked the basis for the advice, although HSIE teachers advised students at a higher rate than non-HSIE teachers. The majority of teachers did not feel that either students or teachers were aware of the options available in terms of geography-based careers, despite the fact that the results suggest that both student and teacher participants have an accurate knowledge and understanding of geography-based careers.

5.1.3 Perceptions of Geography

Literature in the area shows a significant decline in the number of students studying Geography in the senior years of high school, in NSW, but also across Australia, as well as internationally (Ainley et al. 1994; Ballantyne 1996; Cranby 2001; Bliss 2006; IAG et al. 2006; Hamper & Kleeman 2007). In NSW, 7.2 percent of the total HSC (Year 12) candidature studied Geography in 2008, a steep decline from a figure well above 20 percent in the 1990s (NSW BOS 2008).

The second question addressed by this research was if high school students' understandings of Geography as a vocation influence their selection of Geography as a subject in the senior years of schooling. Approximately 9 percent of the student participants who listed the subjects they were studying, selected Geography, a number comparable to the NSW state average. As the findings reveal that students and teachers understand Geography as a vocation, it is possible to infer that this is not a causative factor in students not selecting Geography, but rather other factors are influencing the current decline in student numbers.

This thesis aimed to understand not only how students understood geography-based careers, but also what they thought of Geography as a subject, as very limited research is available that provides details of students' descriptions of the discipline. Students were able to list 52 things that Geography was about, suggesting that students have a good understanding of the diversity of Geography as a subject. However, when evaluative rather than descriptive words were elicited, students were twice as likely to describe Geography negatively as positively.

Based on the mean response, student participants considered Geography positively in terms of whether it was easy, although respondents were 'split' and either considered Geography to be neutral, extremely hard or extremely easy. Students, however, considered Geography negatively in terms of its interest (based on the mean response students), with respondents polarised, and notable cohorts of students that considered Geography to be not at all interesting or very interesting. The number of students that considered Geography to be not interesting was more than double those that considered it interesting.

Similarly, Geography was considered negatively in terms of whether it is boring or fun. Student respondents were split between considering it neutral, boring and fun, although the percentage considering it boring was more than four times that considering it fun. Geography does not have a problem of students misunderstanding what it is about; it has an image problem because students think it is uninteresting and boring.

5.2 LIMITATIONS OF STUDY AND RECOMMENDATIONS FOR FURTHER RESEARCH

Research indicates that Geography graduates are employed in a diverse range of jobs, and are also highly employable (Briggs 1988; Zhou et al. 1999; Le Heron & Hathaway 2000; Van Noorden 2001; Greiner et al. 2002; Kneale 2002), however, despite this, literature continues to identify widespread declines in the number of school students selecting to study Geography (Ainley et al. 1994; Ballantyne 1996; Cranby 2001; Bliss 2006; IAG et al. 2006; Hamper & Kleeman 2007). This research reveals that senior high school students generally understand Geography positively as a vocation, suggesting that this is not a factor that accounts for the significant decline in student numbers studying Geography in

the senior years of high school in NSW. This research further reveals that students' choice of Geography is not related to their understanding of Geography as a vocation, but rather due to their feelings about the nature of the subject. Consequently, research is needed that further investigates the factors influencing students' selection of Geography in the senior years of high school, as very little empirically-based, student centred research has been conducted, that specifically considers students' understandings and perceptions of geography. In particular, research is needed in order to address why students do not choose to study Geography, as well as the issues of Geography being considered 'boring' by high school students, such as geography's image and curriculum changes.

Further research in the area must also focus on more diverse populations, as previous research suggests that subjects from the HSIE KLA are more likely to be studied by female students than male students, and students attending Independent schools (ACER 2005). Further research would allow for comparisons and better understandings about the various factors influencing students in their choice of Geography in the senior years of high school.

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APPENDIX A - YEAR 10 STUDENT SURVEY

Perceptions of geography as a vocation: a study of secondary school students and teachers in the Illawarra and South East region of New South Wales

Heather Smith

Year 10 Student Survey

Most of the questions in this survey can be completed by circling an answer, or by writing a number or one word answer.

If you have any questions while completing this survey, please feel free to ask.

Your participation in this research is voluntary, and you are free to discontinue at any time. The researcher assures you that all information collected will be kept confidential, and that your privacy will be respected. This survey does not collect any information that can be used to identify you.

By signing below, you indicate that you;

- Have read and understand the information sheet detailing the above-mentioned research project, and understand the procedures required, and time involved;
- Understand that your participation in this research is voluntary and you are free to refuse your participation at any time, and that a decision not to participate will not affect your academic standing or relationship with the University of Wollongong, and that you are free to withdraw your participation at any time, including after the research has begun;
- Understand that you will be asked to sign a consent form;
- Understand that you will be asked to complete a survey to be issued by Heather Smith during class time. Your contribution will be confidential and personal identification will not be possible from the data collected as part of the study;
- Understand that there are no potential risks or burdens associated with this study;

• Understand that if you have any enquiries about the research, you can contact Heather Smith at hjs964@uow.edu.au and Associate Professor Chris Gibson at calibson@uow.edu.au, or on (02) 4221 3448, or if you have any concerns about the way the research is or has been conducted, you can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on (02) 4221-4457.

By signing below I am consenting to completing a questionnaire about subject and career selection, during class time. I understand that the data collected from my participation will be used for the purposes of a Bachelor of Science honours thesis, and possibly for other published studies such as journal publication, and I consent for it to be used in that manner.

Signed _____ **Date** _____

Name (please print) _____

Thankyou very much for your time and cooperation

SECTION 1: FUTURE PLANS

1. What are you planning on doing next year (2008)? (Circle as many as required).

- Continue high school education. (Go on to Question 2)
- Study at TAFE Course: _____
- Get a full-time job Type of job: _____
- Get a part-time job Type of job: _____
- Undecided
- Other (please specify) _____

2. If you are planning on continuing your high school education, what subjects are you planning to study, and what are your reasons for studying each subject? Pick as many reasons as are relevant for each subject. Write only the number for each reason. (You may pick the same reason for more than 1 subject)

Subject	Reasons
a) _____	_____
b) _____	_____
c) _____	_____
d) _____	_____
e) _____	_____
f) _____	_____
g) _____	_____
h) _____	_____

Reasons for taking subject

01. The subject is one that I enjoy.
02. The subject is one that I find interesting.
03. The subject is relevant to the work I want to do in the future.
04. The subject is one that is necessary for a course that I plan to study in the future.
05. The subject is one that I find useful and practical.
06. The subject is one in which I usually get good marks.
07. The subject helps a student get a good UAI.
08. Marks in this subject are used for university admission.
09. My parents wanted me to do this subject.
10. My teachers/career advisor wanted me to do this subject.
11. I have a friend/friends doing this subject.
12. The subject was chosen only because I could not do the subjects I really wanted.
13. The subject is compulsory.
14. The subject is part of a recommended program of study.
15. I needed to include this subject to fulfil a requirement to study a number of subjects from given groups (or KLAs).
16. I have no readily stated reason for choosing this subject.
17. I like the teachers in this subject.
18. The teacher of this subject has a good reputation
19. Other. Please specify next to the name of the subject above.

3. How much advice about **SUBJECT SELECTION** have you received from; (please circle)
- | | | | | | |
|--------------------|-------|-------------|------|----------|------|
| a) Parents | a lot | quite a lot | some | a little | none |
| b) Other adults | a lot | quite a lot | some | a little | none |
| c) Teachers | a lot | quite a lot | some | a little | none |
| d) Career advisors | a lot | quite a lot | some | a little | none |
| e) Friends | a lot | quite a lot | some | a little | none |

4. How important to you is the advice about **SUBJECT SELECTION** from; (please circle)
- | | | | | | |
|--------------------|------|-------|------|--------|------------|
| a) Parents | very | quite | some | little | not at all |
| b) Other adults | very | quite | some | little | not at all |
| c) Teachers | very | quite | some | little | not at all |
| d) Career advisors | very | quite | some | little | not at all |
| e) Friends | very | quite | some | little | not at all |

5. What school subjects do you believe are useful in getting a job? Please list below and give the reasons that you think the subject is useful for getting a job.

Subject	Reason
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

6. Have you thought about what career you might be interested in? (Yes or no) _____
(If yes go to question 7, if no go to question 16)

7. If yes, how much thinking have you done about your future career? (please circle one)

a lot	quite a lot	some	a little	none
-------	-------------	------	----------	------

8. At this point in time, what kind of career are you planning for yourself?

9. How firm are these plans for what you want to do as a career?

very	quite	some	little	not at all
------	-------	------	--------	------------

10. When do you think that you started to have ideas about a future career?

11. How have these ideas changed over time? _____

12. How well informed do feel about the educational and career options available to you? (please circle one)

very	quite	some	little	not at all
------	-------	------	--------	------------

13. Do career advisors actively discuss subject selection, future study and career options with you?

Subject selection	yes / no
Future study	yes / no
Career options	yes / no

14. How helpful do you feel this advice has been to you in helping you make?

very	quite	some	little	not at all
------	-------	------	--------	------------

15. How much advice about **CAREER SELECTION** have you received from;

	FACTOR	A lot	Quite a lot	Some	A Little	None
a)	Parents					
b)	Other Adults					
c)	Teachers					
d)	Career Advisors					
e)	Friends					

SECTION 2: GEOGRAPHY AS A SUBJECT AND A CAREER

16. How important is advice to you about **CAREER SELECTION** from you;

	FACTOR	Very	Quite	Some	Little	Not at all
a)	Parents					
b)	Other Adults					
c)	Teachers					
d)	Career Advisors					
e)	Friends					

17. How important to you are each of the following factors in making choices about your career? (Please tick)

	FACTOR	Very Important	Quite Important	Slightly Important	Not Important	Don't know
a)	Number of jobs in the occupation					
b)	How much money the job earns					
c)	How easy it is to get a job in the occupation					
d)	How much unemployment there is in the occupation					
e)	Whether there is a balance in the age structure of employees in industry (balance of younger and older employees)					
f)	Whether there is a balance between male and female workers in the occupation					
g)	How interested you are in the job					
h)	How much satisfaction you get from doing the job					
i)	The contribution the job makes to society					
j)	The social status of the job					

18. What does social status mean to you? Please place a mark on each line.

- How much money the job earns? (extremely important) ----- (not important)
- How trendy the job is? (extremely important) ----- (not important)
- What other people think of the job? (extremely important) ----- (not important)
- How much power the job holds? (extremely important) ----- (not important)
- Other (please specify below) (extremely important) ----- (not important)

19. What jobs do you consider to have high social status?

20. Please list 5 things that you think geography is about.

21. Please list 5 words that you think describe geography.

22. Geography is: (please place a mark somewhere on each the line to describe geography)

- Easy ----- Hard
- Interesting ----- Not interesting
- Fun ----- Boring
- Relevant ----- Irrelevant
- Vocational ----- Not vocational

23. What jobs do you think geographers do? Please list as many as you can think of.

24. What do you think of geographical careers in general? Please circle a box for each factors.

	FACTOR						
a)	Number of jobs in the field	Very large	Large	Average	Limited	Very limited	Don't know
b)	How much money jobs in the field earn	Very High	High	Average	Low	Very Low	Don't know
c)	How easy it is to get a job in the geographical field	Very high	High	Average	Limited	Very limited	Don't know
d)	How much unemployment there is in the field	Very high	High	Average	Low	Very low	Don't know
e)	How balanced the field is in age structure (balance of younger and older employees)	Very balanced	Balanced	Balanced	Unbalanced	Very unbalanced	Don't know
f)	How balanced the field is between male and female employees	Very balanced	Balanced	Balanced	Unbalanced	Very unbalanced	Don't know
g)	Interest in the field	Very high	High	Average	Limited	Very limited	Don't know
h)	Job satisfaction in the field	Very high	High	Average	Limited	Very limited	Don't know
i)	The contribution jobs in the field make to society	Very high	High	Average	Limited	Very limited	Don't know
j)	The social status of jobs in the field	Very high	High	Average	Low	Very low	Don't know

(please see over)

SECTION 3: STUDENT BACKGROUND

25. How old are you? _____ yrs

26. Sex (M or F)? _____

27. In what country were you and your parents born?

You: _____

Mother: _____

Father: _____

28. What language do you speak most often at your permanent home address?

29. What other languages can you and your parents speak?

You: _____

Mother: _____

Father: _____

30. How much formal education do your mother and father have? (Indicate highest level only).

	Primary School	Some High School	TAFE or similar technical college	University	Don't Know
Mother					
Father					

31. What is the present, or most recent full-time occupation of each of your parents?

Mother: _____

Father: _____

THANKYOU VERY MUCH FOR YOUR COOPERATION

APPENDIX B - YEAR 11 STUDENT SURVEY

2. Are there any subjects that you wanted to study this year, but did not? (List your reasons for not studying the subject, using the codes provided below. You may use the same reason for more than 1 subject).

Subject	Reason
_____	_____
_____	_____
_____	_____

Reasons for not taking subject

- 01. The subject was not offered by my school.
- 02. I would have to study to another school/campus to study this subject.
- 03. I had not completed the necessary previous subjects.
- 04. The subjects clashed with my other subjects on the timetable.
- 05. My teachers/career advisor advised me against doing the subject.
- 06. There were not enough other students doing the subject, so it was not run.
- 07. Rules about choosing subjects meant that I had already chosen the maximum subjects allowed in this group (KLA).
- 08. It is hard to get high marks in this subject.
- 09. The subject was not relevant to my future job or study plans.
- 10. The subject does not count towards a University Admissions Index.
- 11. Did not like the teacher.
- 12. Other. Please specify next to the name of the subject above.

3. How much advice about **SUBJECT SELECTION** have you received from; (please circle)

- a) Parents a lot quite a lot some a little none
- b) Other adults a lot quite a lot some a little none
- c) Teachers a lot quite a lot some a little none
- d) Career advisors a lot quite a lot some a little none
- e) Friends a lot quite a lot some a little none

4. How important to you is the advice about **SUBJECT SELECTION** from; (please circle)

- a) Parents very quite quite some little not at all
- b) Other adults very quite quite some little not at all
- c) Teachers very quite quite some little not at all
- d) Career advisors very quite quite some little not at all
- e) Friends very quite quite some little not at all

5. Did you choose your subjects with career options and preferences in mind? (Yes or No) _____

6. What school subjects do you believe will be useful in getting you a job? Please list below giving reasons for each subject.

Subject	Reason
a) _____	_____
b) _____	_____
c) _____	_____
d) _____	_____
e) _____	_____

SECTION 2: FUTURE PLANS

7. What are you planning on doing next year (2008)? (Circle as many as required).

- Study at university. Course: _____
- Study at TAFE. Course: _____
- Study at a private college. Course: _____
- Get a full-time job. Type of job: _____
- Get a part-time job. Types of job: _____
- Travel _____
- Undecided _____
- Other (please specify) _____

8. Have you thought about what career you might be interested in? (Yes or no) _____

9. If yes, how much thinking have you done about your **future career**? Please circle one?

- a lot quite a lot some a little none

10. At this point in time, what kind of career are you planning for yourself?

11. How firm are these plans for what you want to do as a career?

- very quite some little not at all

12. When do you think that you started to have ideas about a future career?

13. How have these ideas changed over time?

14. How well informed do feel about the educational and career options available to you? (please circle one)

very quite some little not at all

15. Do career advisors actively discuss subject selection, future study and career options with you?

Subject selection yes / no

Future study yes / no

Career options yes / no

16. How helpful do you feel this advice has been to you in helping you make decisions?

very quite some little not at all

17. How much advice about CAREER SELECTION have you received from;

- a) Parents a lot quite a lot some a little none
- b) Other adults a lot quite a lot some a little none
- c) Teachers a lot quite a lot some a little none
- d) Career advisors a lot quite a lot some a little none
- e) Friends a lot quite a lot some a little none

18. How important is advice to you about CAREER SELECTION from you;

- a) Parents very quite some little not at all
- b) Other adults very quite some little not at all
- c) Teachers very quite some little not at all
- d) Career advisors very quite some little not at all
- e) Friends very quite some little not at all

19. How important to you are each of the following factors in making choices about your career? (Please circle one box for each factor).

	FACTOR					
a)	Number of jobs in the occupation	Very important	Quite important	Slightly important	Not important	Don't know
b)	How much money the job earns	Very important	Quite important	Slightly important	Not important	Don't know
c)	How easy it is to get a job in the occupation	Very important	Quite important	Slightly important	Not important	Don't know
d)	How much unemployment there is in the occupation	Very important	Quite important	Slightly important	Not important	Don't know
e)	Whether there is a balance in the age structure of employees in industry	Very important	Quite important	Slightly important	Not important	Don't know
f)	Whether there is a balance between male and female workers in the occupation	Very important	Quite important	Slightly important	Not important	Don't know
g)	How interested you are in the job	Very important	Quite important	Slightly important	Not important	Don't know
h)	How much satisfaction you get from doing the job	Very important	Quite important	Slightly important	Not important	Don't know
i)	The contribution the job makes to society	Very important	Quite important	Slightly important	Not important	Don't know
j)	The social status of the job	Very important	Quite important	Slightly important	Not important	Don't know

20. What does social status mean to you? Please place a mark on each line.

How much money the job earns? (extremely important) ----- (not important)

How trendy the job is? (extremely important) ----- (not important)

What other people think of the job? (extremely important) ----- (not important)

How much power the job holds? (extremely important) ----- (not important)

Other (please specify below) (extremely important) ----- (not important)

21. What jobs do you consider to have high social status?

SECTION 3: GEOGRAPHY AS A SUBJECT AND A CAREER

22. Please list 5 things that you think geography is about.

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____

23. Please list 5 words that you think describe geography.

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____

24. Geography is: (please place a mark somewhere on each line to describe geography)

- Easy ----- Hard
- Interesting ----- Not interesting
- Fun ----- Boring
- Relevant ----- Irrelevant
- Vocational ----- Not vocational

26. What do you think of geographical careers in general? Please circle a box for each factors.

	FACTOR									
a) Number of jobs in the field	Very large	Large	Average	Limited	Very limited	Don't know				
b) How much money jobs in the field earn	Very High	High	Average	Low	Very Low	Don't know				
c) How easy it is to get a job in the geographical field	Very high	High	Average	Limited	Very limited	Don't know				
d) How much unemployment there is in the field	Very high	High	Average	Low	Very low	Don't know				
e) How balanced the field is in age structure (balance of younger and older employees)	Very balanced	Balanced	Balanced	Unbalanced	Very unbalanced	Don't know				
f) How balanced the field is between male and female employees	Very balanced	Balanced	Balanced	Unbalanced	Very unbalanced	Don't know				
g) Interest in the field	Very high	High	Average	Limited	Very limited	Don't know				
h) Job satisfaction in the field	Very high	High	Average	Limited	Very limited	Don't know				
i) The contribution jobs in the field make to society	Very high	High	Average	Limited	Very limited	Don't know				
j) The social status of jobs in the field	Very high	High	Average	Low	Very low	Don't know				

25. What jobs do you think geographers do? Please list as many as you can think of.

- _____
- _____
- _____
- _____
- _____
- _____

SECTION 4: STUDENT BACKGROUND

27. How old are you? _____ yrs

28. Sex (M or F)? _____

29. In what country were you and your parents born?

- You: _____
- Mother: _____
- Father: _____

30. What language do you speak most often at your permanent home address?

31. What other languages can you and your parents speak?

- You: _____
- Mother: _____
- Father: _____

32. How much formal education do your mother and father have? (Indicate highest level only).

	Primary School	Some High School	TAFE or similar technical college	University	Don't know
Mother					
Father					

33. What is the present, or most recent full-time occupation of each of your parents?

- Mother: _____
- Father: _____

THANKYOU VERY MUCH FOR YOUR COOPERATION

APPENDIX C - TEACHER SURVEY

Perceptions of geography as a vocation: a study of secondary school students and teachers in the Illawarra and South East region of New South Wales

Heather Smith

Teacher Survey

Many of the questions in this survey can be completed by circling an answer, or by writing a number or one word or short answer.

If you have any questions while completing this survey, please feel free to ask.

Your participation in this research is voluntary, and you are free to discontinue at any time. The researcher assures you that all information collected will be kept confidential, and that your privacy will be respected. This survey does not collect any information that can be used to identify you.

By signing below, you indicate that you;

- Have read and understand the information sheet detailing the above-mentioned research project, and understand the procedures required, and time involved;
- Understand that your participation in this research is voluntary and you are free to refuse your participation at any time, and that a decision not to participate will not affect your academic standing or relationship with the University of Wollongong, and that you are free to withdraw your participation at any time, including after the research has begun;
- Understand that you will be asked to sign a consent form;
- Understand that you will be asked to complete a survey. Your contribution will be confidential and personal identification will not be possible from the data collected as part of the study;
- Understand that if you have any enquiries about the research, you can contact Heather Smith at hjs964@uow.edu.au and Associate Professor Chris Gibson atcgibson@uow.edu.au, or on (02) 4221 3448, or if you have any concerns about the way the research is or has been conducted, you can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on (02) 4221-4457.

By signing below I am consenting to completing a questionnaire. I understand that the data collected from my participation will be used for the purposes of a Bachelor of Science honours thesis, and possibly for other published studies such as journal publication, and I consent for it to be used in that manner.

Signed _____ Date _____

Name (please print) _____

Thankyou very much for your time and cooperation

SECTION 1: GEOGRAPHY AS A CAREER

1. What jobs do you think geographers do? Please list as many as you can think of

2. Other than those careers listed above, for which jobs do you think geography is a useful pathway?

3. Do you actively advise students to consider geographically based careers?

4. What is the basis for this advice?

5. Do you feel that students are aware of options for geographical careers? (Please comment)

6. Do you feel that teachers are aware of the options for geographical careers?

7. If not, what do you think needs to be done, and by whom, to increase teachers' knowledge of geographical careers?

8. Please rank what you think of geographical careers in general, in terms of the following factors.

a)	Number of jobs in the field	Very large	Large	Average	Limited	Very limited	Don't know
b)	How much money jobs in the field earn	Very High	High	Average	Low	Very Low	Don't know
c)	How easy it is to get a job in the geographical field	Very high	High	Average	Limited	Very limited	Don't know
d)	How much unemployment there is in the field	Very high	High	Average	Low	Very low	Don't know
e)	How balanced the field is in age structure (balance of younger and older employees)	Very balanced	Balanced	Balanced	Unbalanced	Very unbalanced	Don't know
f)	How balanced the field is between male and female employees	Very balanced	Balanced	Balanced	Unbalanced	Very unbalanced	Don't know
g)	Interest in the field	Very high	High	Average	Limited	Very limited	Don't know
h)	Job satisfaction in the field	Very high	High	Average	Limited	Very limited	Don't know
i)	The contribution jobs in the field make to society	Very high	High	Average	Limited	Very limited	Don't know
j)	The social status of jobs in the field	Very high	High	Average	Low	Very low	Don't know

9. What does social status mean to you? Please place a mark on each line.

How much money the job earns? (extremely important) ----- (not important)
 How trendy the job is? (extremely important) ----- (not important)
 What other people think of the job? (extremely important) ----- (not important)
 How much power the job holds? (extremely important) ----- (not important)
 Other (please specify below) (extremely important) ----- (not important)

10. What jobs do you consider to have high social status?

SECTION 2: SUBJECT AND CAREER GUIDANCE WITHIN THE SCHOOL

11. In this school, is career education integrated throughout the curriculum or is it a completely separate function? (Please give details).

12. Do students receive subject and career advice from the career advisor only, or do others in the school assist students with their decision making? (Please give details).

13. At what year level do students formally begin accessing subject and career advice and services?

14. Do any students consult you about subject and career choice?

15. If yes, what is the nature of the advice students are seeking? (Please give details).

16. What is the nature of the career advice that you provide students?

17. What do you think is good career advice to provide students?

SECTION 3: STUDENT DECISION MAKING

18. In your experience, when do students start shaping up their ideas about;

- a) subject choice _____
- b) careers _____

19. Do students' ideas about careers change much during their time at high school? How?

20. When do you think students finally decide on what they want to do after leaving school?

21. What do you believe are the key influences on students' thinking and decision making about subject selection and careers?

22. Who, or what do you think is the key to helping young people decide on career options?

23. Are there any senior school subjects that you think are particularly useful in helping students to get a job? (Please list and give reasons)

Subject	Reason
a) _____	_____
b) _____	_____
c) _____	_____
d) _____	_____

24. Please rank the following factors in terms of their importance when you advise students about subject selection.

How important are the following;	Extremely important	Very important	Important	Not very important	Not important at all
a. The subject is one that the student enjoys.					
b. The subject is one that the student finds interesting.					
c. The subject is relevant to the work the student wants to do in the future.					
d. The subject is one that is necessary for a course that the student plans to study in the future.					
e. The subject is one that the student finds useful and practical.					
f. The subject is one in which the student usually gets good marks.					
g. The subject helps a student get a good UAI.					
h. Marks in this subject are used for university admission.					
i. The student's parents wanted them to do this subject.					
j. The student's teachers/career advisor wanted them to do this subject.					
k. The student has a friend/friends doing this subject					
The subject is part of a recommended program of study.					
Other. Please specify					

SECTION 4: BACKGROUND

25. What age are you? (please circle) 20 – 35 36 – 50 51 – 64 65 +

26. Sex (M or F)? _____

27. What is your position at the school? _____

28. What do you teach? (years and subjects) _____

29. Is this position permanent/temporary/casual? (please circle one)

30. Is this position full or part time? (please circle one)

31. For how long have you been employed in this position? _____

32. Please list other teaching positions that you have held in your career.

Title	Details of Position	Length of Employment	Education System (public, catholic or independent)

33. In total, how many years have you worked as a teacher? _____

(please see over)

34. What educational qualifications have you completed?

Qualification	Year	Institution

35. In what country were you born? _____

36. If born in a country other than Australia, how many years have you lived in Australia?

Please add any other comments that you feel appropriate:

THANKYOU VERY MUCH FOR YOUR PARTICIPATION