Sage Handbook of Human Geography

Educating

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This chapter considers the nature of what it is to 'educate geographically', how this has developed historically, its impact on students' world views and experiences, and what key challenges and opportunities face contemporary geographical education. These questions will be discussed in relation to signature pedagogies (Shulman, 2005) and an exploration of the following key themes: the relationship between viewing the world and world view; fieldwork and geographical knowledge, skills and praxis; implications of Information and Communications Technology for the production and consumption of geographic knowledge; and whether an 'authentic' geographical education can prepare graduates for living responsibly in a (super)complex world (Barnett, 2000). We contextualise these themes in the discipline's intellectual heritage, but we also relate them to constraints imposed by evolving government policies. We are aware that we offer an inevitably selective agenda, and we are equally conscious that the discussion is driven by Anglo-American literature, practices and policies, which marginalises geographical work in other languages (Garcia-Ramon, 2003). We have endeavoured, nevertheless, to draw on a range of international examples and studies. In addressing the issues, we include a range of undergraduate and postgraduate student views from our own department, in order to gain some insight into what it is to study geography today and how contemporary students imagine, think and act geographically. Universities have recently been defined as 'a home for attempts to extend and deepen human understanding in ways which are, simultaneously, disciplined and illimitable' (Collini, 2012). The university setting is an important focus of discussion here, but it would be a mistake to confine consideration of educational experience to universities, or even periods or spaces of formal study. Education is recognised increasingly as a lifelong endeavour which takes place in many contexts, such as the home, commune, street, social club, workplace and time-space of travel.

Introduction

The advent of the 'spatial turn' across the social sciences and humanities suggests that 'thinking geographically' has gained new critical purchase as other disciplines discover the significance of space, place, geographical patterns and relationships (e.g. see Knott, 2005

on religion; Middell and Naumann, 2010 on history). Indeed 'other disciplines have increasingly come to regard space as an important dimension to their own areas of inquiry' (Warf and Arias, 2009: 1). Simply to 'think spatially' however, is not inherently virtuous (deterministic and dehumanising spatial models and the geopolitical implications of *lebensraum* spring to mind). So what is it that geography adds to understanding the world, and how is that communicated via educating geographically? As Warf and Arias further note (2009: 1): 'Geography matters, not for the simplistic and overly used reason that everything happens in space, but because where things happen is critical to knowing how and why they happen'. While these concerns are inevitably a professional preoccupation for those of us labelled and practising as 'geographers', 'human geographers', as an intellectual community, draw widely from other disciplines in addressing these issues and in turn, speak to a variety of other disciplines concerned with economic development, tourism, power relations and governmentality, urban and rural regeneration, social and cultural practices, environment and sustainability - to name but a few. Thinking geographically, it seems, is always to be informed by dialogue.

Thinking and doing geographically

Part of geographical dialogue is with contemporary contextual factors such as changes in economic climate, government policy and technology (and we shall return to these). But part of the dialogue is also with the discipline's past. 'Studying the history of geography illustrates ways in which geographical knowledges have been accrued, validated and challenged; how they have been shaped by national or regional scholarly traditions and manipulated to fit the ideological needs of other agents such as the state or commerce' (Maddrell, 2009a)[i]. The early modern universities (c.1580-1887) of Europe and Britain afforded coherent (if not departmental) contexts in which geography was taught, in both a descriptive/historical and mathematical conception. Geography teaching demonstrated strong connections with other subjects and, viewed from this perspective, geography can be implicated in some of the most profound shifts in educational and societal practice in post-Renaissance era (Withers and Mayhew 2002). The concretisation of geography as a stand-alone discipline within European universities and learned societies in the late nineteenth and early twentieth century was inevitably bound up with contemporary state interests in territorial security and empire, and private interests in commerce (see Bell et al., 1995; Driver, 2001; Godlewska and Smith, 1994; Godlewska 1999; Heffernan 1996; Hudson 1977; Maddrell, 1996, 1998, 2007). For example, John Scott Keltie, in his report on geographical education to the UK's Royal Geographical Society, noted that the subject was to be found at the core of military academy training across Europe (Keltie, 1885). This meshing of interests impacted on the *raison d'être* for the emerging school and university discipline of geography, with the

subject's utility being part of the rationale for its inclusion in the state syllabus in schools and for the creation of dedicated degrees and departments in geography in universities and colleges. The British government's desire to promote a sense of imperial citizenship to working class children can be seen in the 1885 guidance to school inspectors in England and Wales to encourage the teaching of emigration as an 'honourable enterprise'. The geography curriculum was not dominated by this ideology, but it was nonetheless an effective vehicle through which to communicate this message, especially to older pupils who were about to embark on their working lives (Maddrell, 1996; Walford, 2001). Geographical education could thus be seen as a mainstay of commerce, a military and geopolitical tool, a means of domestic governmentality, and a means of claiming, maintaining and profiting from Empire. Thus for the USA, Russia, Britain and European powers, it paid to study geography in the *fin de siècle*. Nonetheless, it was also always more than this; there was 'pure' scholarly interest and fervour to communicate all types of geographical knowledge and understanding (Hudson, 1977; Livingstone 1992).

It has been argued that it was a desire to distance the subject from the imperial project which caused European geography to turn its back on its global agenda (Bonnett, 2003). Undoubtedly, there was a shift in the discipline's focus in the first half of the twentieth century, but this reflected a conceptual and methodological shift to the regional approach within the European discipline. Geography texts and curriculum in schools were already less jingoistic by the interwar years and university geography courses' connections to empire were always more complex, tenuous and sometimes oppositional, especially when the regional approach grew to dominate pre-1945 European geography epistemologically and methodologically (Clout, 2003; Maddrell, 1996). While this accommodated the study of local geographies, it also encompassed international regions, and ultimately the whole globe. At the same time, North American geographical discourses were more oriented to understanding the environment and landscape, incorporating human ecology (while moving away from environmental determinism), chorological studies (much influenced by Carl Sauer), historical geography and applied geography (Martin, 2005a). In the new Soviet Union, the centralised state's need for applied knowledge, e.g. for industrial and urban location, motivated the support for geographical education (*ibid.*).

While the era of geographical exploration had largely been limited to the rich, adventurous agents of the state and early colonial settlers, the regional approach engendered a deep-rooted commitment to *fieldwork* within geographical enquiry (Martin, 2005a). While the defining characteristics and scale of regions were debated (e.g. Vidal de la Blache's *pays*, A.J. Herbertson's natural regions and Hilda Ormsby's regions delimited by drainage basins),

the paradigm focused on the relation between people and their environment, and crucial to both geographical epistemology and pedagogy, this included the local region. Fieldwork took researchers, pupils and students out of the educational institution and into the wider world, including the immediate locality, generating a whole body of geographical work on the home area (e.g. Patrick Geddes' Outlook Tower and field parties in Edinburgh (Withers 2001); *heimatkunde* in Germany and *hembydsforskning* in Sweden (Buttimer and Mels, 2006; Martin, 2005a)). This approach provided a rationale to schools, teacher training colleges and universities for no- or low-cost fieldwork, removing the financial requirement for travel, although field research-dedicated groups such as the Le Play Society and later Geographical Field Group provided field study weeks in the UK and Europe between 1920s-1960s. The latter attracted lecturers, school teachers and others interested in geographical enquiry, providing an opportunity for organised educational leisure and often novel travel and study abroad, a combination which attracted a significant number of women participants (Maddrell, 2009b). This experience and knowledge can be seen as an example of the continuing professional development of geographical educators at this time, with knowledge and techniques fed back into lessons and lectures for school and university teachers, as well as reaching wider audiences through talks given by field party participants to local societies and institutions.

Fieldwork, championed by many of the inter-war geographers, 'has always been central to the enterprise and imaginary of geography' (Bracken and Mawdsley, 2004: 280) and hence to 'educating geographically'. Of course 'going outside' in and of itself is not a panacea; it does not necessarily result in accessing 'truth' (Nairn, 2005). Leaving the classroom is about 'viewing the world', but it is also about being in, experiencing and responding to that world. This experience has an important embodied dimension (e.g. consuming local food, carrying equipment cross country, living communally, participating in community practices and events) as well as an emotional one. As Jan Monk (2000) notes, fieldwork should lead to empathy; seeing through others' eyes, resulting in a better understanding of communities encountered; but in practice it can result in what Urry (2002) described as the 'tourist gaze', whereby others are Othered, and provoke paternalist views on the part of students by dint of Eurocentric and or classed perspectives (Nairn et al., 2000). Those aspects of fieldwork which emphasise physical attributes and competitive masculine norms, as well as those which privilege a 'masculine gaze', have been critiqued as masculinist (Bee et al., 1998; Rose, 1993; Sparke, 1996); but there are also fieldwork contexts in which women students and scholars of geography have thrived historically and in the present day (Bracken and Mawdsley, 2004; Maddrell, 2009b). This is the challenge for geographical educators: to facilitate fieldwork which avoids the pitfalls of masculinism, ableism, Eurocentrism and

paternalism, and instead blends knowledge, experience, emotions, analysis and reflection. Indeed, some of the most effective (and affecting) fieldwork can be achieved locally, with migrant communities for example q (Nairn et al., 2000).

Student 'P' explains what studying geography has meant to her and the centrality of fieldwork to that experience:

> Geography helps us understand the world today because it links together many different disciplines and ideas. It helps us to better understand history and how the earth was formed; it helps us to better understand our relationships with others around the world, and it helps us to understand the future of how the earth will be. It is a contemporary science that is dynamic and continually changing, just like the world in which we live.
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> I have always enjoyed studying about places and this inspired me at A-level to take on the subject of travel and tourism as well as Geography. This was a great experience for me and helped me to better understand what makes certain places special. It changed my view of geography in that it made me want to get out into the world and actively engage with Geography, rather than study from a book. I [really] feel that for Geography to be fully appreciated it should be lived. This is why for our A level Geography trip we chose to visit [X] Field Centre [in Y] and truly explored our own local Geography. It was perhaps one of the defining moments of my studies thus far.
>
> (Student P, Year 1, Female, Aged 18)

Geographical fieldwork has thus centred on viewing the world first hand, often through studying new places and ways of life. Whether of one's immediate locality or further afield, thinking geographically is also about a world view and seeing things differently: seeing people and environments; experiencing the world; potentially making links between the locality and global processes and relations, and appreciating something of one's own place and responsibility in all this.

Geographical claims to overview and synthesis of people and environment could verge on a sense of 'God's eye view' or masculinist gaze critiqued by feminist and other scholars of the social construction of knowledge as partial (in both senses of the word), patriarchal, classed, or racialised (for example see Rose, 1993). So what difference does it make to imagine, think and act geographically? It has already been mentioned that geography is in dialogue, making for a dynamic discourse that reflects both changes in thinking and methodology, but also shifts in human agency and relationships. Texts have been a mainstay in geographical knowledge and education, but have sometimes struggled to keep pace with the challenges of a changing world. A sense of geographical knowledge as a 'moving target' was epitomised by nineteenth-century atlases which omitted dates from their frontispiece because knowledge new to Western science was constantly emerging, as were territorial claims to the 'New World'. The context may be less territorial, but the sense of a dynamic

world continues apace today and the value of a geographical perspective is captured by student ‘Q’:

> Geography enables us to make better sense of the world by recognising, and bringing together, the different perspectives which dominate a range of disciplines within the natural and human sciences, including history, sociology, anthropology, environmental science. This helps us to describe the world in more detail, giving a deeper and more nuanced understanding of both space and time, and the elements which contribute to everyday experiences at a range of scales. The incorporation of perspectives from other disciplines also contributes to the reflexive nature of geography: value-clarification in the production of knowledge contributes to appreciation of perspectives, values and bias in our understanding of the world. Studying geography is rather like attempting to complete a jigsaw puzzle whose picture represents the world: we can never complete the puzzle because we are unlikely to hold all the pieces at the same time, and how the pieces fit together is ever-changing as is the overall picture. However, geography’s ongoing attempts to make sense of the puzzle are what help us to understand the world.
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> Geography’s use of multi-media, such as maps, charts, images and words, for conveying a ‘picture’ of the world, also makes it a flexible and accessible discipline for different perspectives to be represented in a variety of contexts, for different audiences.
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> (Student Q, Taught MA, Female, Aged 52)

Ultimately, the students contributing here point to their own changed world view as a result of being educated geographically and their transformative learning experience:

> Studying geography has made me more aware of the ways in which perspective and bias influence our view of the world, and how these values are products of our own sense of ‘place’ in the world, both as individuals and as members of communities such as the local community where we live, or communities of common interests. Specific topics have had particular influences on the way I view the world, for example studying the history of rural development in less economically developed countries has highlighted how we bring our own values to study, research and practice, sometimes without due regard for the values of the research subjects. This topic has also made me more aware of the way in which inequalities in the world may be compounded by not recognising and appreciating the centrality of cultural values and sense of identity which influence our everyday lives. Studying geography therefore seems particularly relevant as the process of globalisation continues, with the potential to erode national and local values and identities. The greatest impact studying geography has had on my life, is that I am less accepting of some aspects of the way the world is today, while being more accepting of others; geography provides partial answers to some questions while raising more questions; geography and its study are ongoing processes.
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> (Student Q, Taught MA, Female, Aged 52)
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> I feel that the appreciation for space has made me into a far more liberal and understanding person. In particular, my views on the ‘homeless’ and social order and mobility have changed considerably. I now understand that even without a physical residence (considered the social norm), those who live on the streets are not necessarily ‘homeless’ as they find value in other spaces, constructed by a family of other people, and artifacts in the same situation as them. I feel this is an important step in understanding and tackling street poverty, which an alarming proportion of people find themselves in at some point in their lives. Instead of taking a pessimistic view towards these people, I feel it is better to understand that they are functioning in the same ways as people higher up on the ‘socio- economic ladder’ and therefore hold the same potential as anyone else. I now translate this to all geographical scales, from household issues to global crises'. I view everyone as having equal potential, but

> they are sometimes handicapped by the geography of their homes. With this understanding, I feel that solutions to problems must be relevant to both varying physical and social spaces and we must appreciate that everyone is equal, regardless of the social restrictions of the globalized, capitalist world.
>
> (Student R, BA Year 1, Male, Aged 20)

In their responses, Student 'Q' and Student 'R' point to the significance of values in their geographical education and consequently how they now view the world. Values can be embedded not only in the subject content of, for example, globalisation, environmentalism, sustainability, cultural tolerance and citizenship, but also in the wider context of both educational institutions and teaching practices (Jackson and Maddrell, 1994). Student-centred active learning has long been associated with good educational practice internationally and is associated with formats such as inquiry- and work-based learning, decision-making debates, role plays, field and archive studies (see Gold et al 1991; Healey et al 2010). These inquiry-based learning approaches encourage students to recognise the social construction of knowledge and to explore and challenge social and personal values and preconceptions. In the 1990s Frances Slater made the case for greater attention to moral understanding and cultural sensitivity in a piece entitled 'Education through Geography' (Slater, 1994: 147). She argued that a 'stronger sense of morality and culture should be integrated with geography's sense of societies, spaces, places and environments'. David Lambert (2003: 47) has noted that: 'Teaching geography for understanding requires students to be taught how to assimilate values as a variable - facts also do not exist outside a values frame'. Developing both factual knowledge and attitudes and values enables students educated *in* and *through* geography to understand the diverse, complex and changing world from alternative perspectives. They are capable of making their own value judgements and distinguishing between useful insights and the positionality of any given data source. This combination of reason and emotion in higher education pedagogic publications was deemed to be quite rare (Monk, 2000), but can be found in geography lessons in schools and university lectures and seminars where geographers are committed to praxis, linking theory, practice and ethics (Kobayashi and Proctor 2003). For example, those engaging reflectively with the United Nations' Decade for Education for Sustainable Development (see Elliot, 2010-11) and contemporary issues such as migration and multi-cultural citizenship (Sarno 2011); as well as increased attention to pedagogy by feminist, emotional-affective and participatory scholars (see Davidson et al., 2009a, b; Pain, 2009), have addressed links between the factual and moral content of curricula.

Critical thinking extends to the self as much as it does to policies, theories or sources. The experience of geographical education should engender reflexivity, which 'calls upon

researchers to reflect on their research relationships. In so doing, it aims to ensure that due consideration is given to the impact of unequal social relations, whether of gender, race, class, age or disability, and to the risks of reproducing relations of exploitation or disempowerment within the research.' (Bondi, 2009: 328). Bondi continues, however, that 'Importantly, reflexivity is more than reflection'; as valuable as it may be, constantly reviewing one's relation to experience can be uncomfortable and reflexive praxis can be a 'double edged sword' which may reinforce gendered stereotypes. Despite these potential pitfalls, reflexivity is widely adopted in transformative learning and qualitative research, including Participatory Action Research (PAR). 'Engaging in PAR always involves (or should involve) confrontation and reappraisal of our own positionalities, values and sets of ethics' (Pain, 2009: 83) - and this continues to be at the heart of the research and educational practice of many critical geographers. This form of dialogue with self as well as others returns us to geography and the art of conversation.

In an echo of Warf and Arias' (2011) analysis, our final student contribution uses the experience of a visit to a Cornish garden to identify the why, how, when and where of geographical enquiry. Rather than 'the view from everywhere', this is an expression of geographical relationships storying a specific place and its socio-economic, cultural and political relations:

> The academic study of both theoretical and applied geography during my degree programme has dramatically changed the way in which I view the world. Reflecting on my world vision before my studies I can now appreciate that I would often take things for granted, I would rarely ask the never ending question of why, and on the occasions where reasonable justification was not enough to appease my curiosity I would seldom pursue the issue with the same question. Studying 'Geography' for three years (the scholars of which at best struggle to describe and at worst simply can't describe) opens up a curious insight into not only the why of things, but also the how, the when, and most crucially for the geographic mind, the where. Today there is seldom a situation, a location or a person even, that for me does not shine bright with the geographic good stuff.
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> The 'lost' gardens I visited over Easter show an historic past of cultural class and distinction where fortune in life was a gift borne from the relatively lucky situation of being born to a rich family. In this era, social mobility was barely conceived let alone pursued in public policy as is today. The wealth of this social elite enabled global travel to 'new worlds' where strange and beautiful flora was brought back to be recreated, today convincingly mimicking the faraway lands that these flowers, plants and trees were originally created. Yet now this wonder serves the needs of affluent middle class tourists (and mature geography students) seeking escape to the countryside from the urban race - Why? Possibly because the city is crowded and fast-paced and rarely this green. Perhaps these visitors hark back for the days when things were slower and apparently simpler, before wireless technology, global finance and global war. Yet the lost gardens represent an ethos of self-sufficiency which today is pursued under the guise of sustainability.
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> The fishermen at the social and hydrological bottom of this Cornish valley know of sustainability because the fishing grounds that were once so bountiful are today threatened by over-fishing and depleted stocks. As these common pool resources become threatened so too are the livelihoods of the townsfolk who rely on the resource - from the Italian, Indian,

> Chinese, Cantonese and Thai restaurants that feed the tourists who stay in the hotels and B&Bs, to the dock workers, the fish market workers and the engineers that fix the boats, not to mention the slowly dying breed of local fisherman; this role slowly (or rather quickly) being over taken by global forces, international agreements and worldwide-competition. So what does all of this tell us? This example from a small part of a valley in southern Cornwall scratches the surface of what geography is. To the untrained geographer it is the overwhelming inclusion of everything, everyone, and everywhere: a mind boggling concoction of endless sub-categories and sub-sub-categories. And to some extent it is. But essentially geography is about interactions; interactions between people, interactions between places and interactions between people and places. The movements, connections and changes to these interactions continue throughout the globe. If we imagine we were zoomed in on Mevagissey on Google maps, let us now slowly zoom out. The familiar coastlines of what is Britain become apparent; think of all the interconnections across that space. Keep going, Europe is now visible, Asia the Americas, all interacting at multiple scales.
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> Ultimately, studying geography ends with the understanding of what geography is. It's a bit like Neo at the end of the Matrix film, once you can see what geography is, you can see that it's everywhere.
>
> (Student S, BA Year 3, Male, Aged 31)

As highlighted in the observations above by student 'S', an inescapable aspect of contemporary life is the (uneven) process of globalisation, which goes hand-in-hand with ever-present and all-pervasive technology. Globalisation and Information and Communications Technology (ICT) characterise and impact upon contemporary students' experience of geography in terms of subject matter and the spaces of virtual social, economic, cultural and political engagement. The challenges and opportunities ICT presents for pedagogy are discussed below, but at this point we want to signal the impact on viewing the world and world view, with particular reference to extended social networks, virtual worlds and immediate access to multiple and competing sources of knowledge. ICT can be seen as a democratisation of resources for students, but as current debates on open access to academic publications demonstrate, it also hides individual, institutional and national inequalities. In conjunction with economic recession and political drive, social networking has facilitated active participation and protest on the part of students and others (think of the Arab Spring and Occupy Wall Street). But use of ICT also requires critical evaluation of the origin and relative reliability of sources and an awareness of the simultaneous dominance of English language sources and the limitation of many of those English language sites. From a privileged MEDC perspective, the world seems accessible and interactive, but, in fact, huge inequalities within and between countries persist. These include commercial and state monitoring of the web, and uneven regional and international access to the internet, to say nothing of how this reflects access to wider economic, health - and educational - resources. Here is the ultimate challenge for educating geographically: understanding socio-economic, cultural and political difference, evaluating the complex and simple causes of inequalities, and responding intellectually and personally to them: what has been described by one

geographer as ‘keeping conversations going’ in the interest of local spaces and practices of (even modest) ‘progress’ (Livingstone, 2006: 587). As another states, ‘sustaining conversations and a search for truth - even if that truth keeps disappearing over constantly expanding intellectual horizons or is repeatedly covered over by political contingency ’ is important in providing ‘small spaces of hope and ... possible moral, material and political achievements’ (Lee et al., 2009: 4). This must ever be with an awareness that for many in the Anglophone world, any educating conversation will be limited linguistically, which in turn will inhibit international dialogue and collaboration within the geographical community (Monk and Garcia-Ramon, 1997). Alongside this however, it is important to recognise that regional and global movements of migrants are increasing not only the multi-cultural but also the *multi-lingual* character of European and North American countries, with Spanish set to overtake English as the majority language in the USA by 2020 (Shin and Ortman, 2011). These demographic changes suggest that current Anglophone dominance of educational debate and resources may be increasingly de-centralised in the future. Thus both the content and medium of geographical knowledge needs to be flexible in order to demonstrate relevance and respond to contemporary and future shifting socio-economic, cultural, environmental and geopolitical challenges. Geographical literacy offers important conceptual and practical tools to help students, policy makers, businesses, NGOs and the general public face these challenges (Bednarz et al. 2003; de Blij 2005). We now turn to examine what constitutes that geographical literacy today and different mechanisms for its effective communication.

Educating geographically

Castree (2011: 298) asked “What ‘knowledge’, ‘competencies’ and ‘skills’ are characteristic of a geography graduate? What is the substance of a rich and rounded ‘geographical education’?” While the preceding discussion has addressed the theme of ‘educating geographically’ in relation to ‘thinking and acting geographically’, this section reflects on the pedagogic implications of these observations by summarising the nature and purpose of geographical education today, and delineating some of the key challenges and opportunities faced in delivering effective geographical education in the future. It is clear that geography in higher education has been shaped by a rich intellectual heritage that extends within and beyond the discipline. It is not always so clear how this weight of history has been translated into the practice of geography learning and teaching.

The hallmarks and purpose of a geographical education

During an Economic and Social Research Council (ESRC) sponsored ‘Engaging Geography’ seminar series in the UK between 2008 and 2010, one year 7 school student (aged 11-12)

described geography as ‘everything from the edge of space to the end of my pencil’. This description acknowledges the broad identity of the discipline and the over-arching importance of scale, which acts as a lens to focus the geographical imagination on different issues and processes at varying levels of resolution. The comment hints at the interactions between the physical and human environments as the embodied geographer (armed with the most relevant - and perhaps most basic - educational tool) observes the world in order to identify, catalogue and understand relevant societal and environmental issues.

In common with the student and his pencil, Bonnett (2008, 2012) argues that geography is ‘the world discipline’, offering knowledge that is necessary for the human species not just to thrive, but to survive. A geographical education helps us to recognise and understand complexity and change in the world in which we find ourselves. It offers a synthesizing framework that helps us make sense of the world’s diversity and dynamism, and to understand ourselves relationally in this world, including our ability to sustain or to destroy life on Earth. This final sense lends urgency to our work on human impact, global conflict and environmental management. Geography is a linking discipline, connecting the physical and social sciences and employing a range of epistemologies and methodologies. Students of geography examine issues such as understanding and responding to environmental change, promoting sustainability, recognizing and coping with the rapid spatial reorganization of economy and society, and leveraging technological change for the benefit of society and environment (Sui, 2011). In short, being geographically literate can help us to understand contemporary patterns, challenge popular assumptions about environment and society and help solve some of the most pressing problems of our time.

What may be distinctive about geography education, it seems, is enabling a holistic understanding of complex problems by practitioners and the development of an ability to make connections between phenomena across different scales. This is not a new claim (see, for example, Keltie, 1885; Mackinder, 1887). The focus emanates from geographers’ adoption of an empirically based yet theoretically informed synthesizing approach, seeing for themselves and making critically aware judgements (notably related to fieldwork) and, from this, using their repertoire of relevant skills, knowledge and competencies to render them employable as morally informed global citizens (Stannard, 2002; Whalley et al., 2011).

We might go so far as to proffer that a geographical education offers knowledge, skills and frames of understanding to help us comprehend, make sense of and live more comfortably in a supercomplex world (Barnett, 2000). In such a world, one is faced with uncertainty, unpredictability and contestability, concepts that require the deployment of multiple

frameworks of understanding, self-identity, reflexivity and action. Offering practical skills, reflective understanding and critical self-knowledge, a geographical education is an education for being in this changing world.

Key challenges facing geographical education today

If geography education is to thrive in higher education today then it must be seen as a relevant choice for post-16 study. This relevance, grounded in the self-critical development of the discipline (outlined above), is mobilised through the provision of programmes of study in higher education that offer relevant knowledge, skills and competencies. Indeed, in some national contexts there is a strong emphasis on applied knowledge. In the USA National Geography Standards refer to 'Geography for life' (Bednarz et al. 2003). In Slovakia, the Educational System Reform similarly underscores the need for *learning for life,* with the curriculum tailored to practical use, which in the case of geographical education translates into map skills, planning and problem solving for 'real civil situations' (Cizmarova, 2008). In Australia, the Government Department of Industry, Innovation, Science, Research and Tertiary Education supports the higher education sector to educate the future workforce and develop future leaders, playing a key role in the growing knowledge and innovation based economy of the country (http://www.innovation.gov.au).

But do prospective post-16 students and educators in all countries recognise the relevance of the discipline in contributing to socio-economic goals? As Gerber (2001) notes for Australia, positive public perception of the importance of geography for society needs to be promoted carefully in the education sector if the discipline is to fulfil its potential. Yet this goal has been hampered somewhat by the numerous mergers between geography and environment studies that took place in Australian universities during the last decade of the twentieth century (Harvey et al., 2002). These mergers were led by a genuine academic rationale for consolidation in some instances, but were often driven by financial savings, internal university politics, and staff changes and mobility. Despite the work of leading figures in the American Association of Geographers (see Solem et al. 2012), commentators suggest that while a liberal tradition in geography education has been strong in the USA, the approach to educating professional geographers has been less well developed. Erickson (2012: 15) notes: 'Too many geographers would find it difficult to articulate clearly the essential knowledge and skill attributes of a well-educated professional geographer in a way that would resonate with non-academics'. However, he goes on to say that Geographic Information Sciences (GIS) and environmental geography have helped to position the discipline much more strongly within the academy and have opened up new horizons of opportunities for the professional practice of geography. This supports studies in other

countries which suggest geographical skills such as GIS enhance geography graduate employability (Brown 2004).

A familiar challenge, but one that gains renewed credence in the current economic and policy climate, is the need to transcend disciplinary myopia. In the UK context, Castree (2011) identifies three important external drivers of change currently affecting English higher education. These are the poor state of Britain's public finances, publication of the Browne Review (Browne, 2010) and the resultant Government White Paper (BIS, 2011), and the annual National Student Survey (NSS). These forces are creating an increasingly competitive higher education market, which whilst rendering student choice more meaningful and making educational provision more transparent and accountable, simultaneously marks the neo-liberal marketisation of higher education, shifting from the European model of HE provision to closer to that of North America. Erickson (2012) identifies competition, technology, globalisation and sustainability as the key contemporary influences on higher education in the USA; forces which he contexualises within prevailing 'financial and accountability crises' (Erickson, 2012: 12). As a result, universities in the USA are increasingly required to measure student learning outcomes, retention and graduation rates, faculty performance, student satisfaction and alumni employment. At first glance the emphasis on understanding local environments, processes and policies might be seen as a gateway to employment, while understanding global issues might be viewed as irrelevant to the effective development of the individual in his/her immediate life world. But, a geographical education that acknowledges the importance of both scale extremes can shape individuals who comprehend what the forces of globalisation mean for them in an inter-connected world (Gerber, 2007). Decisions taken at the local level have global consequences, while decisions at global levels have differential effects in different localities (Jackson, 2006). Thus, echoing long-standing educational models based on comparative knowledge, Bonnett argues for beginning with the lived experiences of young people and moving out to their global inter-relations in an effort to ensure that 'an antipathy to insularity and parochialism [remains] ... the defining attitude of the discipline' (Bonnett, 2003: 56).

Evolving financial and policy environments might prompt greater interaction between school and university geography staff. There was a time in the early 1960s when innovative academic geographers in the UK linked university and school geographies in a variety of ways, e.g. summer schools on emerging quantitative techniques (Sidaway and Johnston, 2007; Taylor, 2005). Inherent links between the two sectors were still strong in the mid 1980s, but by the early 1990s, a 'great divide' had developed between geography in schools and higher education. This can be attributed to the dual government interventions in schools

and universities, firstly implementing a national curriculum in the former and initiating a reward-based review of university research in the latter. This generated a research oriented target-driven academic culture (Bonnett, 2003) perceived as detrimental to the future health of the discipline in both sectors (Goudie, 1993); but the impact of the introduction of a narrow and prescriptive geography syllabus in the national curriculum should not be underestimated, this served to reduce both teacher autonomy and the scope for cascading innovative university research in to the school curriculum. The legacy of this divide continues to be debated (Castree et al., 2007; Marriott, 2007) and addressed via dialogue between university and school geographers (Bonnett, 2003; Stannard, 2003; Hill and Jones, 2010); and through national (Yarwood and Davison, 2007) and international networking and training (Bednarz et al., 2000). These have served to 'reconnect' academic and school geographies (Pykett and Smith, 2009) and generated potential collaborative ventures that seek to embed a collective vision of (public) geographies into the future (http://engaginggeography.wordpress.com/2-seminars/2e-geographies-in-schools/). Ironically, a recent recession-driven government funding imperative to demonstrate academic engagement with wider non-academic audiences and the applied 'impact' of research has prompted a number of university geographers to engage more with geographical education in schools. The challenge for geographers to translate theorised academic research into accessible and interesting outputs which will speak to public audiences is ongoing. Nonetheless, the drive to wider/popular 'geographical education' has led to an interesting alliance of geographical societies, praxis-oriented scholars (e.g. feminist, Marxist and participatory geographers), policy-oriented scholars (such as urban planners) and government funded bodies, working with public groups to collaboratively shape and communicate academic research more widely (Fuller and Kitchin, 2004; Maddrell, 2010; Pain et al., 2011).

Greater engagement between university and school sectors may be further encouraged by the increased competition affecting Anglo-American higher education identified by Castree (2011) and Erickson (2012). However, this will also be tempered by the pressures of 'demand-led provision' of degrees (Saunders, 2011), student satisfaction and its links to recruitment (Castree, 2011), as well as the 'crude disciplining of scholarship by regulative audit' and consequent competition for scarce and unevenly distributed academic resources (Lee et al., 2009: 3). In the wider European context, the Bologna Process, intended to promote lifelong learning, employability, student centred- learning, pedagogic innovation, international mobility and openness, has in practice often lacked guidance for delivery and resulted in the application of blunt mechanistic transparency tools (Wastl-Walter and Wintzer, 2012).

Overall, heightened competition for students in an era of near global recession means universities need to be pro-active in communicating how their courses lead on from and develop the knowledge, skills and competencies derived from school level education. In turn, more flexible curriculum frameworks for geography delivery in schools could give school teachers greater freedom to translate concepts and processes into more innovative schemes of work across all key stages, invigorating the delivery of geographical knowledge and skills in schools.

Key opportunities facing geographical education today

In this section we will interrogate more deeply what it is to educate geographically by examining what are described as the discipline's signature pedagogies. These are 'types of teaching that organise fundamental ways in which future practitioners are educated for their new professions' (Shulman, 2005: 52). We begin with a broad examination of informal learning beyond the curriculum and progress to the explicit signature pedagogy of geography; fieldwork. We then discuss spatial information skills such as GIS mapping and geospatial visualisation (leading to a profound shift towards volunteered geographic information and citizen science) before considering students as authentic researchers within and beyond the academy. Such signature pedagogies offer students the opportunity to move along the continuum from disciplinary novices to disciplinary experts.

Educating geographically extends beyond the boundaries of universities, colleges and schools. Indeed, it might be argued that a fundamental opportunity presents itself in terms of the increasingly expanding and flexible spaces of geographical learning. Such informal learning spaces extend into the everyday spaces in which students live and learn to include numerous components of the built and natural environments, from work places, through community woodlands, urban parks and forests, to the home and, even, the family car (Ward and Fyson, 1973; Boud and Middleton, 2003; O'Brien, 2009; Cook and Hemming, 2010; Holloway et al*.,* 2010; Kraftl, forthcoming). In such environments, students can feel less intimidated than they do in formal settings, released from the regulations of curricula and guided more by experiential learning that is shaped by inter-connections between a multiplicity of peers. There are, no doubt, many questions concerning the materialities and pedagogic practices that result from alternative learning environments. These comprise just part of the agenda of the emerging field of education geographies (Collins and Coleman 2008; Holloway et al*.,* 2010; Healey et al. 200).

There are equally important lessons to be learnt about informal learning from research undertaken in schools. Evaluating the geographical knowledge of children aged 5-11 years of age, Martin makes a distinction between informal everyday geography, or ethnogeography, and more formal academic geography (Martin, 2005b; 2008; Catling and Martin, 2011). She goes on to propose a dialogue between these two ways of knowing in which each has value and from which each can learn and develop. While academic geographical research increasingly engages with the everyday (e.g. Holloway and Valentine 2003), Martin's observations still have resonance for university pedagogy: 'When the everyday is in dialogue with the academic there is the possibility of the creation of new knowledge that can give learners a sense of social and environmental agency' (Martin, 2008: 441-442). Uniting formal and informal learning environments in higher education can engender a relevant curriculum that incorporates reflection on the culture of everyday experiences (not necessarily the mundane and local). Furthermore, this can support the production of 'powerful knowledge', where theoretical concepts are applied to everyday experiences (Young, 2008). In this way, geography teaching at all levels can create transformatory knowledge, providing students with an increased ability to comprehend and engage in political, moral and other debates.

The space beyond the classroom that has been privileged traditionally as a locus of learning by geography educators around the world is the field. The field can be defined as 'any place where supervised learning can take place via first-hand experience outside the constraints of ... the classroom' (Lonergan and Andresen, 1988: 64). Undergraduate geography field courses have evolved over time pedagogically, progressing from detached and passive observation on the part of students to their active participation in reflective problem-based learning, often directly engaging in the research process which facilitates enquiry: asking questions, evaluating theories, observing and measuring, analysing relationships, evidencing conclusions (Fuller et al., 2000, 2006; Panelli and Welch, 2005; Hope, 2009; Nicholson, 2011). As detailed earlier, fieldwork can be pivotal to both 'viewing the world' and to informing a student's 'world view'. Suffice it to say here, positionality and the negotiation of personal identity in field research, the reality of different power relationships in cross-cultural fieldwork, and the obligation of researchers to conduct studies that are meaningful in local contexts calls for reflexivity and self-scrutiny in field researchers. Through fieldwork, students can come to appreciate their role in construing meaning upon as well as in acquiring meaning from the environments in which they are immersed (Driver, 2000; Fuller et al*.,* 2006; Phillips and Johns, 2012).

Geographical fieldwork offers a learning environment conducive to social constructivist learning (Vygotsky, 1978) in which students, guided by staff, co-discover knowledge and understanding and connect theoretical concepts with real-world scenarios (Hovorka and Wolf, 2009). Stoddart and Adams (2004) suggest that the field reveals the complexity of geographical problems, but that in the field this complexity also becomes amenable to comprehension. Fieldwork facilitates deep learning (Hill and Woodland, 2002; Dummer et al*.,* 2008) and skills acquisition (McEwen, 1996; Fuller et al., 2003, 2006), as well as potentially strengthening social bonds (Boyle et al*.,* 2007). Field experience allows practitioners to view objects and relationships in their wider context and to understand links and processes. Such abilities are complex and incorporate subject-orientated and personal transferable skills. For this reason, the importance of fieldwork in higher education is continually reaffirmed, despite the increasing financial and organisational pressures faced by institutions (Fuller et al*.,* 2000, 2003; McGuinness and Simm, 2005; Cook et al*.,* 2006; Herrick, 2010; Phillips and Johns, 2012). As Fuller (2012) has articulated, these factors challenge anew our provision of best practice in pedagogy in the field, asserting pressure on geography educators to develop transformative learning (McEwan et al., 2010-11) and to refine subject-specific and generic graduate attributes that move students towards self-evaluation and self-improvement (Nicol, 2010).

The advent of ICT has been liberating in numerous educational contexts. In Italy teachers of geography in schools and HE have used interactive online discussion boards to formulate a timely collaborative response to the recent advent of a national curriculum (Giorda and Di Palma 2011). The development of ICT, especially in relation to wireless connectivity and mobile technologies, is facilitating the movement of geography learning and teaching beyond formal classroom space, allowing directed e-learning to take place anywhere, anytime (Lynch et al*.,* 2008). One response to the higher education funding challenge in the USA has been increased government appeals for institutions to increase online education (Erickson, 2012). The hope is that more students will receive college degrees more rapidly and at less cost. As a result, nearly a third of all students at non-profit and for-profit colleges and universities in the USA took one or more online courses in 2010 (Green and Wagner, 2011), helping to establish the popularity of Moocs (massive open online courses). Lenzner and Johnson (1997) suggest that technology may be the beginning of the end for traditional universities and their place-based campuses. Academics can be ‘sourced’ from a wide range of institutional settings and their knowledge ‘packaged’ for global distribution and consumption. Students can employ technology in a wide array of settings; public and private, shared and individual. In addition to enhancing fieldwork learning, notably by supporting geospatial functionality and improving connectivity between student groups via GPS

handsets, mobile phones and networking applications (Welsh et al., 2011, Welsh and France, 2012), students are increasingly able to access resources from around the world in preparing their assessments, as well as being able to make on-line connections with, and access help from, peers, professionals and employers. Mobile technology has also created new roles for students, not as mere consumers of online content, but as creators of that content, a process that has been referred to as volunteered geographic information (VGI) (Goodchild, 2007, 2009). VGI is a result of the growing range of interactions enabled by the evolving Web. Common forms include geotagged entries in Wikipedia and sites such as OpenStreetMap that enable volunteers to create public geospatial data layers. The increasing number of non-professional contributions to geographic information online will have profound consequences for the production and consumption of geographic knowledge (Hand, 2010). VGI can potentially provide rich, abundant, timely and cost-effective flows of geographic and geo-referenced information. It has the potential to empower contributors, but it also draws forth questions concerning validity, accuracy and credibility of online content, and it opens up wider issues concerning authority, liability and privacy (Flanagin and Metzger, 2008).

Virtual learning spaces afforded by ICT enable learners and teachers of geography to locate, organise and create content and learning. But they should also go beyond this, facilitating the social dimensions of learning. Such approaches contend that students learn best by 'co-constructing' knowledge and developing their views via dialogue with each other and their teacher, immersed in spaces that facilitate collaboration (Vygotsky, 1978). This enables alternative viewpoints to be negotiated and 'taught back' (Pask, 1975), and hence provides an explicit learning process. Laurillard (2002) encapsulates these learning theories in an iterative 'conversational framework', which, she hopes, will enable teachers to deliver the true potential of digital technologies to learners. There may be a need, therefore, to anchor the flexibility of technology within discursive learning environments such as the classroom or in on-line discussions, with activities supported and made purposeful by the tutor (Hill et al., 2012). Such interactive discussion (student-student and student-staff) should advance students in both cognitive and affective learning domains (Bloom et al., 1956; Krathwohl et al., 1964), allowing them to practice higher level cognitive skills such as analysis, synthesis and evaluation, as well as encouraging them to formulate, assess and change their values and opinions. The employment of ICT offers the possibility that virtual learning spaces can become social learning spaces, which transcend social and academic perspectives and facilitate both formal and informal learning (Chism, 2006).

Yet changes in technology also bring with them pedagogic concerns. Spatial inequalities exist with respect to accessing global broadband networks and this mediates dialogue between students in the Global North and Global South. Even though technology acts to reconfigure time and space, the limited technological capacity in many educational institutions of the Global South inhibits the capacity of their students to 'meet up' on-line (Lynch et al*.,* 2008). Computer and broadband access is uneven globally, nationally and regionally, facts that differentially influence personal learning experiences. School pupils in Kenya, for example, recognised the potential of learning supported by ICT, but they also acknowledged poor access to such resources (Kiforo, 2008). Likewise, research in schools in the UK identified that students without home-based access to ICT were aware of the educational inequalities that resulted, which, in turn, led them to disengage from homework (Holloway and Valentine, 2003). Young people from privileged backgrounds are increasingly finding that the specification of the computers used at home is significantly better than those encountered at school/university - the so-called 'digital disconnect' (Levin and Arafeh, 2002). There is also an issue concerning how the provision of school and university ICT resources can be synchronised to help students make a smooth transition from working at home to working in the classroom. One answer might be to move from desk-based ICT provision towards mobile devices, but this raises questions about costs and logistics.

Further concerns are the possibility of rising internet plagiarism by students, and the need to provide students with the skills necessary to critically evaluate the veracity and reliability of the apparently ever-expanding information available online. In contrast to those of us who competed for access to scarce material academic resources such as library books, Facebook and i-pod generation students are increasingly viewing the world from the palms of their hands, where they can access seemingly limitless sources of knowledge. This raises the challenge of how institutions value and reward the learning that takes place outside of the classroom, in technological spaces and beyond, as they often fall outside of formal curriculum content and assessment. Integration into formal processes necessarily erodes the informal nature of the experience and shifts the balances of power between participants.

University geographers should not be reticent about moving learners from the periphery to the centre of the learning experience, embracing the spirit of radical collegiality that originated in student-centred learning in schools in the UK (Fielding, 1999, 2004; Rudduck, 2002; Rudduck and Flutter, 2004), Australia (Thomson and Holdsworth, 2003), Canada (Levin and Pekrulm, 2007) and the USA (Thiessen and Cook-Sather, 2007). Radical collegiality perceives education as a genuine partnership between students and staff, each learning from the other. It has evolved from the concept of student voice, affording learners

the opportunity to share with staff their views about the learning experience, to that of students as change agents, denoting true empowerment of learners as they lead staff to action change in their institutions. As an example, students of geography and other disciplines at the University of Exeter have carried out a series of research projects on their learning and teaching environment, selecting concerns raised through student-staff liaison committees, and providing recommendations and solutions to improve their experience (Dunne and Zandstra, 2011); less structured processes occur in many higher education institutions as a product of student feedback. In an increasing number of institutions in the USA, students are becoming partners in pedagogical planning, co-creating teaching approaches and co-designing courses and curricula with staff (e.g. Werder and Otis, 2010; Bovill et al., 2011a, b; Cook-Sather 2011). As students become agents of change, their role with respect to teachers, and vice versa, becomes less exclusionary. Similarly, working with students as change agents can support an increasing interconnectedness between the classroom, the wider contexts of higher education institutions, and community spaces and practices that exist outside of the institutions.

Some academic geographers have engaged with educational spaces beyond the formal curriculum and encouraged the blurring of student and teacher identities by supporting undergraduates to disseminate their research publicly (Walkington, 2008; Hill and Walkington, 2012a; Weller, 2012). This process can be achieved over a range of levels, from departmental and faculty conferences within universities, to national and international conferences, and publication in student research journals e.g. *Reinvention* (http://www2.warwick.ac.uk/fac/cross_fac/iatl/ejournal/), *Geoverse* (http://geoverse.brookes.ac.uk/) and *The Plymouth Student Scientist* (http://www.theplymouthstudentscientist.org.uk/index.php/pss) (Hill et al., 2011). Engaging with and disseminating research beyond the curriculum makes the research process more authentic and relevant for students (Nicholson, 2011). It increases self-confidence, improves motivation to perform at the highest academic level and develops transferable skills to enhance career opportunities (Walkington, 2008). With respect to external-facing, multi-disciplinary student conferences, research in the UK has shown that participants recognised the need to communicate effectively to diverse audiences and they acknowledged the tensions between offering detailed but accessible presentations (Hill and Walkington, 2012a). The student researchers became more aware of their own disciplinary perspectives and how they relate to other disciplines. They also noted the positive links between the professional external conference context and future employability. Exposing their research to public audiences beyond their institutions was judged a valuable and empowering expression of their academic efforts (Hill and Walkington, 2012a). Overall, the

skills the students professed to develop via external presentation included many associated with the concept of self-authorship (Baxter-Magolda, 2004); the ability to know oneself, to know what one knows, to reflect upon it, and to base judgements on it. These skills were critical analysis and evaluation, deciphering of ambiguity, development of mature working relationships and consideration of multiple perspectives. Expertise was shared in the mutual construction of knowledge and its dissemination among peers and, as such, the process moved towards resolution of the teacher-student contradiction (Freire, 1970).

There are a number of issues, however, that require further examination if the true potential of students as agents of change in higher education is to be realised (Hill and Walkington, 2012b). Perhaps the most important of these pertain to the development of knowledge and skills required for students and staff to take part effectively in the new educational arenas and changed power relationships, how a multiplicity of contested/marginalised voices can be made audible, what physical and virtual spaces are needed for participants to participate in meaningful informal social interactions and dialogue, and what kinds of organisational culture and structures are needed to enable student engagement to thrive.

Conclusions

The challenges inherent in the current financial and policy climates increasingly impose a business/managerial model upon many higher education institutions. In this environment there is concern that students increasingly see themselves as fee-paying 'customers' seeking an income-generating end product in the form of a degree. Recruitment to geography courses ensures both the continuity of departments and jobs, as well as the intellectual reproduction of the discipline (Bednarz et al. 2003). While many skills integral to geography courses are valued by employers (see Brown 2004), in a competitive market place university educators may need to strategically highlight demonstrable learning outcomes and key knowledge and graduate competencies which can be linked to employability. However, there may be challenges in balancing overtly applied content and skills such as GIS with intellectually important but less obviously 'marketable' content such as the history and philosophy of geography. Academic merits aside, less applied modules will benefit from Innovative approaches including active-learning and skills enrichment as part of degree-wide curriculum mapping.

To remain competitive as a discipline in the eyes of external gate keepers such as funding bodies and internal decision-makers striving for constant efficiency gains, geography educators need to be strategic in managing the dialectic between maintaining eh discipline's identity and moving beyond the traditional silos of the discipline, department, curriculum and

classroom. We need to step outside of their imposed and rigid boundaries to join broader communities of inter-disciplinary practice, employing mutual dialogue to communicate within fluid learning spaces (both on- and off-line) and to empower creative, competent knowledge handlers who can cope with the demands of supercomplexity (Barnett and Hallam, 1999). We must manage positively the consequent blurring of teacher and student identities (Freire, 1970), and of social and academic spaces (Knight, 2006). These highly malleable and non-hierarchical environments can bring a multiplicity of students together over discontinuous spaces and times to construct knowledge for themselves, according to their individual learning styles, guided by peers and academic colleagues (Barr and Tagg, 1995). In an era of increasing accountability, loosening the reins on the learning experiences we provide can seem daunting. But re-conceptualising ourselves as producers, facilitators and consumers of geographical knowledge, skills and competencies may help protect the discipline for the future, ensuring the continuity of what we value as 'educating geographically' through formal as well as informal channels of geographical education.

A historically survey of geography's past, both in universities and in the wider realms of geographical knowledge, shows the rich wealth of intellectual affiliations the discipline has possessed. Such plurality encourages us to shape an effective scope, purpose and set of intellectual affiliations for the discipline of the future. The key to success seems to be maintaining a recognisable geographical identity, but with porous boundaries that allow reciprocal connectivity and collaboration - between academic geography and other disciplines, between academic geography and more informal ethnogeography, and between academic geography and public geographical knowledge. Such interactions have the potential to define the identity of the discipline and encourage reflexive pedagogy; resulting in geographically educated students who view the local-regional-global world critically and reflectively, as well as being equipped with a set of competencies that facilitates active citizenship through employment, volunteering, performance and activism.

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