

Sustainable city education: the pedagogical challenge of mobile knowledge and situated learning

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This paper seeks to reflect on recent developments in higher education for planning sustainable cities and to draw out the insights from relevant literature emerging from the underexplored interface of the geographies of higher education and policy mobilities. It emerges from an informal review of our own institution's marketing, coordination and monitoring of sustainable cities-relevant programmes and a systematic review of similar programmes offered globally. This we present as a critical provocation responding to a key pedagogical challenge of sustainable cities education, that of promoting mobile knowledge and/or situated learning. We conclude by offering three possibilities for how higher education programme developers might embrace and operationalise this creative tension.

Key words: sustainable city, higher education, knowledge, policy mobility, planning

Introduction

The pursuit of 'the sustainable city' is widely accepted as both a conceptual and practical challenge, but is also a pedagogical one. Teaching students how to plan for a (more) sustainable city navigates contested terrain. Planning as a dualistic discipline, both academic and vocational, normative and analytical represents a variety of rationalities about how to achieve sustainable urbanism, from highly technical through cultural approaches. Moreover, sustainable cities education faces the challenges of scale, scope and reach. Educating future planners about sustainable cities invariably means straddling these dimensions.

This paper emerges from a reflection on our own institutional marketing, coordination and monitoring of sustainable cities-relevant programmes and a systematic review of similar programmes offered globally. Our review of sustainable city higher education (HE) programmes identified a key tension: the convergence towards mobile knowledge promotion regardless of geographical context and, at the same time, recognition of the importance of geographical specificity in the application and implementation of sustainable cities theory and practice. The acknowledgement of such a tension is not in

itself ground-breaking, but is nonetheless challenging from a pedagogical perspective. As educators in the field of sustainable and international planning how might we address an educational field so tension-riven? Is it our responsibility to ameliorate the contradictory nature of the tension or to embrace it in our curriculum development and teaching?

Answering these questions involves understanding the complexities of HE programme development and delivery within the context of institutional management practices currently urging the internationalisation of HE and the extension of global student recruitment. It also prompts a closer examination of dominant approaches to developing generalisable ideas about achieving urban sustainability and a scrutiny of the role HE institutions and programmes play as agents of transfer in such knowledge production, capture and application. In order to understand more fully the challenges that the core tension raises, this paper brings together two emergent literatures that hitherto have had surprisingly little overlap, despite obvious synergies in research on learning and knowledge circulation – the geographies of HE and urban policy mobilities.

The nexus of these literatures provides the scope for identifying what we believe to be the key pedagogical

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imperative for sustainable cities education, capturing the productive potential of the tension between mobile knowledge and situated learning. It also directs our consideration of three possible avenues for academic programme development. First, we identify the need to promote a more critical evaluation of the notion of 'best practice' and its circulation, with an emphasis on how to avoid reifying claims of teaching students universally transferable skills and promote the development of *potentially* mobile competencies. This shifts attention of educators and students towards the contingent skills of knowledge re-use through more direct encounters with local contexts. Second, we argue there is a need to promote the conscious reframing of programme development objectives to encourage students to consider their own roles in the co-constitution of sustainable city knowledge production and circulation. This involves challenging students on their understandings of contexts and their consideration of how approaches might or might not apply in those contexts. Finally, we contend there is a need to shift emphases in what HE programmes promote and propagate in order to foster a greater understanding of potential student uses of sustainable city knowledge beyond HE outcomes, such as professional accreditations.

The latter part of the paper develops the engagement of these literatures but, first, we review a range of relevant programmes with the intention of providing a provocation for and stimulus to the conceptual discussion of the pedagogical implications outlined above.

HE programmes on the sustainable city: a review

As a starting point for our consideration of HE for the sustainable city, we undertook a systematic review of programme websites for degree-granting institutions offering sustainable cities-oriented study. Programme websites are a useful lens for analysing or at least questioning geographical and cultural reach. Therefore, a Google web trawl was conducted in March 2013 using the search terms: 'sustainable city university', 'sustainable cities university', 'sustainable urbanism university', 'eco-city university' and 'eco-cities university'. The search was limited to educational degree- or qualification-granting programmes, resulting in 23 programmes for analysis (see Figure 1). While some of the programmes were recently re-named and adapted to fit the sustainable cities education remit, most were newly created with several created in the last two to five years. The web trawl identified programmes in eight countries including: United Kingdom (12), USA (3), Australia (3), India (2), The Netherlands (1), Denmark (1) and Germany (1).¹ All 23 programmes were for postgraduate study across a spectrum of

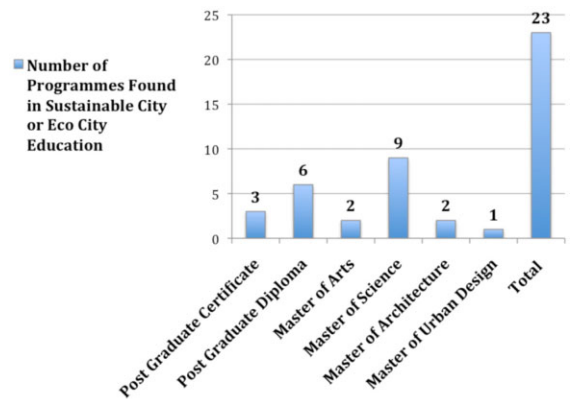


Figure 1 Number of sustainable cities programmes by qualification

cognate disciplines (see Figure 2). The programme websites and online documentation were compared and contrasted using a predefined template for collecting and coding information on their curriculum, focus/mission and general mechanics. A number of key features of sustainable cities HE were suggested by this review.

Mobile knowledge

Many programme descriptions begin by emphasising global trends towards continuing urbanisation, typically citing that 60 per cent of the world's population by 2030 will be living in cities. This leads directly and rhetorically to the argument that, with more people living in cities, all people are facing common problems. These common problems – 'our' problems – are the drivers for the pursuit of urban sustainability. Just as the problem is common and increasingly relevant to larger populations, so the solution also gets framed as common. Thus the University of Aalborg MSc programme in sustainable cities states that their graduates 'will acquire knowledge and skills to conduct technical, economically and societal transition processes needed to find sustainable ways to lower the impact from urban living'. CUNY's MSc in Sustainability in the Urban Environment claims to give students 'a common language and shared direction'. There is an almost universal emphasis, sometimes explicitly stated and sometimes implicit, on integration across the different dimensions of sustainability (environmental, economic, social), often framed as a holistic approach or as a way of providing universally applicable sets of principles for professional practice.

The result is a reification of the sustainable city itself as a distinct ontological entity; for example, the Rotterdam ECO-Cities course refers to successful students being able to 'understand the latest thinking on [the] green city concept'. Dundee University's MSc/PGDip on Advanced

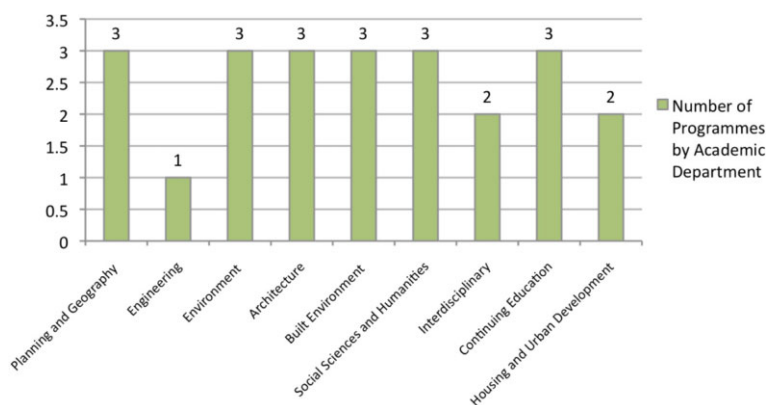


Figure 2 Sustainable cities programmes by offering academic department

Sustainability of the Built Environment refers to ‘sustainability thinking on a national and international level’. UCL’s MSc in Sustainable Urbanism identifies an expert in sustainable urbanism as having ‘the skills to conceptualise a sustainable city and the ability to design one’. The purpose of these programmes is to impart transferable skills and expertise that will travel. In doing so, the relevant economic context is the global market for professional services and the physical mobility of graduates. Lawrence Tech explicitly refer to this global market and UCL’s graduates from the MSc Sustainable Urbanism are intended to be equipped for involvement in ‘the types of large and complex sustainable urban projects that are increasingly being planned across the world’ and that are creating ‘a major and increasingly obvious skills gap’. The programmes offered by the Prince’s Foundation (with Oxford University and the University of Wales) are ‘tailored to professionals worldwide’.

Sometimes training in specific methodologies that can be generally applied is offered. The ECO Cities course run by the Institute for Housing and Urban Development Studies at Rotterdam University concludes with participants using the European Green City Index methodology to prepare a measure of the overall environmental performance of their home city and design an action plan to improve its eco-efficiency. This is clearly intended to be done during the course rather than in-situ in the chosen city. Lawrence Tech’s Master of Urban Design places particular emphasis on ‘a balanced and holistic systems approach’ and CUNY’s MSc in Sustainability in the Urban Environment proposes whole systems thinking and life cycle analysis as essential to enabling ‘an increased understanding of complex urban eco-systems’.

International comparisons are focused on as a way to build this transferable expertise. Dundee University aims to ‘equip students with a set of perspectives and skills which are used when analysing complex urban problems’

(MSc/PGDip Advanced Sustainability of the Built Environment); each urban context may demonstrate complexity but there is a toolbox that can be used in all such contexts. They place particular emphasis on ‘the principles of place design’. Cardiff University require international comparative research as part of the final report on the MSc Eco-Cities. ‘International experience of planning practice in eco-city development’ is used to support critical reflection on the theory–practice interface. Fieldtrips and study visits are extremely common to support such international comparison and reference to them is widely used in programme marketing.

Situated learning

While there is this emphasis on generally applicable methods and solutions, implementation is also stressed. ‘The aim of the course is the discovery and application of innovative and pragmatic solutions to real-life issues’ (The Prince’s Foundation MSc in Sustainable Urban Development with Oxford University). This shifts the emphasis from the general to the specific, from the global fields of solutions to unique applications, from ‘our’ common problem to ‘your’ or ‘my’ urban context. This tension is apparent when programmes discuss the importance of project-based learning for projects that are inevitably site-specific and institutionally situated. They must emphasise context. Cardiff University offer the opportunity to participate in ‘real low carbon eco-city planning and developments through live projects’. This live project involves an overseas field study visit and work with a partner organisation. The intention is that students will ‘deploy skills in problem-definition; draw upon and develop knowledge and planning, political and cultural context of the development; and appreciate the operational context within which a report will be delivered to the partner organisation’.

Any specific urban context will, by definition, be unique. Dundee University’s MSc in Advanced

Sustainable Urban Design uses their own location as 'a good starting place', suggesting that redevelopment of the waterfront provides 'ample opportunities to understand the inter-relationships between "discourse" and "practice" in shaping high quality places'. The Master of Urban Design offered by Lawrence Tech suggests that its own location provides 'one of the most unique urban contexts for exploring sustainable urbanism'. But they also see their students as exploring 'a variety of cities and their social, economic and environmental systems'; here the 'context of sustainability' provides the ability to generalise from these different experiences.

In some cases, the implications of the geographical specificity of the projects that students will work on are more fully acknowledged. Stuttgart's MSc in Integrated Urbanism and Sustainable Design emphasises the specific 'environmental, cultural and social challenges resulting from the rapid urbanisation and ongoing societal transformation currently occurring in the Middle East and North Africa'. This MSc programme is unusual in having a clear geographical remit. It is co-sponsored by German and Egyptian governments and involves collaboration between the Universities of Stuttgart and Ain Shams Cairo. This collaboration supports an international and interdisciplinary spring school but, rather than suggesting practice that is mobile and divorced from any specific location, this spring school is firmly located in the desert oasis of Siwa. The purpose is clear: 'The task of the workshop is to help the Siwan people'.

The MArch in Sustainable Urbanism from the Indian Ansal University takes a rather different approach. Exhibiting many of the common features of the other programmes discussed above, it differs in that it begins from a critique of previous experience with mobile learning. It emphasises that India is 'a unique country' and that there has been a tendency to 'disregard its climatic uniqueness and rampantly ape alien architecture and design, at the cost of tremendous increase in energy consumption and waste generation'. Instead the programme aims to develop a distinctively Indian approach, although they cannot resist the idea that they might then export in turn, creating 'thought-leaders . . . who shall pave the way for other developing countries to follow suit'.

Some of the programmes investigated seek to tackle the tension between mobile knowledge and specific contexts of application by including opportunities to work with practitioners. This begins to incorporate situated learning within the educational experience and seeks to balance academic and practical training. Texas A&M, in the Sustainable Urbanism programme, emphasises being part of 'innovative learning and practitioner communities' and applying 'collaborative practices'. UCL's MSc in Sustainable Urbanism includes emphasis on so-called 'soft skills' of implementation 'such as crea-

tive thinking, negotiation, project management and advocacy', and it provides the opportunity to explore a major project through collaboration with an industry partner. Aalborg University provides their students with the opportunity to work with external partners for an internship or prolonged research project. The Prince's Foundation develops this approach still further for the MA in Sustainable Urbanism (University of Wales), wherein students spend the first year at the Foundation's London office, followed by work placements of four days a week as part of the dissertation-writing process in the second year.

Conceptualising the tensions of 'sustainable city' HE

The above review suggests a key tension between acknowledging the unique, situated nature of urban experience, on the one hand, and developing mobile knowledge and expertise that will travel in a global market for professional services. This pedagogic challenge facing the educational practitioners delivering these programmes exists within the broader contested terrain of urban sustainability. In this section, we take a more conceptual approach and consider how the conclusions of our empirical review relate to some key geographical literatures, particularly policy mobilities and the globalisation of HE.

This discussion of sustainable cities HE would appear to have immediate resonances with the emerging problematic of policy mobility (McCann 2011; McCann and Ward 2010; Peck and Theodore 2010; Peck 2011; Cochrane and Ward 2012) or more generally knowledge circulation (Rydin 2007; Harris and Moore 2013; Healey 2011; Larner and Laurie 2010). It is clear that most of these programmes see themselves as involved in circulating, on an international scale, ideas and knowledge for enhancing the sustainability of urban areas. With regards to the travel of concepts like 'sustainable cities' or 'ecocities', considerable literature exists on the *agents* of such mobility, the so-called 'global intelligence corps' (Olds 2001), the 'starchitects' (McNeill 2009; Faulconbridge 2010). Occasionally the agency of HE in the relative 'mobility' of an idea, model, practice or policy is mentioned in brief (Temenos and McCann 2012; McCann and Ward 2010; McCann 2011; Harris 2013). Rarely though are the actual technologies of mobility, such as the institutional apparatus, 'informational infrastructures' (McCann 2011, 114) or 'export mechanisms' (King 1980, 214) that enable pedagogical mobility agents to operate, considered in sufficient depth – these being the HE system and subject-specific projects and programmes (LeHeron and Lewis 2007; Robertson 2010; Abramson 2010).

This is partly because the policy mobilities literature takes as its task the wider understanding of public or social urban 'learning' (McFarlane 2011a 2011b; Temenos and McCann 2012; McCann and Ward 2013). The latter rightly emphasises the centrality of learning to the production of urbanism and as a site of progressive urban politics (McFarlane 2011b) through a sensitive following-through of the informal and everyday practices of urban knowledge assemblage and circulation. However, there is a notable absence of an explicit consideration of HE institutions and practices in these wider debates and, indeed, the implications for creating the skilled labour force for the urban sustainability professions or the educated citizenry for local political action. Yet McCann points out that

within the field of modern urban planning there have always been institutions, organisations and technologies that frame and package knowledge about best policy practices, successful cities and cutting-edge ideas. (2008, 896)

Thus it is no surprise that as models of sustainable city planning and development are proliferating across the globe, so too are specialist HE postgraduate programmes. Within each context of HE learning and teaching exists a platform on which educators and trainers and degree-granting institutions have selectively prioritised a 'preferred bundle of practices and conventions' and 'stitched together particular readings of policy problems with putative solutions' (Peck and Theodore 2010, 171).

As we have seen, these foundational approaches and epistemologies are often inflected with the lexicon of 'universal' principles of good planning in response to a global problem of *unsustainable cities*. Yet, each educational context is situated in a particular geography, political system and cultural milieu, just as is each city and urban area. Cochrane and Ward suggest that it is necessary to investigate how apparently global phenomena, such as sustainable city policies and models,

find their expression and are given their meaning in particular, grounded, localized ways, how they are translated through practice and how that translation in turn feeds back into further circulation. (2012, 7)

Following McCann and Ward (2010), we can look at the proliferation of sustainable city ideals as both relational and territorial – both in motion and simultaneously fixed or embedded in place. HE programmes specific to sustainable city training and specialisation are implicated here as key agents in the valorisation of dominant narratives of what constitutes sustainable city knowledge and best practice. This occurs in several ways: the re-assemblage of a selection of locally contingent policy-

relevant problems or challenges in academic research and writing (McCann and Ward 2010) and the codification of selective principles, truth claims and theories in pedagogical decisionmaking and course development practices.

Some would argue that the rate and manner in which policy-relevant ideas and models are travelling around the world are promoting a unification or convergence of sustainable city best practices, policy and training (see Ozga and Jones 2006; Peck and Theodore 2010; Healey 2011; Friedmann 2010). Others might contend, as Healey postulates in the era of reflective practice, academics have become nervous of universal claims and generalisations, choosing instead to emphasise 'the situated contingencies of particular instances of planning activity' (2011, 193). She queries whether this leads down the path to extreme localism

where all we can say is that it is up to each site of collective action to go its own way and invent its own wheel, drawing on its own history and culture to create a future. (2011, 193)

The preliminary analysis in this paper of the spectrum of sustainable city HE programmes offered globally suggests that pedagogically this emergent sub-discipline of planning struggles with the competing tension of conceptual and practical convergence and divergence, raising the spectre of whether or not sustainable city education is systematically contradictory. The question emerges as to how effectively current educational opportunities in sustainable cities planning encode this creative tension, while still aspiring to achieve global circulation and validity.

These questions overlap interestingly with the literature on the geography and internationalisation of HE (Altbach 2007). Internationalisation of HE literature highlights the international student experience, the need for institutions to become culturally responsive to diversifying student identities and the debates surrounding 'widening knowledge' through educational capacity-building in other countries (Altbach 2007; Waters and Brooks 2011; van der Wende 2010; Olds 2007; Baker 2010; Holton and Riley 2013). But the internationalisation of HE is arguably underwritten by the bluntness of budget-based recruitment and marketing to attract international students. One way that this is done is by the promotion of *outcomes* (employment destinations, career trajectories) accrued by recent graduates of particular programmes. This connects with push factors in many countries for young professionals to 'get educated' abroad to expose themselves to dominant models and approaches and to bring these back to fix social, economic, political, environmental problems experienced in home contexts. Rizvi suggests that ultimately

international education is used by international students to 'better position themselves within the changing structures of the global economy, which increasingly prizes the skills of inter-culturality and a cosmopolitan outlook' (2005, 9).

HE programme developers thus operate in and constitute the 'global spaces of competition and emulation' (McCann 2011, 116) and draw on comparative techniques and infrastructure to secure and maintain a demand from this international student market. Their institutional marketing practices seek to persuade potential students of the personal and economic benefits of being a part of the global circulation of sustainable cities knowledge. Hence, mobility and circulation are crucial to the production, reach and validity of knowledge institutions (Raghuram 2013) and the relative success of their respective sustainable cities programmes.

This discussion makes it clear that the dynamic processes of the internationalisation of HE have close affinities with the problematic of how ideas and practices travel from one policy context to another. Yet little within the mobilities literature explicitly explores the processes of learning that students and programme developers jointly constitute through the relational connections of individual and collective strategic interests and the implications of such connections for disciplinary and professional outlooks. Perhaps the closest common ground can be found in the works of geographer Richard Le Heron (Le Heron and Lewis 2007; Larner and Le Heron 2002a 2002b; Le Heron 2013). In particular, Larner and Le Heron's writings have been cited by mobilities theorists (see McCann 2011) suggesting the value of a more ethnographic approach to studying policy and ideas transfer from specific sites and contexts and detailing the 'governmentality of certain microspaces' (McCann 2011, 113) within these sites. This approach directs critical attention toward the processes, relations and interactions that connect various sites of knowledge and learning through comparative techniques for the benchmarking of best practice. HE institutions are one such network of microspaces and sites of knowledge production, emulation and replication. In our final section, we attempt to consider some implications for changed pedagogical practice within such microspaces arising from our analysis.

Conclusions

HE programmes specialising in 'sustainable city' training are proliferating. An international comparative review of programme websites has revealed the tension that pervades the educational offerings in the field: on the one hand, promoting the acquisition of 'universal' sustainable cities principles, skills and expertise (inferring the development of a repertoire of best practices ready to be trans-

planted and replicated in different contexts); and on the other hand, privileging the distinct, situated nature of urban conditions and milieux stressing the inherent necessity of learning and applying what is learnt in context. This tension could be seen as problematic, but it could and perhaps should instead be capitalised on, echoing McCann and Ward (2010), as a productive or creative tension – one that can bring about the necessary tempering of claims of transferable solutions and universal principles with a greater engagement with local conditions and people. This raises a pedagogical imperative and we conclude this paper by considering some possible avenues for development in terms of educational practice and reflection. Following the lead of both McCann and Ward (2010) and Peck and Theodore (2010), we agree that such a tension can be a productive one, wherein policies, ideas and practices 'evolve through mobility' while simultaneously '(re)making relational connections' between sites (Peck and Theodore 2010, 170). Here we identify three possibilities.

The first concerns the claims to be teaching general and transferable skills. We have seen that this cannot be an uncontested claim. Rather we should be promoting critical evaluation of notions such as 'best practice' and its mobility (Moore 2013). This might entail re-visioning how study trips and fieldwork are embedded within programme learning objectives and marketing so that they become highly reflective critical encounters with locally situated practices rather than examples of ideals to be emulated. More generally, students need to see that they are developing competencies that are *potentially*, rather than *definitely*, mobile. It is a misnomer to describe these as universally 'transferable skills'; rather they are skills that need to be reconsidered and reformulated as the practitioners meet new circumstances. This is not about applying general principles in specific settings and constituting the 'transferable skills' at a higher level of abstraction. Skills need to be taught in detail and not just as a set of broad generalities. But students need to be aware of how to re-tool, re-apply, re-frame what they have learnt to different situations. The skills are as much about how to re-use knowledge learnt through detailed application in one context to a new one. Many of us would hope that we do this, but to achieve it successfully is indeed a pedagogical challenge since it is easier to focus on how skills are used in our own backyard and/or to emphasise their generalisability.

Second, the implications of the growing internationalisation of the student body demand consideration. The globalising HE 'market' has rarely been accompanied by the conscious reframing of programme development objectives to encourage international and home students to critically reflect on the processes of knowledge production, circulation and reach that they are co-constituting

through their (monetary) validation of particular programmes and institutions. Students' knowledge of their own home context could also be used to challenge students on understanding contexts and to consider how approaches might or might not apply in those contexts. Developing this as a pedagogic approach involves more than asking questions about 'would this work in . . .?' It might involve greater use of extended projects and dissertations to this end so that engagement with local contexts and communities in the host HE institution locality is balanced with equivalent engagement in the student's place of origin. International students often seek to undertake their personal research projects in their country of origin but, because this often takes place at the end of the programme, such project work is rarely brought back to support a discussion about the differences between HE and home sustainability practices. Again the situated research of home and international students could be helpfully discussed in relation to each other to reveal some of the limitations of apparently transferable knowledge, skills and policy ideas.

Third, there is a need to consider how HE offerings are formatted and programmed to ensure that we are not emphasising the 'professional qualification more than the education it represents' (King 1980, 217). This implies that a shift in emphasis in what HE programmes promote and propagate. This includes taking emphasis off outcomes and fostering a greater understanding of uses – how are sustainable cities programmes being used by students? The focus on outcomes (jobs, salaries, accreditation) promotes an ideological framing of programmes as mere marketing devices (how well can we 'sell' the programme to the next batch of potential applicants?), rather than pedagogical platforms for sustainability knowledge co-production with future urban planning and development practitioners. Students need to be encouraged to explore the processes of knowledge production of which they are a part. This requires students to 'assess past and imagine and anticipate future ways in which they feel they are positioned by and actively seek to locate themselves and their knowledge' (Rizvi 2005, 4) of sustainable cities within dominant narratives of globalisation, internationalisation and policy mobility.

As educators teaching in the subject areas of sustainable cities and international planning, we have a responsibility to reconsider our own programme development and delivery to ensure we are engaging fully with the pedagogic challenge of working in such a contested and tension-riven field. This could be an opportunity for innovation and genuine improvement in the educational experience for students and teachers alike. As researchers, we hope to have also shown that there is a fruitful area for further development in the interface between the geographies of the internationalisation of HE and policy mobilities.

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Note

1 This research has a degree of Anglo-centricity because the search terms used were all English language words; however, globally there are several programmes that have fully or partially translated versions of websites and/or offer tuition in English, despite not being the first language of the institution.

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