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Student Experiences of Multidisciplinarity in the Undergraduate Geography Curriculum

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ABSTRACT

This paper explores the student experience of multidisciplinarity within the undergraduate Geography curriculum. It considers the drivers that have underpinned this development before considering the findings of research into student experiences in two universities in the south of England. The results suggest that most students view this development positively and recognize a number of advantages that it brings, citing expanded opportunities for learning, working with people from other disciplines, expansion of perspectives and perceived benefits to employability. However, for a minority this development is more problematic. The research points here to issues with specialist knowledge and disciplinary pedagogies, social issues within the classroom and class organization and some reservations regarding groupwork. The paper concludes with a series of recommendations.

KEYWORDS

multidisciplinarity, undergraduate, curriculum, student experience, disciplinary pedagogies

INTRODUCTION

“Geography in England is one of many university subjects that will be significantly restructured – with almost immediate effect – because of powerful external drivers altering research and teaching” (Castree, 2011: 294).

This paper is concerned with the effects of the growing trend, within higher education, for geography to be managed not in autonomous, stand-alone departments but rather in multidisciplinary departments of various kinds. This is a trend that has been identified and mapped in the UK (Hall, Toms, McGuinness, Parker and Roberts, 2015), internationally (Gibson, 2007; Murphy, 2007; Winkler, 2014; Frazier and Wikle, 2016) and across disciplines beyond geography (Hall, 2015). In the UK, for example, Hall et al. (2015: 59) noted that the number of autonomous, single discipline geography departments had fallen from 47 (out of 86, or 54.6 percent) in 1995, to 30 (out of 86, or 34.9 percent) in 2013. In the U.S. and Canada, Frazier and Wilke (2016) recognized an increasing pace and scale of rebranding geography departments with many dropping the name geography from their title or adopting titles that reflected mergers with other disciplines and departments, or a broadening of their disciplinary purview. These authors noted that whilst awareness of these trends in aggregate terms is growing, little has been said to date about their impacts on the reproduction of geography through teaching and research practices within the discipline.

This paper considers the impacts of these increasingly multidisciplinary management models on the construction, delivery and nature of university curricula and, crucially, student perceptions and experiences of this, an aspect of this lacuna within the international literature. The project sought to do this by exploring the perceptions and experiences of students on two undergraduate geography degree programmes that have become characterized by degrees of multidisciplinary in recent years.¹

CHANGE IN HIGHER EDUCATION AND THE RESHAPING OF GEOGRAPHY

¹ The term multidisciplinary is used throughout this paper. Multidisciplinary is used here to refer to 1) university departments composed of staff, students and degree programmes that span multiple disciplinary boundaries, 2) individual modules which include students from more than one discipline (such as a module open to geography and sociology students, for example) and 3) curricula which include at least some modules that are open to students from different disciplines. These might be modules from a degree programme which are simply opened up to students from other degrees or modules that are specifically designed from the outset to be appropriate for students from a number of different degree programmes. It is not the intention of this paper, to intervene in the many debates about the nature, meanings and potentials of inter-, multi-, trans-, supra- and post-disciplinarity. There is an abundant extant literature through which these debates can be accessed (Chettiparamb, 2007; Frodeman, Klein, and Mitcham, 2010; Lattuca, 2001).

Geography in the UK in 2017 is generally seen to be in a healthy state. This is evidenced by: an increase in the number of students taking geography A level (pre-university) qualifications; growing numbers of undergraduate students enrolling on geography degree programmes at university; the development of a number of new geography undergraduate degree programmes within UK universities and a greater public recognition of the diversity and value of geography (The Guardian, 2015). Moreover, a recent international benchmarking exercise confirmed the global influence of UK human geography (ESRC-RGS-ARHC, 2013); and the presence of more UK geography departments in the top 100 than from any other country (QS World University Subject Rankings 2014; Hall, et. al., 2015: 58). However, this followed a seemingly less secure period for the discipline in the UK and internationally where a number of concerns were voiced about geography's imminent futures (Castree, 2011; Clifford, 2002; Erickson, 2012; Gibson, 2007; Kong, 2007; Philo, 2012; Thrift, 2002). These concerns covered a range of intellectual and institutional issues including: the precariousness of geographers' labour and the general conditions under which geographers work within an increasingly neoliberal academy and its disciplinary effects (Castree and Sparke, 2000; Demeritt, 2000; Dowling, 2008; Willis, 1996); the continuation of gendered inequalities within the discipline (Dyer, Walkington, Williams, Morton and Wyse 2016; Klocker, and Drozdowski, 2012; Maddrell, Strauss, Thomas, and Wyse, 2015); disconnections between school and university geography (Castree, 2011); and a lack of visibility of geographical knowledge within public discourse despite its obvious relevance to pressing global issues (Murphy, De Blij, Turner II, Wilson Gilmore and Gregory, 2005). The UK witnessed a number of specific pressures on higher education generally and geography specifically which stemmed from: higher education reforms and their effects including the Browne Review (2010), Higher Education Funding Council for England fee reforms and student number controls (2012 and 2015), resource constraints, departmental reorganizations and attention to thresholds of viability for degree programmes and departments. In Castree's intervention in debates about the imminent futures of (university) geography (in England) he calls for "careful curriculum design" (2011: 298) to maintain the vitality, viability and visibility of the discipline in the face of more discerning student preferences. One curriculum strategy that Castree does not discuss, but which has been, and remains, it seems, on the agendas of many higher education senior managers, particularly in the UK's post-1992² sector, is greater multidisciplinary within the curriculum. This might be achieved through the validation of increasing numbers of multi- and interdisciplinary degrees (Knight, Lattuca, Kimball and Reason, 2013), or as a result of the

² Post-1992 here refers to institutions, typically former polytechnics and colleges of higher education, who were granted university status after 1992. They tend to be primarily teaching focused institutions, although considerable research is produced within these institutions.

increasingly multidisciplinary nature of university departments. In the latter case, it is common for cognate degree programmes to share modules. This model of curriculum design and management has been developed to enhance intellectual, pedagogic or methodological synergies between elements of these programmes and / or through the pursuit of resource efficiencies achieved by teaching large classes drawn from a number of programmes.

The evidence then from Hall, et al., (2015) in the UK, Winkler, (2014) and Frazier and Wikle, (2016) in the USA is that increasingly the student experience of geography in higher education is not of a single discipline, autonomous geography department but of rather one that is multidisciplinary in some way. Recent developments within Australian higher education also point to a similar set of processes. For example, in 2016 Flinders University announced a radical restructuring plan which would result in the reduction in the number of its academic units with the remaining being more multidisciplinary in nature (Williams, 2016). Similar restructuring plans had also been announced at the University of Western Australia and the University of Adelaide. Little to date, however, has been said within the literature about the impacts on students of these changing contexts within which undergraduate geographers increasingly find themselves.

A potential consequence of the restructuring of geography in higher education is the reshaping of the geography curriculum. It is, and has long been, common for students in many countries to take a small number of 'top up' modules from outside their main discipline and / or department within their degree programmes. However, the experiences of the two UK institutions discussed in this paper suggest that, following departmental mergers and restructuring, it is becoming more common for the curriculum to be considered and reshaped at the (multidisciplinary) departmental level, or at least at levels which exceed the individual discipline. For example, modules taken on a geography degree might be a sociology module or a biology module, yet are accepted as part of a geography degree as they (arguably) include a significant amount of geographical material. Connections between the curricula of different disciplines appear to be becoming more common and more systematically pursued within these institutional contexts.

With specific reference to geography, contemporary university multidisciplinary though appears to be something of a contested terrain with some arguing that the potential resource efficiencies offered through multidisciplinary management structures and associated curricula are more appealing to university managers than the intellectual potentials opened up through multidisciplinary (Gibson, 2007; Holmes, 2002; Sidaway and Johnston, 2007). Whilst the neoliberal

language of 'rationalization' and 'efficiency' has tended to dominate the academic responses to the trend towards multidisciplinary, a small body of literature documents the positive attributes that some multidisciplinary can bring to teaching, such as awarding added value (McCleery, 2001), providing transferable skills beyond a degree (Richter, Paretti and Mcnair, 2009) and encouraging critical thinking (Widner and Davies, 2007). However, such literature simultaneously acknowledges that multidisciplinary needs to be undertaken with care, understanding and effort from staff (Bauder, 1990; Krometis, Clark, Gonzalez and Leslie, 2011); as different styles and staff backgrounds can create barriers (Bradbeer, 1999); so discipline-specific examples are required to enhance student understanding (Giesbrecht, Sell, Scialfa, Sandals and Ehlers, 1997). Concepts of identity, 'others' and the fuzzy boundaries between courses such as geography and the social sciences raise pedagogic questions (McKendrick 2001a), and exploration into teaching styles should be encouraged (McKendrick 2001b). Spelt, Biemans, Tobi, Luning and Mulder (2009) call overall for more research into multidisciplinary teaching, thinking and learning, a call to which this paper is a response.

The research outlined below, thus aimed to contribute to the existing literature, by listening to and acknowledging where disciplines are working together to produce something distinctive for students (and staff), as well as acknowledge innovation, choice and positive pedagogic outcomes where students responses highlighted such. In undertaking this research, the researchers were thus not interested in reproducing a 'death of a subject' narrative, but rather to explore multidisciplinary through the voices of students, exploring the positives as well as the pitfalls.

GEOGRAPHY, DEPARTMENTAL CHANGE AND MULTIDISCIPLINARITY IN TWO UNIVERSITIES

The research reported here was undertaken within two post-1992 universities in the South of England; the University of Gloucestershire and Bath Spa University. These were selected because of their history of conscious curriculum redesign within their undergraduate geography programmes to promote multidisciplinary modules. The primary driver of this in both cases was departmental restructuring. At the University of Gloucestershire the Department of Geography and Geology was restructured in 1998 into a multidisciplinary School of Environment. Here geography was housed along with a number of community, design and planning programmes. This was later restructured into a Department, then School, of Natural and Social Sciences. Here geography lost many of the other subjects from the School of Environment but was joined by sociology and psychology undergraduate programmes from other departments, and biology and criminology which were developed as new degrees. Periods of curriculum redesign followed both of these restructurings

with geography being directed to develop a curriculum that first overlapped with cognate programmes such as heritage management and community development (School of Environment) and then biology, criminology and sociology (Department / School of Natural and Social Sciences). The intellectual synergies that these developments might bring were not absent from these processes, but they were driven, at least in part, by potential resource gains through increased recruitment and teaching efficiencies achieved through the sharing of some modules between degree programmes. This curriculum redesign was based primarily around the sharing of fieldwork and research methods modules but other modules whose contents potentially appealed to more than one degree programme also became shared. These included modules in areas such as biogeography (geography and biology), globalization and global crime (criminology, geography and sociology) and urban studies (geography and sociology).

At Bath Spa University the Department of Geography and Development Studies became a stand-alone Department of Geography in 2001. The Department was for all practical purposes self-contained and self-managed department. In 2009 the Dean of the newly created School of Society, Enterprise and Environment abolished all six inherited single discipline departments and created three new multidisciplinary ones - Sciences, Social Sciences and Business. Geography was placed in the Department of Social Sciences, and directed to share resources with sociology and health studies, a move deeply unpopular with the physical geography team. A programme of module sharing was commenced, in particular between human geography and sociology, both of whom discontinued some modules, replacing them with modules adopted from the rest of the Department. Some modules were simply rebadged as geography modules (e.g. Globalization and Work), some were renamed and team taught to enhance relevance to geographers (e.g. Welfare and Society became Society, Space and Welfare) and some modules were written anew with a multidisciplinary audience in mind (e.g. Global Cities, Visualizing Society). These latter bespoke modules were the result of genuine multidisciplinary discussion and careful considerations of programme aims through formal internal periodic review processes. The former modules were more opportunistically identified. However both types of modules shared the same, generally positive, feedback in end of year module evaluation exercises.

METHOD AND LIMITATIONS

The research discussed here was undertaken collaboratively between the two institutions between 2011 and 2013. Both universities are of similar sizes, intake profiles and internal structures. Students

were accessed through an online questionnaire survey and two focus groups were held in each university with 14 self-selecting current students. The survey drew 107 responses from geography undergraduates at the two institutions, 57 (53.7 percent) from the University of Gloucestershire and 50 (46.7 percent) from Bath Spa University. During the period of the survey the two institutions contained approximately 280 - 300 current undergraduate geography students across all three years of study, suggesting a response rate to the survey of around 36 - 37 percent. The vast majority (79, or 73.8 percent) were students only studying geography (single honors students), with 28 (26.2 percent) joint or combined honors students taking geography with another subject. The survey drew responses from students in all three years of undergraduate study with 45 first year students (42.0 percent), 27 second year students (25.2 percent), 33 third year students (30.8), one part time student and one who responded 'other'. Overwhelmingly the students fell into the 18-21 age category (92, or 86.0 percent). More female students (68, or 63.5 percent) responded to the survey than male students (39, or 36.4 percent).

Of the students who responded to the survey 95 (88.8 percent) had experience of at least one multidisciplinary module (a module shared with at least one other course and containing students from this / these other course(s)). Of these students 36 (37.9 percent) indicated that between one quarter and one half of the modules they had taken had been shared with another course. However, this did include a large number of first year students, where at the University of Gloucestershire a shared, multidisciplinary double module (one quarter of the total first year study) was a compulsory element of the geography course. 31 students (32.6 percent of those who had indicated that they had taken a module shared with another course) indicated that these modules constituted less than one quarter of all modules they had taken at university, whilst nine students (9.5 percent of those who had indicated that they had taken a module shared with another course) indicated that such modules constituted more than half of all the modules they had taken at university at that point. The experience, then, of taking multidisciplinary modules was a very common one for geography students at these institutions and they formed significant proportions of their learning and teaching on their courses.

It is important to acknowledge the limitations of the research undertaken here. Most obviously this was a small survey that spoke only of the experiences of multidisciplinary within two small to medium sized geography programmes in 'new' (Post-1992) universities in England. Little is known, for example, of the student experience of multidisciplinary within geography degrees in larger universities in the UK and internationally. The situation is likely to be very different in the USA where

taking modules from a range of disciplines is a normal part of the degree experience and where specific majors are not declared at entry to higher education. Research into the student experience of multidisciplinary within these other contexts would add a comparative element to the findings reported here. A further limitation of this study is that it does not explore the experiences of non-geography students about their views of sharing modules with geography students. The paper offers a very geography-centric perspective. The findings reported here are not necessarily transferable across other disciplines.

Turning from the limitations that stem from what the research did not survey to more endogenous limitations, the majority of examples of modules that students cited when they responded to this survey were core geography modules that have been opened up to students from other disciplines or are ones that are, at least in part, taught by staff who students would identify as geographers. There is little in these responses that speaks to the experience of geography undergraduates on modules that originated in other courses and become adopted onto geography course maps or are taught by members of staff who geography students would be likely to think of as non-geographers. A few examples that were captured included instances of some geography students feeling isolated or disadvantaged where they felt their shared module was predominantly aimed at a course other than geography or delivered by non-geography staff (see examples in table 4 below). Finally, the survey did experience a high mortality rate with 31 respondents dropping out of the survey after the initial demographic questions.

FINDINGS

Overall, students were positive in reflecting on their experiences of taking modules shared with other courses. Very few, only 7 of the 76 who responded to the question, felt that taking modules shared with other courses did not enhance their student experience. The majority, 45 (59.2 per cent) reported that taking these modules, overall, enhanced their learning experience on their geography degree (Table 1).

(TABLE 1 HERE)

The positive motivations associated with taking these modules were reflected in the responses to a series of statements exploring students' experiences within these modules (Figure 1).

(FIGURE 1 HERE)

The majority of student respondents reported positive reactions to and experiences on multidisciplinary modules. They spoke positively, in both closed and (later) open questions, of the lecturer speaking the same language as them, of being familiar with the ideas and sources discussed on the module, of expanded opportunities for learning, a broadening of subject knowledge and perspectives, working with people from other disciplines, positive impacts on core modules, enhancing career options and knowing what was expected of them in assessments. Students were a little more equivocal about the benefits of working with new people on multidisciplinary modules. In addition they did highlight some areas of concern with these modules around having reservations about taking this module, not knowing the majority of students on the module and tending to talk mainly with other geography students during classroom discussions. Whilst the majority of students did not feel disadvantaged by encountering material that was outside their discipline on these modules, just over one quarter (21, 27.6 percent) of students who responded to these statements did feel disadvantaged. Whilst the majority of students were generally positive about most aspects of multidisciplinary modules, for some these modules were problematic in some ways.

Open responses that reported positive experiences were summarized under a number of themes (Table 2).

(TABLE 2 HERE)

Whilst students cited a number of reasons for taking modules shared with another course, two ('the subject interested me' and 'they were compulsory') were mentioned by around half of all students responding to the survey (Table 3).

(TABLE 3 HERE)

The compulsory nature of these modules was undoubtedly significant within student motivations for engaging with multidisciplinary within their curriculum. However, a slightly greater number of respondents did cite interest in the subject as a motivation and many more cited some other positive motivation in their taking these modules. Of the 55 students who indicated that their reasons for taking these modules were that they were compulsory and / or there was no alternative available (some respondents ticked both boxes), only 16 (29.1 percent of these students) failed to

indicate an interest in the subject of the module as a motivation. Further, of these 55 students only 12 (21.8 percent of these students) did not indicate any additional positive motivation for taking modules shared with another course. Thus, of the 76 respondents who completed this question, 64 (84.2 percent) did cite at least one positive motivation associated with taking multidisciplinary modules.

Respondents were asked to think about taking a module shared with another subject and to outline in open text, what aspects of the module they felt were different to other geography modules they had taken and (in a later question) negative aspects of taking modules shared with another course. These questions produced very similar responses and have been amalgamated here. Some students referred to aspects that were clearly related to the different pedagogies of individual lecturers. However, they did identify a number of disciplinary issues or issues related to the resourcing and organization of the module, a consequence of the shift to more efficient multidisciplinary modes of delivery. These responses have been broadly grouped under five themes although a number of responses cut across multiple themes (Table 4).

(TABLE 4 HERE)

On balance, despite a number of positive remarks, the responses to the question ‘thinking about the module that you referred to in the question above, what aspects of the module, if any, struck you as different to other modules you had taken?’ were predominantly negative or ambivalent in tone (table 4). This might be a reflection of the wording of the question whereby ‘different’ could be interpreted by respondents as meaning problematic, or those students that did have issues with their multidisciplinary modules may have been more inclined to respond to the question. Whatever the qualifications, however, the responses do point to issues for curriculum designers and educators on multidisciplinary modules to be sensitive to: the potential barrier effects of different disciplinary languages and theoretical bases; the unbalancing effects of students experiencing some classes that are significantly bigger in size and organized differently to ones they are used to; the impacts of different disciplinary pedagogies and social issues emerging in the classroom. However, these responses did also reveal some positives that students valued in their exposure to other disciplines within their geography degree, primarily around the expansion of their Geographical imagination, in various ways, that developed through these modules (see also table 2). As one student commented: “The scale of the lecture. The inclusion of many academic theories. How geography can be stretched to many other areas I didn't before think relevant.”

Students were asked to specifically reflect on their experiences of groupwork within multidisciplinary modules, again with reference to the module that respondents had cited in previous questions. Groupwork here was taken at the design stage of the survey to refer to students being required to undertake some form of summative group-based assessment such as a group presentation. However, it is possible that some respondents interpreted this more broadly to refer to non-assessed interactive activities undertaken in class or small group seminar work within modules. As with other aspects of these modules the majority experience of groupwork was positive (Figure 2). In all but one of the statements that students were asked to respond to only a minority of between 10.9 and 19.2 percent of respondents to the question expressed that their experience had been negative in some way (see also some examples of problematic groupwork reported in table 4). The one exception was the statement 'I found groupwork on this module more stressful than groupwork on other geography modules'. Here 29 respondents (39.7 percent) agreed or strongly agreed with the statement. Despite the fact that groupwork here appeared to be more stressful for a significant minority of geography students, this did not seem to colour their overall views of the experience. This is evidenced by the positive responses to the other statements in the question, particularly the first statement where 49 (67.1 percent) agreed or strongly agreed that groupwork on the module was enjoyable and the final one where 38 (52.0 percent) of students agreed or strongly agreed that this groupwork had enhanced their learning experience. Of course it is not clear from these responses if these geography students undertook groupwork with other geography students or with students from other courses. A number of positive sentiments about working with or encountering students from other modules were reported in Table 2. Whilst some of these might refer to the general mixing of students from different disciplines that takes place within these modules, it is clear from the wording of some responses that some at least refer to undertaking summatively assessed groupwork with students from other disciplines.

(FIGURE 2 HERE)

For the majority of the students who responded to the survey, taking modules shared with another course did not have a disrupting effect on their curriculum. 19 students, out of the 76 who answered the question, indicated that these modules did not align with their learning on other modules. In total 55 (72.4 per cent) felt that the alignment between these modules and their learning on other modules was at least reasonably close (Table 5).

(TABLE 5 HERE)

No dominant themes emerged within the answers of those students who elaborated on this question. A range of points were raised by those students who felt that these modules aligned well, to some extent at least, with their learning on other modules. Some cited the nature of geography as a diverse, outward looking discipline and its close relationship with other disciplines, most notably biology, as underpinning this close alignment. Some students, for this reason, felt comfortable embracing perspectives from other disciplines within their geography degree. As one student commented: "As geography is such a widely applicable discipline I found that modules I also did around biology, history, sociology, criminology and psychology, all relevant to my course." Other students cited issues such as globalization and sustainability that cut across disciplines and with which they were already familiar. The other students who responded positively to this question cited similar contents and teaching methods as the reasons their learning aligned across these modules. Similarly, students who did not feel that the modules they took that were shared with other courses aligned well with their learning on other modules gave a range of reasons for this with relatively little consensus between them.

Some students, perhaps not surprisingly, cited that encountering other disciplines in their curriculum, of which they might have little or no previous knowledge or experience, was a disadvantage. One student argued, for example, "I had no knowledge of the basic theories needed therefore was at a disadvantage for both lectures and assessments". Whilst this was cited by only a small number of respondents with regard to this question it was echoed in some responses reported in table 4. One student did argue that this was worsened if staff presumed prior knowledge that might only apply to only one of the disciplinary cohorts in the class. Other students cited that whilst the contents of modules shared with other courses might be different to that of other modules on their geography degree, this was compensated for, to some extent at least, by the fact that they were required to deploy similar transferable skills across these different modules.

RECOMMENDATIONS

Although a small study, the findings from this research suggest that students on geography programmes are broadly receptive to working with students and staff from other disciplines as part of their undergraduate degree. However, there are challenges that need to be borne in mind by curriculum designers and course leaders. Interdisciplinarity within the undergraduate curriculum

requires careful planning. Rather than assuming those from outside the discipline will assimilate and adapt, embracing the diversity within groups of mixed disciplines and developing inclusive pedagogies and teaching and learning strategies rests with course teams. Ideally this should include dialogue between staff across the disciplines included within these developments. This might include collective reflection on the conscious and deliberate changes being undertaken including focus on specific issues such as the alignment of assessment practices across disciplines.

Dialogues of this kind by staff across the different disciplines involved did occur during the phase of curriculum redesign at the University of Gloucestershire discussed in this paper. This primarily involved the course leaders of each discipline's degree programme and a member of staff with line management responsibilities across these degree programmes. These discussions tended though to be somewhat instrumental and specific in nature and often focused on individual modules that were shared between two disciplines. This had advantages and disadvantages. The focused nature of these dialogues tended to ensure that pragmatic, workable outcomes were achieved. However, in typically being restricted to a small number of the overall teaching staff, the buy-in to the process of change for all staff was somewhat assumed rather than directly facilitated. Some of the issues highlighted by students in the responses to the survey might have been the result of this failure to engage the whole teaching staff of the relevant disciplines more directly. Thus, it would have been beneficial for the focused instrumental discussions that took place in this instance to be complemented by wider multidisciplinary discussions involving more of the teaching staff from across the disciplines involved. Practically there are difficulties here though as often the pace that restructurings, of the nature discussed here, precludes such dialogues evolving or makes them more difficult to achieve in practice. Our experience though strongly suggests that these dialogues are important to pursue.

Further curriculum reorganization of the kind discussed in this paper might prompt more localized reflection on staff's own teaching styles and learning strategies in the light of their expanded student audiences, maintaining an awareness of the different starting positions of students from different disciplines within their classes and especially on not taking too much for granted in terms of universal prior knowledge and understanding. In addition, this research has highlighted issues of the specificity of some disciplinary pedagogies, class management and different learning and teaching styles that staff should be aware of. This suggests collective planning of the type discussed above between teaching teams for such modules to negate these negative impacts. However, it is

important within this not to forget that for the majority of students on these modules, if their experiences mirror those of the students reported here, things are working reasonably well at least.

Resource efficiency is undoubtedly one of the main drivers behind the changes to the curriculum discussed in this paper. Indeed at the University of Gloucestershire it was explicitly stated as the prime driver of change by department management. Where this resulted in very large classes, perhaps two or more times the sizes of classes that students were used to, which were observed in some instances of the shared modules students cited in their responses to this research, this did lead to some negative responses from students concerning social issues within the classroom and access to lecturers. This could be seen as an opportunity for innovation in delivery of content through the deployment of pedagogies such as collaborative learning groups and flipped classroom models (Morton, 2008; Rau and Sherman Heyel, 1990; Stanley and Porter, 2002; Walker, Cotner, Baepler, and Decker, 2008). The benefits of such innovations are likely to be felt by the majority of students not only those disciplinary minorities who may feel excluded within large multidisciplinary classes. However, when planning these changes it should be remembered that there is evidence that large class sizes do impact upon student experience and achievement (Chapman and Ludlow, 2010; Cuseo, 2007). In the long-run if these issues remain unresolved they are likely to feedback and impact upon, perhaps undermine, the resources efficiencies that initially drove the changes. In the institutions discussed here these resource efficiencies were achieved without radical change to modes of delivery or fundamental pedagogies. The focus within the process of curriculum reorganization was biased heavily towards content and mapping and managing its transport across the boundaries of the disciplines for which it was originally designed. Compared to this the discussion of pedagogy was relatively limited. Perhaps then the experience of some students reported in this paper suggest that there is merit in using curriculum reorganizations of these kinds to reconsider, at the department level, the appropriateness of existing pedagogies for larger, multidisciplinary student audiences. However, for this to be realistically achieved requires the support of departmental and / or faculty management.

Working in groups within modules, on either formative or summative tasks, has real potential social benefit (Gillies and Ashman, 2003), something that came out in this research. However, our research also revealed that in multidisciplinary settings where students from other courses might be unknown, students were concerned about having to carry 'free-riders', whilst also highlighting practicalities around timetabling and organizing group meetings across different degree programmes. The former issue is one that has long been recognized within summative group work.

There is, however, an extensive literature on which to draw to attempt to manage these impacts (Maiden and Perry, 2011; Martin Davies, 2009; Rau and Sherman Heyel, 1990; Swaray, 2012). The latter issue though seems more difficult to resolve given the complexities of timetabling within higher education. Whilst electronic timetabling systems that are now common within higher education institutions, in the global North at least, offer the possibility of cross-programme timetable co-ordination and the planning in of spaces for group work meetings, these do not simply offer unproblematic technical solutions. Rather, they are heavily reliant on the labour, knowledges and capacity of department administrative staff who might also profitably be included in the planning and discussion of multidisciplinary developments of the types discussed here. Certainly, it has been the experience of the majority of the authors of this paper that the introduction of electronic timetabling systems has not been unproblematic.

Monitoring student experience and gathering feedback, particularly in the early stages of the implementation of multidisciplinary curriculum strategies is a key mechanism of identifying issues. If an issue is identified, particularly in modules from other disciplines that have been added to geography degree programmes, it may be advisable to add a Geographer to the module teams whose role is to articulate the relationships between the contents studied in this / these modules and students' geography programmes and to deal with any issues specifically relating to these students. This would be contingent though on staff capacity and availability and might, in the eyes of managers, undermine some of the teaching efficiencies that the curriculum redesign was originally intended to achieve. This strategy would also provide a differentiated student experience within the module and highlight disciplinary difference, potentially working against some of the inclusive outcomes of multidisciplinary classes. Where such modules are a compulsory element of geography degree programmes, this approach might be particularly appropriate though, ensuring that geography staff are visible and available on compulsory modules that originate beyond geography programmes.

It would appear advisable to introduce multidisciplinary early in geography students' learning journeys. Engaging first year students in multidisciplinary modules seems to be good preparation for further later engagement. There is evidence of the importance of induction to students' subsequent experiences and multidisciplinary strategies might profitably form part of students' academic inductions (Bradbeer, 1999; Richardson and Tate, 2013). Where such induction sits outside individual modules it offers the opportunity to contextualize multidisciplinary experiences that

students might encounter within specific modules perhaps mitigating some of the concerns that students in this research raised.

CONCLUSION

The research did not identify any insurmountable barriers to the introduction of modules shared between more than one degree programme into the undergraduate geography curriculum from the point of view of student experience. Indeed the research found a number of aspects of this development which were valued by students including a wide range of learning and teaching styles as students were exposed to more staff and more disciplinary contexts than would have been the case otherwise and the opportunities to meet more students broadened their social networks. The respondents to this research talked mainly about opening up 'geography' modules to students from other courses. Less is known from this research about the experience of geography students on modules from other courses that geography courses have 'adopted' onto their course maps. This would repay further research, specifically around the question of this being perceived as weakening or diluting the geography contents of degree programmes, and especially where this reduced the core geography contents on these programmes.

Ultimately it is worth asking whether students developed more multidisciplinary ways of thinking as a result of their having taken modules shared with other degree programmes as part of their geography degree. It is difficult on the basis of the data collected here to say anything categorical about this. The intention of this paper was to explore students' perceptions and experiences of this rather than to chart cognitive changes that resulted. To consider the latter would require additional research methods that might explore, for example, archives of student work seeking evidence of greater multidisciplinary within their approaches to the problems of assessment. Many students who responded to this survey did cite meeting people and ideas from other disciplines as positive aspects of their experience of shared modules. However, where issues with these modules were reported they were often, although not exclusively, the results of encountering discipline specific knowledges or pedagogies from beyond geography. Although the collective student experience of sharing some modules from their geography degree with other degree programmes was a positive one, we are unable yet to convincingly argue that the disciplinary perspectives of these students have been fundamentally disturbed by this process. That would be a worthwhile extension of the current research.

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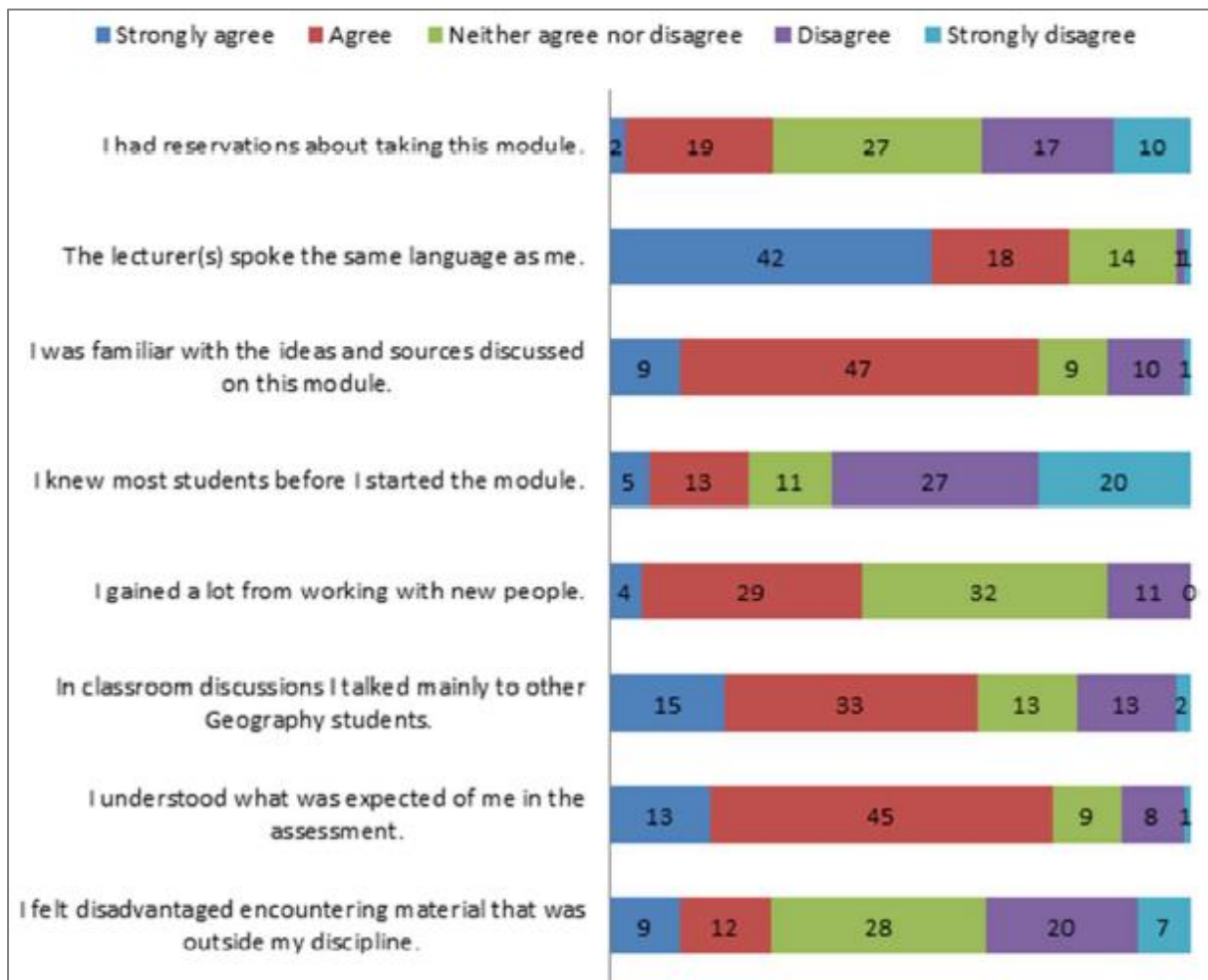


Figure 1: Thinking about ONE of your modules that was shared with another course, please could you indicate your responses to the following statements. Responses.

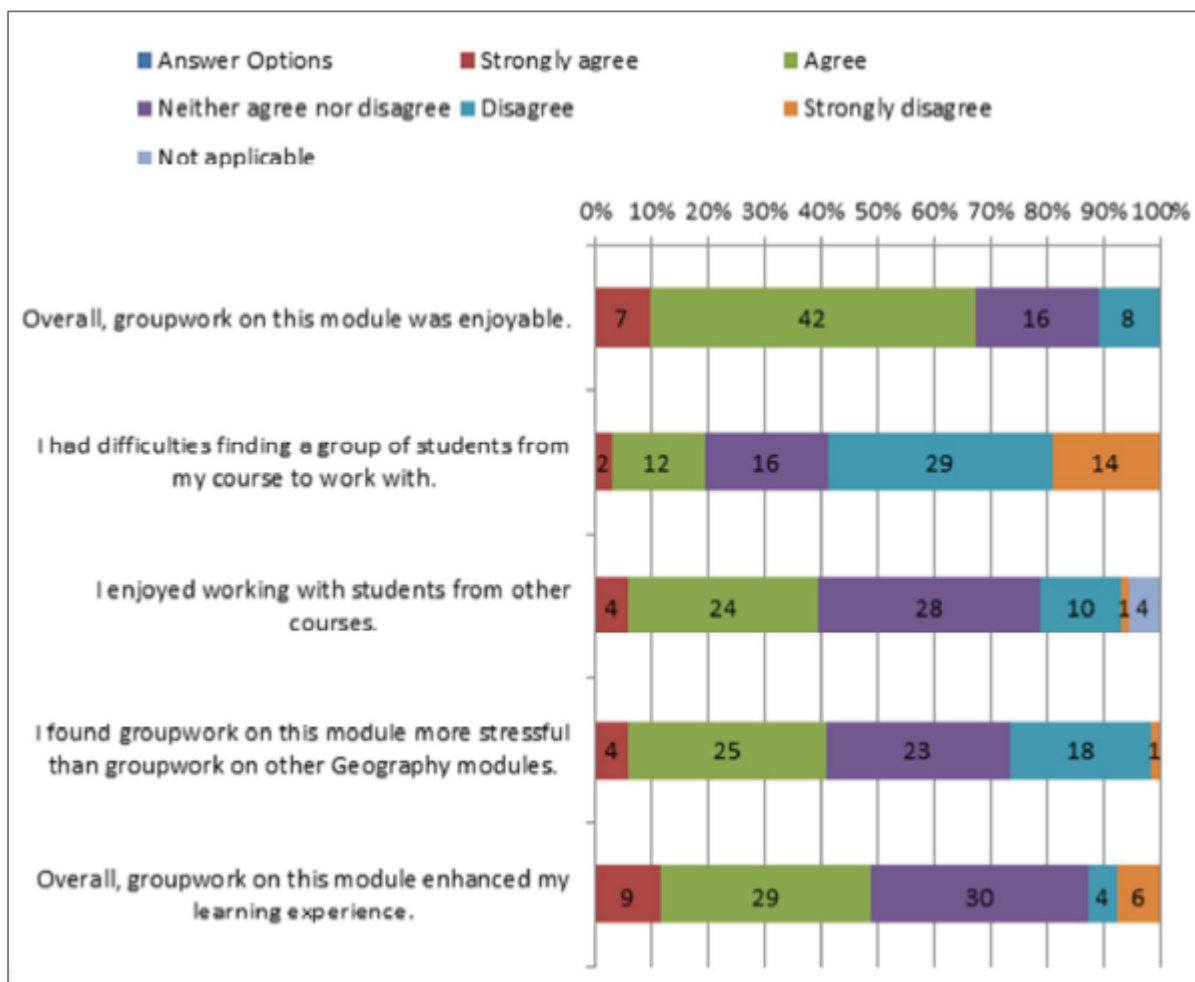


Figure 2: Thinking of the groupwork that you did on this module. Please could you respond to the statements below.

	Number	Per cent
Strongly agree	13	17.1
Agree	32	42.1
Neither agree nor disagree	24	31.6
Disagree	7	9.2
Strongly disagree	0	0

Table 1: Overall my student experience has been enhanced by taking modules shared with other courses.

General positive

"It made my course more interesting and more varied. I interacted with new people and lecturers."
"So far it is an interesting module and captures why I choose this degree."

Expanded opportunities for learning

"It's a great option - and I'm pleased the choice was available to me as it allowed me to 'direct' my degree in the way I wanted. As university B is a small university."
"It enabled me to meet a wider range of people and explore a wider range of study. This more extensive area of study has allowed me to better find the area of work I'd like to go into."
"Interesting to learn about something relevant and linked to my degree but not covered in geography."

Working with people from other disciplines

"Allows you to mix and meet new people who you would not normally talk to."
"I learnt a lot from people from other courses that I wouldn't have learned from those taking the same course as me - in group work in particular people from other courses, ie, economics, had a different input and view on things that was very helpful."
"It was good to share experiences and compare notes. It was also an opportunity to get to know other people and get a feel or an idea about what their chosen subject involved and how it overlapped with Geography."
"It has allowed me to meet new people from other courses and create new friendships, which I see as being a major part of University life."

Expanded perspectives on issues / broaden subject knowledge

"You can see the topic from a different point of view."
"Provides a different view point of a topic you might think you know everything about."
"I believe they gave a wider view to certain topics that could have been very one dimensional."
"Broadened my subject knowledge."

Positive impact on other (core) modules

"Studying (relevant) shared modules enhanced my understanding of topics in non-shared modules, I enjoyed being able to make links and draw knowledge from other areas."
"Diverse range of background knowledge in each session, gives an insight into other related subjects covered in other modules."
"I found that some of the core principles of the module could be used when studying for other modules."

Enhancing career options

"A greater range of material studied could potentially provide an advantage later on in life."
"Meet more people, doing entirely different things so you learn more about other subjects. Widens career prospects."
"A greater variety of understanding of different topics, which is helpful for a future career."

Table 2: Could you outline something positive about taking a module shared with other courses.

	Number	% of total respondents (n 107)	% who completed question (n 76)
The subject interested me.	56	52.3	73.7
They were compulsory.	52	48.6	68.4
I thought it would help with my future career.	21	19.6	27.6
There was a feature of the learning on the module that appealed to me.	17	15.9	22.4
I liked / knew the lecturer.	13	12.1	17.1
I knew little about the subject and was curious.	11	10.3	14.5
There was no other alternative available.	9	8.4	11.8
My friends were taking that module.	6	5.6	7.9
I wanted a change.	4	3.7	5.3
Other.	1	0.9	1.3

Table 3: Responses to the question 'Thinking of the modules that were shared with other courses. Why did you take these modules? Pick as many answers as apply to you'.

Specialist disciplinary content or knowledge

“Much more about history than I had expected, but still very interesting and I am happy that I chose this module.”

“This module was heavy based on ecology, although module assessments were very similar to standard assessments certain terminology was different (Latin species names etc.)”

“The knowledge content and the statistics.”

“Keywords used in the other subject were not explained in lesson time.”

“I feel that the lecturer has to go over work that I had to know to do the course, therefore anyone taking geography as their degree is having to go over things they learnt at A-level, the A-level we had to do to get onto the course, therefore why did we have to do it if others didn't?”

“Found it stressful and difficult to learn and study the module as I had no basic knowledge of the subject.”

“Some of the information is completely irrelevant to me.”

“There were several parts of biology which I did not at first understand while being taught how paleoecology can be used to reconstruct past environments. Biology students in the class showed that they had much more knowledge in this field. Especially the case when discussing Latin names of plants and taxa.”

Disciplinary Pedagogies

“A lot of practical exercises were taken within the lectures which got us more involved than other lectures attended.”

“Relied much more heavily on theories and there was a lot of discussion groups/tasks within the seminars than compared to my own course modules.”

“Having the lecturers from different courses was a new experience as they had different style to lecturing us. Some of these techniques did seem more suited to other courses and not Geography such as talking about a lot of theories and psychology based aspects when Geography is mostly based on scientific facts, which was a bit confusing.”

“I found that my lecturer started teaching as if we were all Sociology students rather than a Sociology, Geography and Tourism mix. Some of us were a bit behind with work as a result.”

“By year 3, lecturers with other courses know their students so being a member of a lecture of only 4 geographers and the rest biologists, makes you feel slightly alienated and disadvantaged. Also a lot of the technical 'language' or terminology from first and second year you do not have an understanding of. When writing assignments you have to do reading up on the base level material before conducting a more focused and research base.”

Organisation of the class

“E-learning and E-seminars. I'm not a big fan of these teaching/learning methods at all. I don't feel it works well or that individuals are engaged. Organising group work attendance is difficult enough without your fellow group members being from other courses and as such strangers to you. Add to this that they are on-line and it all becomes quite frustrating. Much prefer face to face interaction.”

“How other students in the module from different subjects didn't interact with the others in the module, how they complained about how the module was run because it wasn't the norm for them.”

“Strange doing the module with sociologists and criminologists, but good to see globalisation from their subject perspectives. A lot more people in the module, and very different assessment types than other modules.”

“The shared modules weren't as good as they were usually much larger classes.”

“There is less one to one time with the tutor, as it is a bigger class, so would be difficult to have individual conversations.”

“Was more difficult to work in groups when other courses shared modules due to timetable differences.”

“The layout of the module is different, and with it being for a bigger group of people than in my other modules, it is structured differently. Works well though.”

Assessment issues

“More hands on than theory. Assessment is very different - tests/reports compared to essays.”

“The assignments so far were harder because it seems that many of the concepts and theories are from other courses rather than my own, even if this is not the case I often fail to see the link between some of the concepts and Geography.”

Social issues impacting on the classroom

“The classes were very divided as we didn’t know the other people in the class, so it felt intimidating if you was the subject minority.”

“Third year Geography students were a class that were very familiar and comfortable with each other. Occasionally it seemed a little uncomfortable in a class.”

“There tends to be some segregation between the groups of students as they differ in their interests, this sometimes leads to one group being less vocal than others.”

“People do not mingle with each other rather than stay with the subject groups.”

“Not keen on having to form group working relationships with people within the first few minutes of meeting. You know nothing about the individuals, their commitment. This often leads to despair when you realise, by the end of the seminar, that you may well have to carry others”.

Table 4: Thinking about the module that you referred to in the question above, what aspects of the module, if any, struck you as different to other modules you had taken? Please feel free to refer to any aspect of the module. / Could you outline something negative about taking a module shared with other courses.

	Number	Per cent
The module aligned very closely with my learning on other modules	15	19.7
The module aligned reasonably closely with my learning on other modules.	40	52.6
The module did not align closely with my learning on other modules.	17	22.4
The module did not align at all with my learning on other modules.	2	2.6
Don't know	2	2.6

Table 5: What was the relationship between this module and your other learning on your degree.