

The London Geography Alliance: Re-connecting the school subject with the university discipline

Alex Standish*

UCL Institute of Education, University College London

Duncan Hawley

Geographical Association

Tessa Willy

UCL Institute of Education, University College London

The London Geography Alliance was established to provide a network of subject-based support to primary and secondary schools, by linking teachers and university lecturers. Workshops and fieldwork were conducted over a 17-month period to address different aspects of the geography curriculum. The effects of the project were evaluated using qualitative and quantitative methods. Primary school teachers improved their knowledge of geography and their confidence to identify and facilitate geographical learning. Secondary school teachers enhanced their subject knowledge, developed new ideas, schemes of work and resources for teaching, and improved their use of fieldwork techniques. The project showed how teaching in schools can be improved through making links to university disciplines.

Keywords: subject knowledge; subject-specific pedagogy; professional development; curriculum; geography

Introduction

In the autumn of 2013 the Greater London Authority (GLA) announced the launch of the London Schools Excellence Fund with a view to improving the quality of teaching in the capital through enhancing the subject knowledge and skills of teachers. A fund of approximately £25 million was created by the Department for Education and the GLA, and a call was put out for proposals that would support the aims and principles of the Fund, specified as follows:

The London Schools Excellence Fund (LSEF) is based on the hypothesis that investing in teaching, subject knowledge and subject-specific teaching methods and pedagogy will lead to improved outcomes for pupils in terms of attainment, subject participation and aspiration.

(GLA, 2014)

The timing of the LSEF coincided with the Coalition Government's review of the national curriculum and a shift towards a knowledge-led curriculum. The GLA expressly wanted to work with projects that would contribute towards meeting teachers' needs with respect to the new national curriculum, and that were 're-focused on knowledge-led teaching' (ibid.).

Geography education in schools, specifically, has experienced at least two decades in which subject knowledge has been deprioritized with respect to a focus on pedagogy, social causes, and values and attitudes (Marsden, 1997; Standish, 2007; Standish, 2009; Lambert 2011). This

* Corresponding author: email – a.standish@ucl.ac.uk

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period has also witnessed the steady erosion of subject-specific support for schools in the form of expertise channelled through local education authorities, whose power and influence have been curtailed by a stream of government policy. Combined, these two factors have left some schools lacking the foundations to develop a knowledge-based curriculum and many teachers without the requisite geographical knowledge needed to provide pupils with a rounded geographical education. It is for these reasons that we decided to put forward a proposal for a London Geography Alliance (LGA) comprising schools, university geography departments, and the Institute of Education, University of London (IOE)¹. The application was successful and the project received funding of approximately £150,000 over a two-year period, commencing in January 2014.

The evolving policy context

For much of the modern history of state education, the aims of schools and universities were closely aligned, with universities involved in the school curriculum. Geographers at the turn of the nineteenth century, such as Halford Mackinder, made their case for the intellectual basis of the subject as being applicable to both schools and universities alike. The Geographical Association for teachers was founded in 1893 by academic geographers who played a role in establishing the curriculum for secondary schools. With reference to school geography prior to 1970, Eleanor Rawling recalls the influence of lecturers upon the school curriculum: 'The close relationship with school geography meant that there were considerable efforts to disseminate the new ideas to secondary schools' (2001: 22).

Following the establishment of the independent Schools Council in 1964, the 1970s heralded a period of curriculum innovation. In geography there were three projects that had widespread impact on the school curriculum: Geography for the Young School Leaver, Geography 14–18, and Geography 16–19. These projects reflected a period in which the aims of education were broadening towards social and personal development. The Geography 16–19 project, for instance, sought to open up the 'affective domain' of education with an emphasis on values and attitudes in geography (Naish *et al.*, 1987: 7). Despite the specific nature of each project, their new pedagogic approach had influence beyond the target population, suggests Rawling: 'The emphasis was on moving school geography away from regional and descriptive work and focusing on more active learning styles and more relevant thematic content'. This included more 'humanistic, qualitative and issues-based approaches' (2001: 24).

The broadening of the aims of education continued in the 1980s with a growing emphasis on pre-vocational skills in the curriculum. It was during this decade that central government became directly involved with the school curriculum, culminating with the launch of the national curriculum in 1988. Replacing the Schools Council were the School Curriculum Development Committee (1984–8) and, later, the National Curriculum Council (1988–93). Both were 'essentially created to allow government to exercise firmer central control over the curriculum and assessment' (Rawling, 2001: 24). The growth of government influence over the school curriculum has been paralleled by a steady erosion of the curricular links between schools and universities.

Under New Labour (1997–2010), schools were treated as a site for various interventions in the form of citizenship education, social and emotional learning, environment and sustainability education, and global education (Whelan, 2007; Ecclestone and Hayes, 2008; Standish, 2012). The Qualifications and Curriculum Authority (1997–2010) was the new government body appointed with responsibility for the curriculum. The QCA worked in collaboration with a number of non-governmental organizations to pursue its new aims for the curriculum. For geography, Oxfam

and the Development Education Association contributed to the emphasis on global citizenship and development aims in the curriculum.

It was against this policy backdrop that the 2010 Coalition Government planned to review the national curriculum, as outlined in the White Paper *The Importance of Teaching* (DfE, 2010). In terms of the curriculum review, the emphasis was on 'the core knowledge and understanding that all children should be expected to acquire in the course of their schooling' (ibid.: 41). During the national curriculum review, subject-expert working groups were set up to recommend ways in which teachers could be supported in the transition to the new curriculum. There was recognition that the new curriculum would challenge some teachers in terms of its subject knowledge demands. With this aim in mind, the GLA and the Department for Education established the LSEF, tendering bids for groups offering to support the subject knowledge of teachers. In so doing, they created the means and opportunity for curriculum innovation that has perhaps not been seen since the curriculum projects of the 1970s.

Theoretical basis of the project

Subject knowledge is not the only element that makes a good teacher. Teachers also need to be skilled in pedagogy, planning, organization, communication, and assessment. Nevertheless, the authority of the teacher derives from their disciplinary knowledge as it is the task of schools to engage children in an open 'encounter with humanity's intellectual adventures' (Pring, 2013). It is for this reason that the curriculum is usually divided into subjects, most of which are related to one or more disciplines or realms of meaning (Phenix, 1964).

Although teachers enter the profession with a basis of disciplinary knowledge, we take the view that knowledge is dynamic, and that intellectual enquiry is something that teachers themselves need to be continually engaged with. The school curriculum should therefore also be dynamic, reflecting shifting disciplinary paradigms and new knowledge. Without links to the disciplines from which subjects derive there is a danger that the curriculum becomes sterile and teaching repetitive and dull.

However, the matter of knowledge and the curriculum is not necessarily straightforward, as knowledge is produced in a socio-political context. Here, we adopt the *social realist* position that disciplinary knowledge is both socially constructed *and* objectively related to the real world (Young, 2008). This is a departure from both the overly socialized social constructivist theory as well as the under-socialized view presented by the Coalition Government (Young and Muller, 2016). The former fails to adequately differentiate subjective experience from theoretical knowledge. The latter does not offer a sufficient account of how knowledge is socially contextualized, meaning the content of the curriculum tends towards stasis and is assumed rather than rationalized.

In schools, teachers *re-contextualize* disciplinary knowledge into school subjects that make up the curriculum (Bernstein, 2000). So, while university lecturers can teach teachers about the latest ideas, theories, and data, it is teachers who have to make decisions about how to re-package this knowledge for pupils. It is here where the expertise of educationalists makes an important contribution, mediating between university geography and teachers, and suggesting ways to re-contextualize knowledge into schemes of work that will take children through a progression of knowledge and understanding.

Subject knowledge matters because '[s]ubjects bring together "objects of thought" as systematically related sets of concepts' (Young, 2014: 98). Concepts, as generalizations and abstractions, are a means for simplifying a complex reality by sorting things into categories. Russian psychologist Lev Vygotsky was well-attuned to the significance of concepts: 'with the

help of the concept, we are able to penetrate through the external appearance of phenomena to penetrate into their essence' (Derry, 2014). Each new concept we learn is inferred from other concepts (Brandom, 2000). Therefore, it is the role of the teacher to teach pupils the concepts that enable epistemic assent (Winch, 2013) or to achieve disciplinary progression (Bennetts, 2005). Subjects, then, are the most reliable means we have of making sense of the world. This reasoning brings us to concur with the goals of the LSEF in emphasizing subject knowledge as well as the necessity for subject-specific pedagogy, as opposed to pedagogical genericity.

Project activity

The IOE launched the LGA in January 2014 by forging partnerships with twelve schools (six primary and six secondary), three university geography departments (University College of London, King's College, Queen Mary University), and the Geographical Association. The initial schools and universities called to join the project were invited through existing connections. We wanted to begin with schools that had a good foundation and/or commitment to geography, so as to establish a strong model upon which to build. At the start of the summer term, a larger pool of schools was invited to join the project, and numbers grew to 13 primary and 20 secondary schools. The schools that joined the LGA were varied in type, geographical location (both inner and outer London boroughs), geographical expertise, and teacher experience. While the majority were state-funded primary schools, academies, or comprehensive schools, there were two independent schools and one free school.

The project engaged teachers primarily through workshops and fieldwork. Financial support was provided for teachers to be released for afternoon workshops, the occasional day of fieldwork, and for purchasing teaching materials. Primary workshops and fieldwork were held at a range of locations and led by educationalists from the Geographical Association, the Royal Geographical Society, the Field Studies Council, or lecturers in geography education. Topics included: 'What is geography?', the geography curriculum, early years geography, fieldwork (in London and the Lake District), mountains, rivers, land use in upland regions, the Americas, mapwork skills, and micro-climates. The LGA for primary teachers is coordinated by Tessa Willy.

For secondary teachers, most workshops and fieldwork were led by a geography lecturer from one of the three university departments. Topics included: rivers (upland and in London), coasts, climate change, glaciation, geomorphology, geology, hazards, environmental monitoring, London, the developing world, geopolitics in Africa, geographical information systems, and fieldwork in the Lake District. The supporting role of the three university departments was critical to the establishment and success of the LGA. The LGA for secondary teachers is coordinated by Alex Standish.

A project website (www.londongeography.org) was established as a means to archive and share teaching materials. This was also a means to communicate with the outside world about the work of the LGA.

Project evaluation methodology

LGA project activity was evaluated in terms of *teacher outcomes*, *pupil outcomes*, and *wider school system outcomes*. The timeframe for project evaluation was just 17 months or less, between the collection of baseline (March/May 2014) and final data (July 2015). Duncan Hawley was appointed as an independent evaluator for the project. He was responsible for collating, presenting, analysing, and evaluating all data.

Three key approaches to collecting evidence and evaluation were adopted. These were: (1) teacher questionnaires; (2) teacher interviews; and (3) school visits, including pupil focus groups.

Questionnaires

A questionnaire was developed to survey the geographical knowledge and confidence of all primary and secondary teachers. A second questionnaire regarding teachers' efficacy was provided by the GLA (Tschannen-Moran and Woolfolk Hoy, 2001). Both of these were given to all teachers at the outset of the course (baseline survey) and at the end of the course (post-project survey) so that, in this respect, all course participants formed the 'comparison' group.

The return rate for questionnaires was acceptable (between 50 and 70 per cent). There was also a degree of 'churn' in participating teachers over the course of the project, so that some of the teachers who completed the final questionnaire had not completed the initial survey. This was a limitation in the data. Therefore, the impact of the LGA course on individual teachers was difficult to ascertain, but given the wide range of teachers and their individual experiences, a fine-grained analysis is less indicative of the overall impact on teachers; rather, comparisons between pre- and post-project answers to questionnaires were analysed.

Teacher interviews

Interviews were arranged with two primary teachers, as well as two teachers and two heads of department (HoDs) at secondary level. Selection of schools and teachers was determined by availability and access. All teachers were given the opportunity to participate in the interview part of the evaluation. These semi-structured interviews allowed for the project evaluator to ask in-depth questions about project participation and how the school had made use of the LGA.

School visits and pupil focus groups

All schools were given the opportunity to be visited by the external evaluator, and three visits to schools were arranged (one primary school and two secondary schools). These were helpful in providing context and opportunity for face-to-face discussion and to view samples of pupils' work. Discussions with pupils needed significant interpretation to draw out any changes to teaching. Pupils could describe what they had been taught and outline teaching styles, but few had any direct understanding of how the teaching and content of geography lessons had changed from lessons taught prior to the LGA course.

On balance, it is reasonable to be confident that the data collected using these three different methods enable a sound assessment that reflects the general impact of the LGA course on beneficiaries. One further limitation of the methodology is that it was designed with an expressed purpose in mind: to explore the pedagogical effects of improving teachers' subject knowledge. Therefore, although research instruments directed teachers to focus their answers on this aspect of their teaching, some gave answers pertaining to other areas in the more open-response questions.

Project impact: Primary schools

With a project focus of improving teachers' subject knowledge and subject pedagogy, the principal focus of our evaluation was on teachers themselves, how they made use of the project, and its impact on their preparedness to teach the new curriculum.

Primary teacher outcomes

The primary school sample comprised teachers with a wide range of degree backgrounds, with only one having completed a degree in geography. Four of the teachers were in their first two years of service, one had been teaching for four years, and the other, 17 years. Although this was not a large sample, it is considered as offering a reasonable representation of the course cohort for primary teachers.

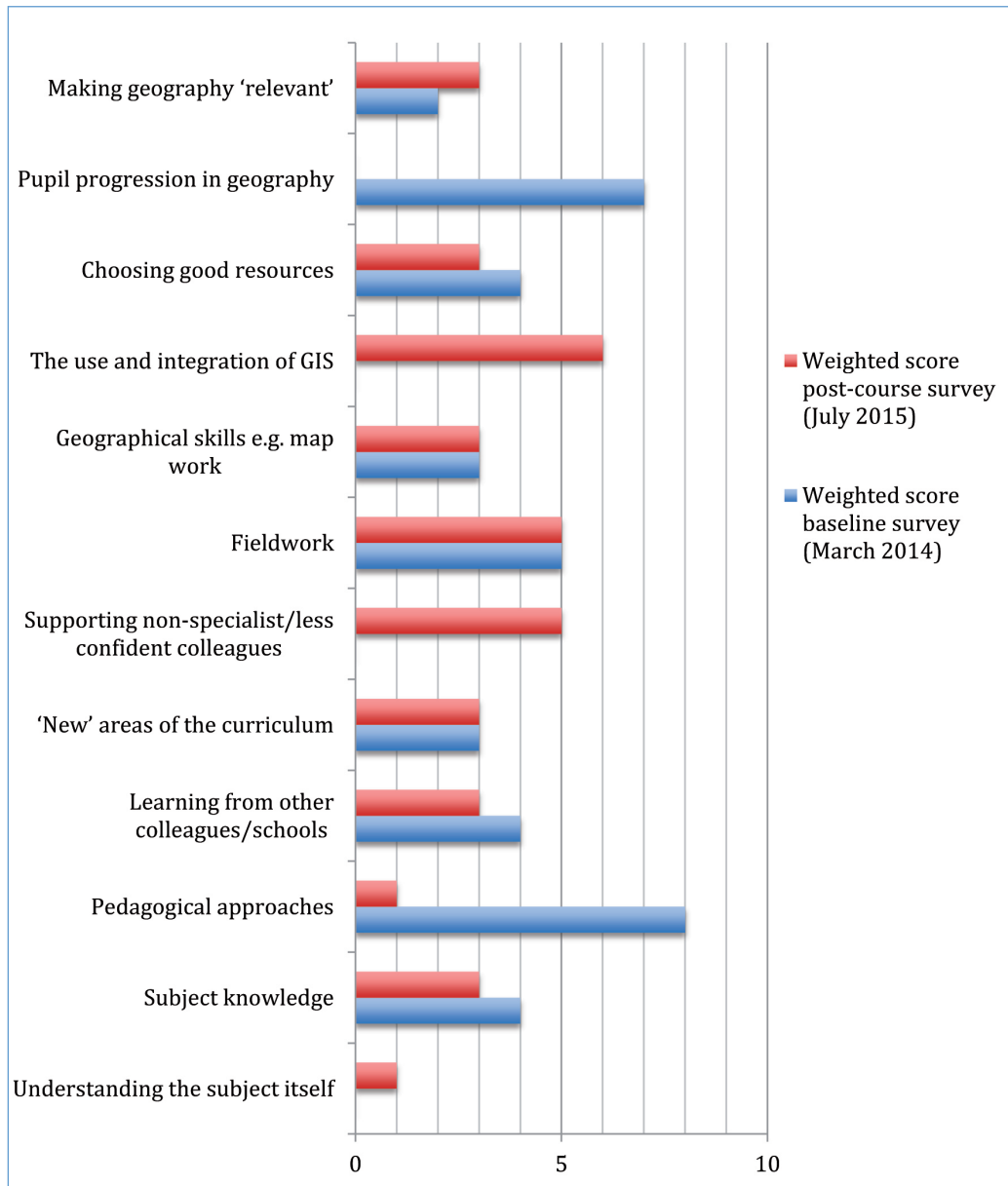


Figure 1: Support for aspects of geography teaching (primary).

Primary teacher ranking of priorities and provision by the LGA course by weighted scores

In the baseline survey, participants were asked to identify and rank the top three priorities for aspects of geography teaching in which they would like most support. In the post-course survey, the teachers ranked the top three aspects for which they considered the LGA course had provided most support. Each aspect was given a score by tallying the number of mentions by rank, then weighting each rank by multiplying each rank tally by its inverse (i.e. first rank = $\times 3$, third rank = $\times 1$), with the score then adjusted proportionally to the sample size. The results are shown in Figure 1.

Perhaps, expectedly, primary teachers were mixed in their ranking of perceived priorities for support. The post-project survey of support provided by the LGA project indicates that, in general, it was a good match or gave better support for the perceived needs than at the outset. There were some key aspects that did not match the original ranking – most markedly, support for ‘pedagogical approaches’ fell short of the originally perceived need. However, there were some gains, particularly in the use and integration of GIS and in supporting non-specialist colleagues.

The survey and analysis indicate that the LGA project provided much more balanced support across all aspects of geography teaching than those areas originally prioritized by teachers. It seems likely that teachers transferred their need for pedagogical approaches to a broader range of priorities, including knowledge of new areas of the curriculum. Other evidence gathered indicates that the primary teachers did value the pedagogical approaches explored during the project. They appear to have understood how their participation on the project had value in developing the geography teaching of less confident colleagues in school.

Participants were asked to complete a sense of self-efficacy survey indicating their opinion of their ability relating to general pedagogical skills and relationships with pupils in lessons. The survey was completed at the commencement and end of the evaluation period by teachers self-scoring their views on their competence in relation to each of the statements (using a 10-point scale: 1 = nothing, 5 = some influence, 10 = a great deal). For each survey, a mean was calculated for the individual scores of each teacher and these were then used to derive an overall mean score. The differences between the mean scores of each survey were calculated to indicate any shift in teachers’ opinions on their effectiveness in general pedagogical skills and relationships with pupils in lessons. The results are shown in Figure 2.

The highest shifts in self-efficacy relate to motivating pupils, challenging pupils, and crafting good questions. These are indicative of a more confident understanding of geography and how it can be incorporated into teaching in interesting ways. Consequently, it is surprising to find a relatively small increase in teachers’ self-assessment of their effect in fostering pupil creativity.

The overall mean self-efficacy score in the baseline survey was 6.0 and in the post-project self-efficacy survey this had increased to an overall mean self-efficacy score of 8.0, thereby indicating a perceived higher level of effectiveness in pedagogy and relationships with pupils, post-project.

Participants were asked to self-evaluate their confidence levels in contemporary subject knowledge and understanding for areas of geography across the curriculum at the beginning and the end of the project evaluation period. Respondents scored 1 for high confidence and 5 for low confidence. Calculation of the difference in score between the baseline score and post-project survey score for each topic gave an indication of the impact of the course on teachers’ confidence in their levels of subject knowledge, with a score of 1.0 representing one whole confidence shift (e.g. from ‘unconfident’ or ‘quite unconfident’ to ‘confident’). The results of the baseline survey are shown in Figure 3, and the results of the shift effect measured post-project are shown in Figure 4.

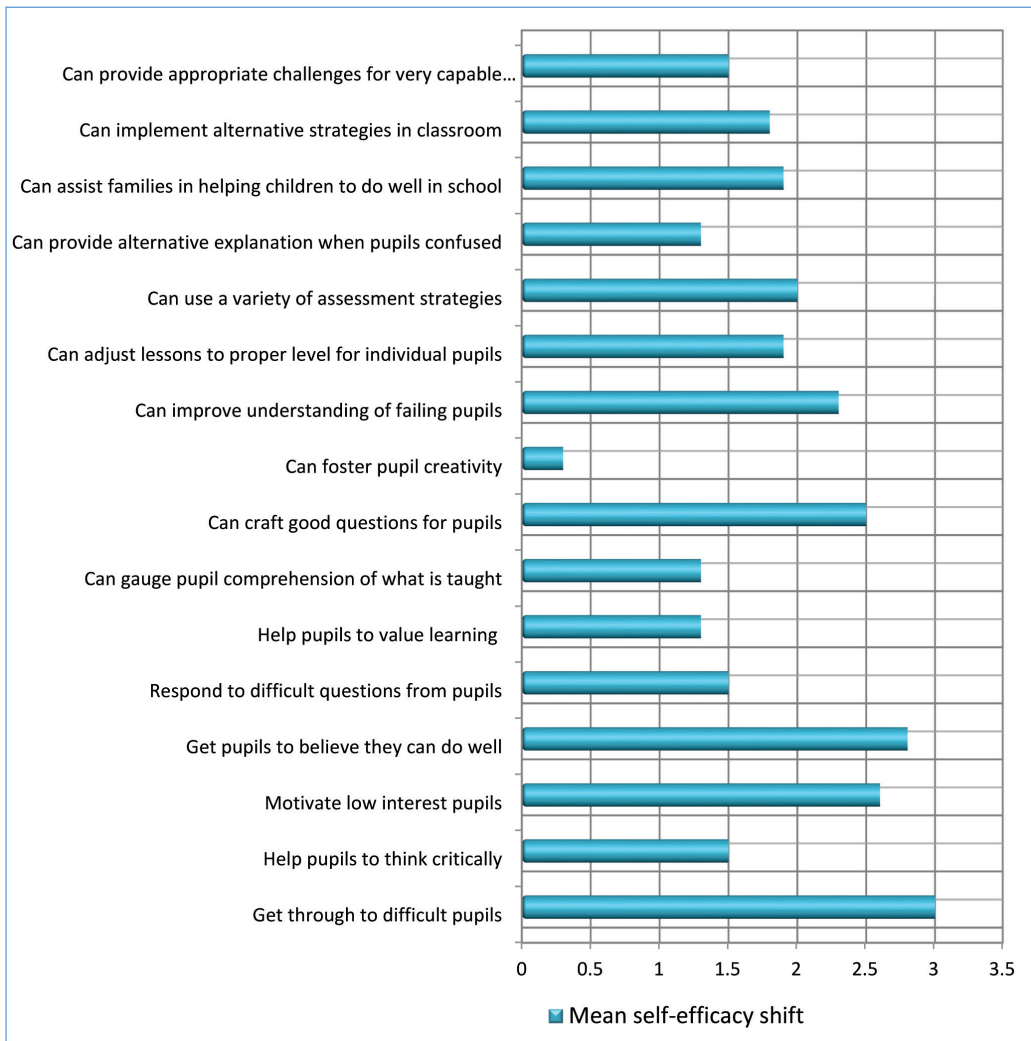


Figure 2: Primary teachers' mean self-efficacy shift.

Impact of LGA course on classroom pedagogy and relationships.

Scores indicate the difference between teachers' pre- and post-course self-assessed efficacy in relation to each of the statements using a 10-point scale (1 = nothing, 5 = some influence, 10 = a great deal), calculated as a mean of all teachers' scores

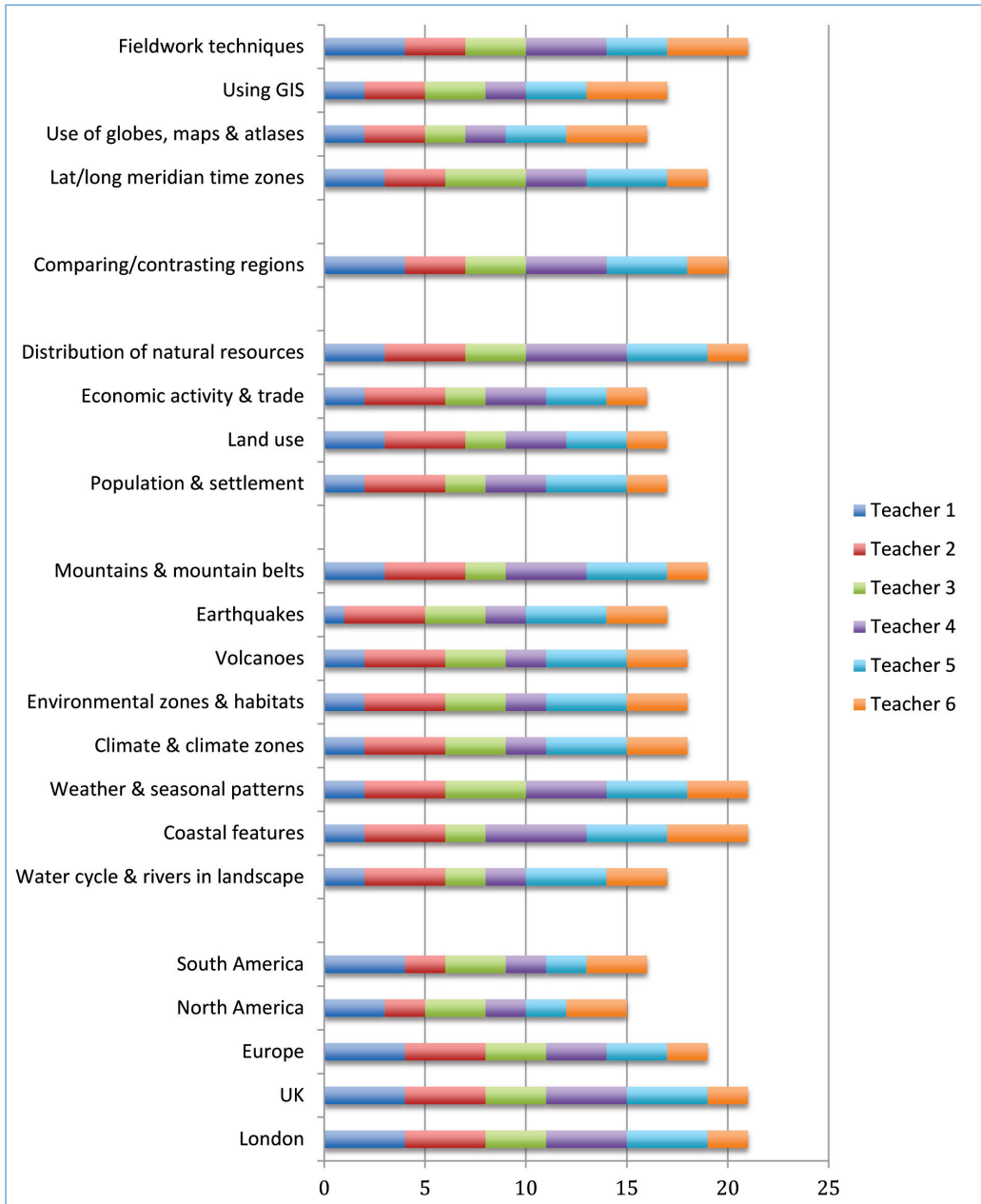


Figure 3: Primary teachers’ subject knowledge confidence by national curriculum topic (baseline).

Cumulative for each topic: teachers’ self-score of level of subject knowledge and understanding.
 Short bar length = low confidence (score = 1); long bar length = high confidence (score = 5)

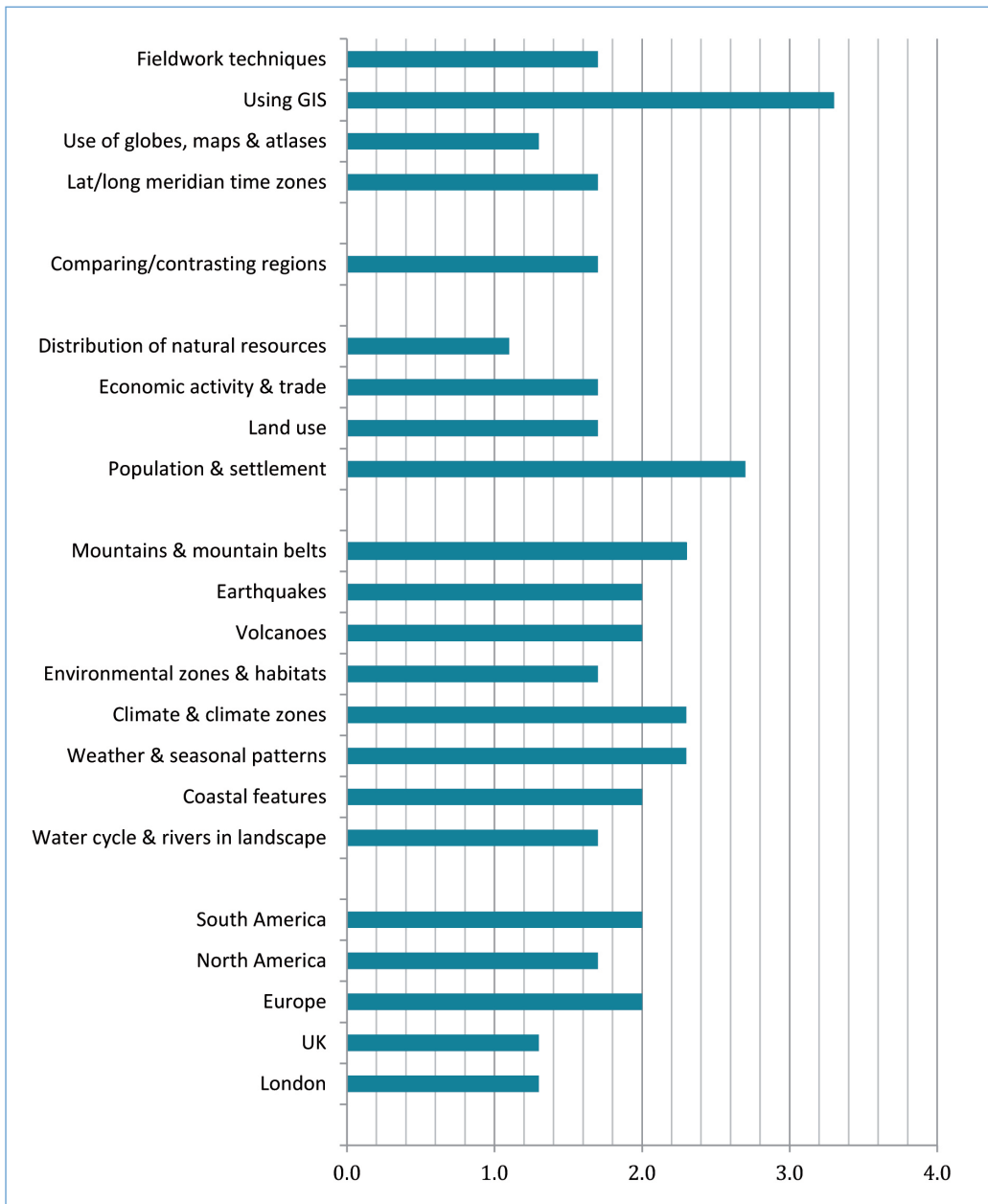


Figure 4: Overall shift in primary teachers' confidence of subject knowledge.

Difference in the mean primary teachers' confidence self-score for national curriculum topics between the baseline survey and post-project survey (1.0 = one whole confidence shift)

The data indicate marked improvement in teachers' confidence in their subject knowledge across all topics of the new curriculum. Teachers' confidence in knowledge of all national curriculum topics improved by between one and three measures of confidence.

The post-project questionnaire included an open-response question asking ‘How has the LGA project helped you as a teacher?’ The most frequent responses by primary teachers were: ‘updating subject knowledge’ (2); ‘linking ideas across geography’ (2); and ‘sharing good practice’ (2). There were single mentions of: ‘the importance of geography as a subject’; ‘improved confidence of subject knowledge’; and ‘improved understanding of progress in geography’.

Primary pupil outcomes

The post-course questionnaire included an open-response question asking ‘How has the LGA project helped your pupils’ geographical knowledge, skills, and understanding?’ Primary teachers reported that these had improved through provision of ‘more outdoor experiences’, ‘increased pupil enthusiasm/engagement’, and ‘experience of wider skills’. Single mentions were also noted for ‘improved challenge’ and ‘new topics’.

Evidence was also gathered from a discussion with a focus group of pupils from years 2 to 5. Most of the pupils understood the geography in the context of a topic rather than it being taught as a discrete subject, but it was clear from their incorporation of geographical language, in their descriptions of activities, that they were beginning to develop a distinct geographical perspective on the topics. One year 5 pupil was able to outline the geography in art, describing the paintings of Turner as ‘landscapes’ and, for a topic on changing the environment, the pupil mentioned a debate on the different ways the land is used in rainforests. The pupils could name oceans and continents and describe important skills for making a map. The pupils were able to recall and clearly outline examples of geographical topics and activities they had completed during the year, which included a range of activities that can be directly traced to the LGA course: for example, using a balloon to create a globe (year 4) and using the school’s outside area to make a map (year 5).

Primary school system outcomes

In response to the open question ‘How has the LGA project helped your school?’, primary teachers mentioned: ‘school staff training in geography’ (4); ‘using new resources’ (3); ‘introduced new schemes of work’ (2); ‘introduced new teaching ideas’ (2); and ‘links to secondary schools/discussion with secondary teachers’ (2). The question of how the LGA project has helped develop awareness of others’ work and of other teachers and schools gave three comments on ‘sharing ideas’, and one noting how the project had exposed a variety of teaching methods.

A visit to a primary school enabled an assessment of the impact on the key stage 2 humanities coordinator, and more widely around the school. Based on learning gained from the LGA course, the coordinator had developed a school geography policy that emphasizes purpose and progression in geography. For example, it includes the statement: ‘There should be a fair balance between core geography and sense of the geography, allowing children to understand the size, scale and place of features, whilst relating to the various areas empathetically.’ Observation of work completed by different classes across the school, and of displays on the walls in classrooms, indicate that this policy and these ideas on how to teach geography in terms of content, key concepts, and activities have been effectively disseminated throughout the school.

The deputy head of the school highlighted four key effects of the LGA project on the school: the coordinator has become a strong advocate for geography, enthusing and inspiring other teachers; the coordinator is now able to lead in-service training, expressing a clear vision of geography teaching; teachers are much more confident about what makes a good geographical learning experience, and they are planning geography more confidently into topic work; and

all teachers and most pupils are now incorporating more geographical language, skills, and understanding in their topics.

The coordinator from a different primary school reported that participation in the LGA had stimulated the development of a school curriculum map for geography. Previously, geography had been 'hidden' within other subjects such as history or literacy. The curriculum map was to indicate how geography could be integrated into the curriculum rather than taught as a 'tick list' or 'assumed teaching'. Previously, geography was considered as part of the school garden activities because the garden is an 'environment', without any clear thinking and reference to key geographical learning. Content and activities from the LGA activities were fed into planning conversations with other teachers – who have now taken on a much stronger sense of ownership for incorporating geography in their planning and teaching. For example, a year 6 topic on the local area, which previously was a local history project, now incorporates fieldwork to look at land use and environmental quality, with an enquiry into how the local area might be improved.

Project impact: Secondary schools

Secondary teacher outcomes

For secondary school teachers, the sample comprised mostly teachers with a degree background in geography, with an even mix of BSc and BA degrees – suggesting different subject expertise – and a few teachers with degrees in cognate subjects (e.g. geology). The majority of teachers had between six and eight years of service, with the least being two years and the most having 25 years of service.

The priorities for aspects of geography teaching, before and after the project, are shown in Figure 5. Overall, the results indicate that the LGA provided high levels of support for teachers in most aspects, with a reasonable balance between teachers' perceived need at the beginning and at the end of the course. The most noticeable difference is in how the course provided support to learn from other colleagues and schools. At the outset of the course this was not a strongly perceived need; but, at the end of the course, the teachers clearly considered this aspect to be of significant value.

The baseline data from the sense of self-efficacy survey revealed a mixed picture of teachers' opinions about how they work in the classroom and with their pupils. The scores show a 'raw range' from 4 to 10; the range of mean scores for the aspects is from 5.2 to 7.4, with an overall mean score of 6.8. The post-project survey shows an overall positive shift (with a mean of 7.2) towards a higher view of effectiveness in the classroom and a slight narrowing of the variation of teachers' views.

The greatest positive shift was in teachers' views of their ability to craft good questions for pupils (shift effect = 1.0), followed by a shift in views on their ability to provide appropriate challenges for pupils (Figure 6). Five aspects had a shift effect of 0.7, two an effect of 0.5, and two had small negative shifts. As these negative shifts are minor, we do not perceive this result to be significant; it may simply reflect a re-balancing of priorities.

For secondary teachers' subject knowledge confidence, the baseline data revealed the respondents had confidence for most topics, with slight variations between teachers (Figure 7). Overall, teachers were generally less sure about their level of knowledge and understanding of physical geography, place knowledge of Russia and the Middle East, and knowledge of GIS.

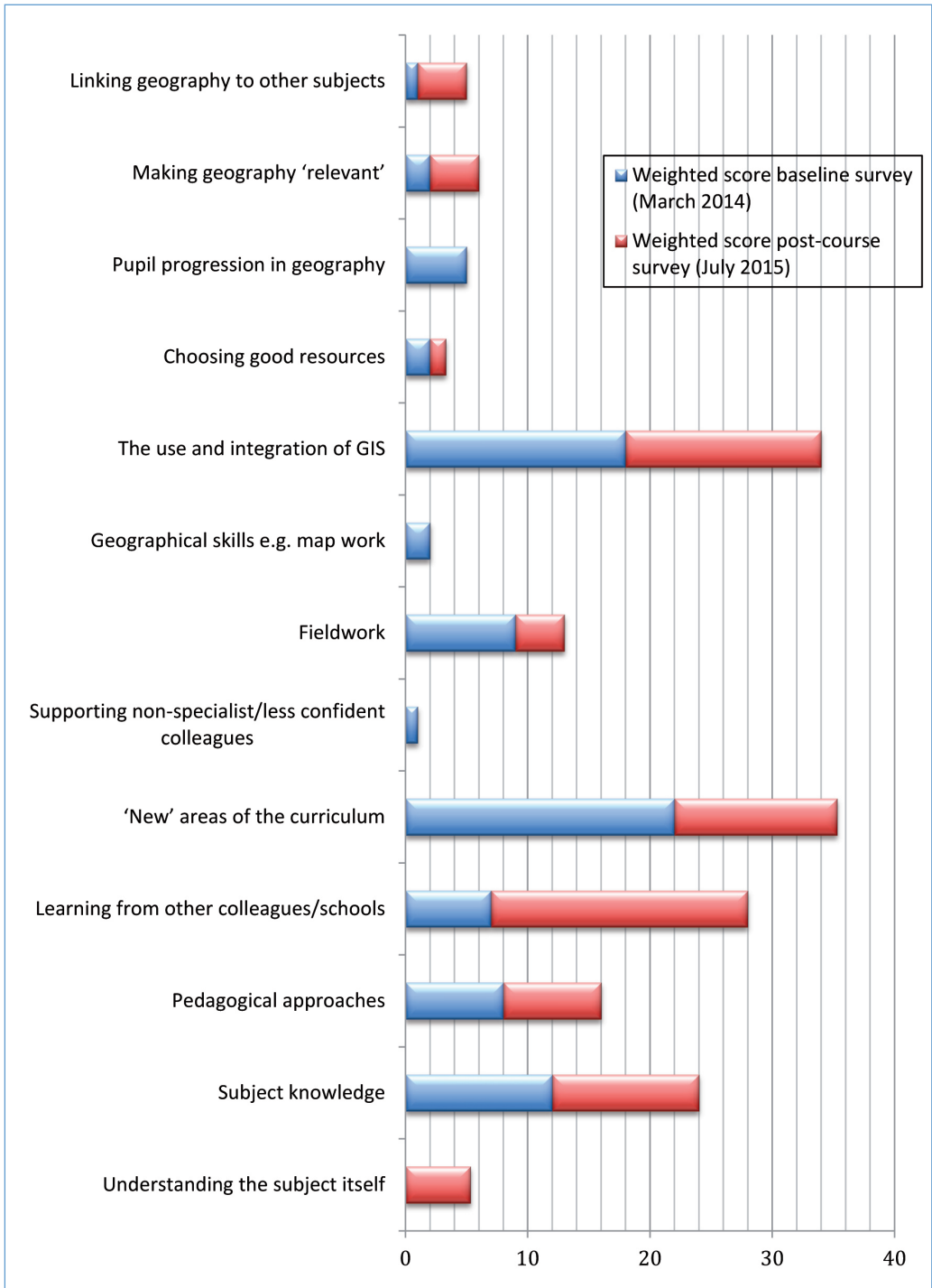


Figure 5: Support for aspects of geography teaching (secondary).

Secondary teacher priorities and provision by the LGA course indicated by weighted scores

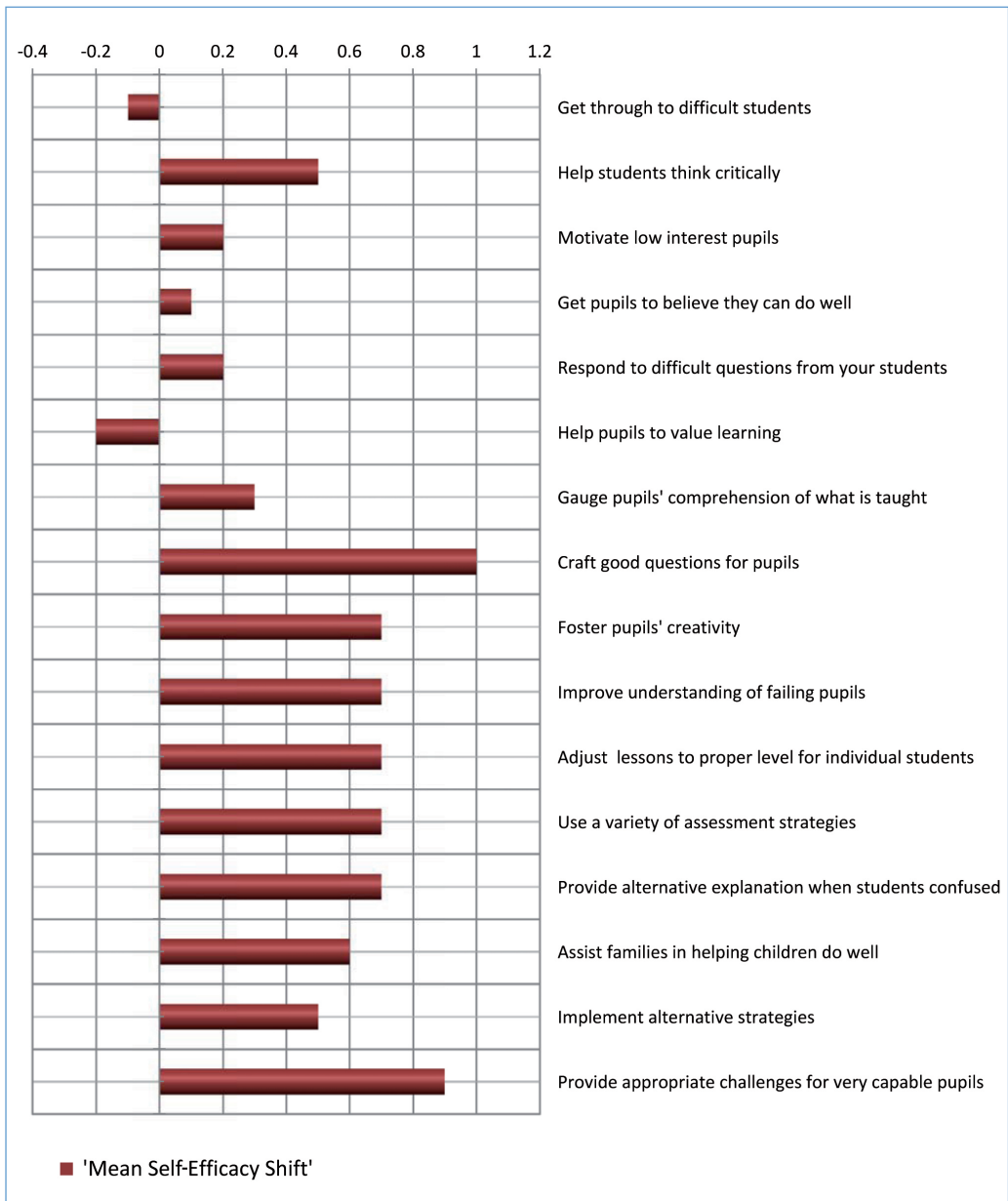


Figure 6: Secondary teachers' mean self-efficacy shift.

Impact of LGA course on classroom pedagogy and relationships.

Scores indicate the difference between teachers' pre- and post-course self-assessed efficacy in relation to each of the statements using a 10-point scale (1 = nothing, 5 = some influence, 10 = a great deal), calculated as a mean of all teachers' scores

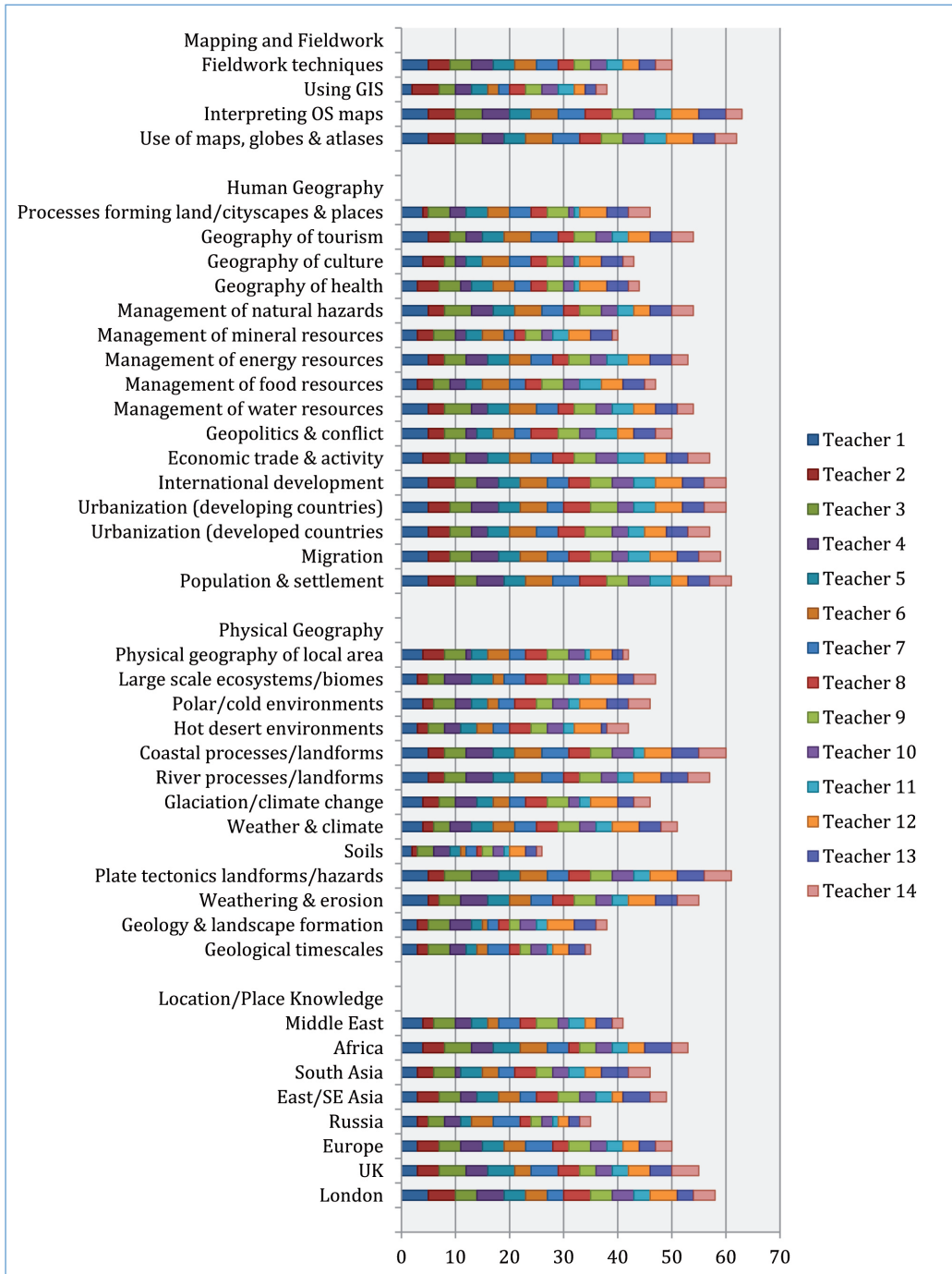


Figure 7: Secondary subject knowledge confidence by national curriculum topic (baseline). Cumulative for each topic: teachers’ self-score of level of subject knowledge and understanding. Short bar length = low confidence (score = 1); long bar length = high confidence (score = 5)

The post-project survey data indicates improved teachers' confidence in their subject knowledge across all topics with an overall average confidence shift effect of 0.4 (Figure 8). A shift effect of 0.5 or greater has occurred for seven of the thirteen physical geography topics.

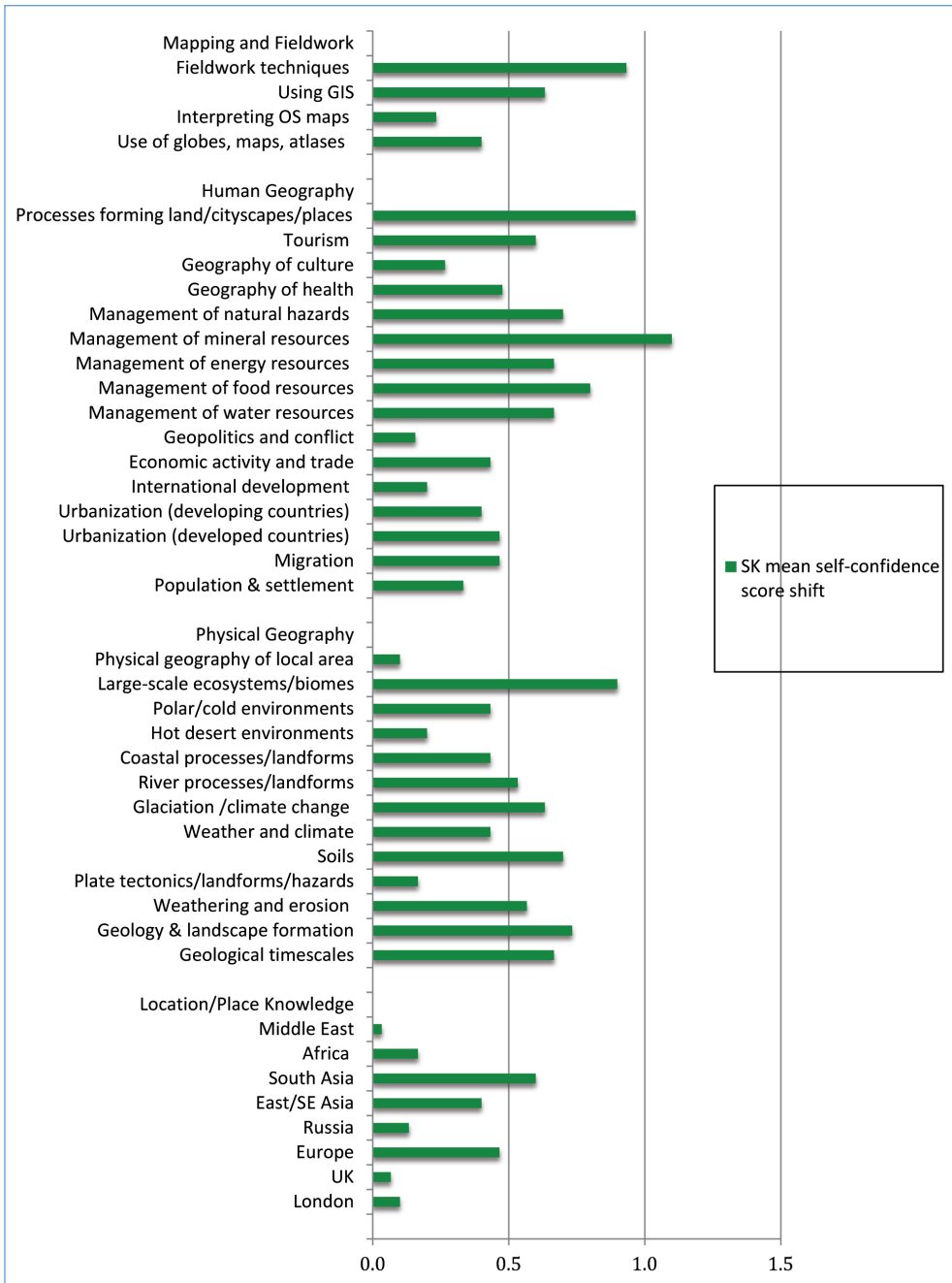


Figure 8: Overall shift in teacher confidence of subject knowledge (secondary).

Difference in the mean secondary teachers' confidence self-score for national curriculum topics between the baseline survey and the project evaluation (1.0 = one whole confidence shift)

The baseline survey revealed that teachers were generally neutral or positively confident in their knowledge of human geography topics, with the exception of the management of mineral resources. However, the post-project survey data indicates improved teachers' confidence in their knowledge of this topic, with a mean shift effect of more than one confidence level. Another significant shift effect is shown in teachers' confidence of their knowledge of how physical and human processes combine to produce unique landscapes (shift effect = 1.0).

Teachers remain somewhat neutral in their confidence about knowledge of Russia and the Middle East, neither of which had featured significantly in workshops at the time of the evaluation. There has been a medium-sized effect (0.4–0.6) on improving knowledge confidence in the topics of South Asia, East/South East Asia, and Europe. Within the category of 'mapping and fieldwork', teachers' knowledge of 'using GIS' shows a positive shift effect of 0.6, with 'fieldwork techniques' moving almost one whole confidence level, most likely attributable to the residential fieldwork.

Overall, the shift effect for secondary teachers was much smaller than that of their primary colleagues. This is to be expected, as the primary teachers were starting from a baseline of little geographical knowledge and low confidence, in contrast to secondary teachers with degrees in geography (or a related subject) and medium to high confidence levels.

The post-project questionnaire included an open-response question asking 'How has the LGA project helped you as a teacher?' For secondary teachers the most frequent mentions were 'updating subject knowledge' (4) and 'new teaching ideas' (4), followed by 'sharing good practice' (3), 'understanding the value of fieldwork' (2), and 'developed a more reflective review of my teaching'. Other benefits mentioned included: 'linking of geographical ideas'; 'knowledge of online resources'; 'development of enquiry skills'; 'better understanding of the national curriculum'; and 'improved knowledge of resources'.

During visits to schools, two secondary teachers took part in a semi-structured interview. One teacher was a relatively 'young career' teacher, having been teaching for a few years, while the other was an experienced teacher of 25 years. Both teachers discussed improved subject knowledge and being more confident about what they were teaching, especially in physical geography. Both teachers also mentioned that the LGA had provided better teaching material, especially at A level, that they could use in the classroom. Both teachers valued the personal connections established with university-level teaching, appreciating the importance of engaging with contemporary geographical ideas. One teacher commented, 'it helped me feel as though I could make the A level topics more relevant and cutting-edge'.

The young career teacher also mentioned how the LGA had raised awareness of geographical vocabulary, 'to demonstrate its meaning in the classroom rather than just using words'. In this respect, the LGA had changed and developed the teaching style of this teacher. She also indicated how improved confidence with subject knowledge had helped her assessment of students' work at GCSE, because she was better able to identify what makes a response geographical 'beyond facts'.

Secondary pupil outcomes

In response to the survey question asking 'How has the LGA project helped your pupils' geographical knowledge, skills and understanding?', secondary teachers cited: 'more interesting/relevant topics and information' (3); 'improved pupil enthusiasm' (2); 'more/improved fieldwork' (3); 'improved accuracy of subject knowledge' (2); 'more map skills' (1); 'improved knowledge of glaciation' (1); 'awareness of timescales in geography'; 'improved challenge' (1); and 'improved

GIS skills' (1). These teachers assumed that the increased motivation of pupils would lead to improved geographical learning outcomes.

Evidence was obtained from a discussion with a focus group comprising four year 7 pupils and two pupils from both years 9 and 10. The pupils commented that they had noticed an increase in active teaching approaches and independent learning. The teachers seemed to 'know their stuff' and after some teaching at the start of a topic, they would allow students to work through activities and tasks, and find information and answers to questions. They also had more fieldwork opportunities incorporated into their work and learning this year, which they considered valuable for learning. All the pupils enjoyed geography and the year 10 pupils were considering studying the subject at A level.

The interview with an HoD indicated a direct impact on pupil outcomes:

The LGA input has been most beneficial for extended essays that students have done, in both key stages, incorporating independent research. This the students have found very interesting and significant, as it shows geography in action, very topical, right up to the very present: the immediacy.

A second comment pertained to pupils' understanding of the process of scientific enquiry and the way in which research is produced:

Our students can become too cynical too quickly to 'new' scientific ideas and advances. Emphasizing to students the route of scientific enquiry, academic peer assessment, scrutiny of the evidence, and that only then will universities accept findings. This has given our students a demonstration of the scrutiny and fair process that geographical research has to undergo before it becomes mainstream.

Finally, the HoD revealed that new connections had led to some pupils being taken on a visit to the local university, which had 'raised their aspirations' with respect to higher education.

Secondary school system outcomes

The post-course questionnaire included an open-response question asking 'How has the LGA project helped your department?' The most frequent response (7) from secondary teachers was that it had helped them to develop new schemes of work and/or introduce new topics into their existing curriculum. Some respondents mentioned specific topics – including climate change, glaciation, and GIS – and the introduction of fieldwork. Associated with these were mentions of 'mapping the national curriculum' (1); 'subject knowledge update in the department' (3); 'the development of new teaching ideas' (2); the development of 'geographical pedagogical content knowledge' (1); and 'new resources' (1).

In response to the question 'In what ways has the LGA project helped you develop awareness of other work and of other teachers and departments?', the most frequent response was 'discussion with other teachers' (8), followed by 'sharing ideas' (4), 'school links' (3), and the associated 'sharing resources' (1). Other benefits mentioned were: 'reflection on the scheme of work'; 'an understanding of the restriction of exam specifications'; and 'support for non-specialists'.

During visits to two schools, the HoDs took part in a semi-structured interview. One HoD commented that the department was in need of improvement in subject knowledge and confidence to teach to a higher level. The LGA had provided this level of subject knowledge for the whole department. In both schools, information and ideas from sessions were fed back during weekly departmental meetings, which included a discussion on where the 'new' subject

knowledge and approaches might best be applied in the curriculum. Using this departmental 'cascade' approach ensured the whole department benefited from the LGA course. The LGA work had strongly influenced the introduction of two new field trips – one to a local urban area and the other to a coastal location. A number of teaching approaches discussed at LGA sessions had been incorporated into the departmental work, particularly highlighting geographical vocabulary and more independent learning activities. The one department was introducing A level geography in the next academic year, and felt the LGA course had provided considerable input into the planning and confidence of the teachers to teach A level geography. Overall, the HoD felt the LGA had helped the whole department to become better geographers, and had 're-generated an interest in the subject with focus and direction'.

In the second school visited, the HoD also noted that the LGA had helped the department establish links with universities and with other schools in London:

For me it is so much better to establish, develop, build, consolidate, and review from an organization like the LGA, speaking and liaising face-to-face with people: a smallish group, with shared interests, similar motivations. That group dynamic helps build, and maintain, a worthwhile system.

Conclusions

In conclusion, we can surmise that an alliance of schools and university lecturers (including teacher educators) had significant benefits for teachers, pupils, schools, and universities. Teachers were able to continue learning in their own discipline, expanding and updating their knowledge and methods, refreshing their ideas, and gaining access to new resources. They were stimulated to enhance existing schemes of work, develop new schemes of work, and try out new methods in the classroom. In some cases, teachers learnt about an aspect of geography (like soils or glaciation) that was entirely new to them, or in which they previously had little confidence.

The LGA benefited pupils because their teachers introduced them to new vocabulary, new resources, new ideas, new methods, and current data. Project teachers were inspired and their ideas refreshed, making their teaching more enthused and interesting for pupils. The school–university connections had other spin-offs for pupils, including a better understanding of where knowledge comes from and how it is produced, as well as visiting a university. Both increased pupils' aspirations with respect to further education.

The profile of geography as a subject has been raised in the schools participating in the LGA. In primary schools, this was evident in geographical displays around the school; in geography-based theme days; in the re-balancing of teaching to include much stronger geographical content in the curriculum; and in the geographical vocabulary used by teachers and pupils alike. A key difference is that teachers understand what geography is and how to make it apparent to pupils. In secondary schools, a raised profile for geography is recognized through the extension and strengthening of fieldwork experiences; the introduction of contemporary themes and topics into schemes of work; a greater emphasis on inter-relational dimensions of geography; and fresh approaches to teaching the subject.

Finally, there were clear benefits to universities who participated in the LGA. Opening a dialogue with teachers gives them insight into education in schools. Only through teacher–lecturer dialogue can common aims and objectives for the curriculum possibly be achieved. This way, lecturers can contribute to improving the preparedness of the students they receive, something they are clearly concerned about. In the long run, we suggest that increased collaboration would smooth the transition from school to university for students as the gap would not be so large.

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Note

- I In December 2014, the IOE became a school of University College London and is now called the UCL Institute of Education.

Notes on the contributors

Alex Standish is a Senior Lecturer in Geography Education at UCL Institute of Education, University College London, where he leads the Secondary Geography Postgraduate Certificate in Education, teaches, supervises doctoral degrees, and runs the LGA. A former teacher and Associate Professor at Western Connecticut State University, he has provided curriculum support to the Department for Education, the GLA, and to schools. He is author of two books, including *The False Promise of Global Learning*.

Duncan Hawley is a geography educator. He currently works on the international GeoCapabilities curriculum leadership project, teaches part-time in a small independent school, runs professional development workshops in geography and geoscience education, and is a consultant to the Geographical Association. He is external examiner to two major teacher training courses in England, and has been presented with the Geographical Association's Award for Excellence 2012. From 2004 to 2012, Duncan was Secondary PGCE Programme Director at Swansea Metropolitan University.

Tessa Willy is currently a Lecturer of Education at UCL Institute of Education, University College London, working on the Primary and International PGCE, and coordinating the Primary Tuition Fee Route of School Direct. She has taught in secondary and primary schools in both the UK and abroad, and has been working in teacher education for the past ten years. Tessa is a member of the Geographical Association Editorial Board for the *Primary Geography* journal and is also on their main publications board.

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