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Divided by a common language? The impact of a joint international field trip on student skills

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ABSTRACT

Fieldwork is often cited as one of the most important and effective parts of geography education, despite increasing scrutiny over its environmental and financial cost. As a result, it is imperative that any overseas fieldwork is as impactful as possible, enabling deep experiential learning. Here, we investigate the success of a joint field trip (Liverpool John Moores University, UK and Southern Connecticut State University, USA) to East Iceland. Such field trips are rare but have the potential to be extremely impactful on both cohorts of students. We outline the origins of the field trip, the considerations taken into account during planning, and the student skills we embedded into teaching. Surveys and interviews demonstrated that the field trip was highly successful, with students reporting excellent development of environmental and global awareness as well as research and leadership skills. Students also developed strong, lasting social networks, including those in the alternate university, and in Iceland. Cohorts responded similarly, suggesting that the trip presents similar opportunities to all students. We demonstrate that undertaking a joint field trip can deliver huge benefits to students, becoming a “perspective changing, and a once in a lifetime opportunity” affecting future study and career choices.

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Introduction

The importance of field trips

Fieldwork in geography is widely regarded as a critical component of science education, as it represents one of the most effective, engaging, and enjoyable forms of teaching and learning

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for both teachers and students (Hope, 2009; Kent et al., 1997; Lambert & Reiss, 2016). Teaching in the field is one of the most distinctive and important aspects of geography higher education, both in the UK and USA. It has multiple uses for students, with data from students and staff suggesting it is: a way of learning, a means of developing methods and skills, and a way of making sense of the real world (Stokes et al., 2011). Research overwhelmingly supports the foundational benefits, knowledge, and skills that can result from field study, especially while abroad (see review in Jones & Washko, 2022), with extensive evidence of positive impacts on student learning and subject interest. Alongside enhanced academic learning, field trips can help to enhance interpersonal skills, allowing development of mature relationships between students and lecturers, enhancing pastoral care and both personal and academic development (Atchison et al., 2019; Fleischner et al., 2017; Goodenough et al., 2014; Hart et al., 2011). Additionally, they can develop a plethora of soft-skills, both related and unrelated to geography, and improve student self-confidence (Boyle et al., 2007; Glass, 2015). Field studies also provide the opportunity to experiment with different modes of course delivery and can help to integrate theoretical and practical concepts taught in a geography degree (Kent et al., 1997; Schiappa & Smith, 2019). These unique modes of teaching allow students to connect theory with real experience (Hope, 2009), reinforcing classroom-based learning by following it through in particular “real world” situations. It also helps to enhance student experience with place (Hope, 2009; Jolley et al., 2018) and contribute to increased global and cultural awareness (Chieffo & Griffiths, 2004; Kurt et al., 2013; M. A. Tarrant et al., 2013; DeLoach et al., 2019).

When practised well, there is widespread agreement that fieldwork can “raise motivation, reduce anxiety about learning in students and encourage deeper rather than more surface approaches to learning” (Lambert & Reiss, 2016). Fieldwork abroad is arguably closer to this ideal due to the distinctiveness of the opportunity it presents (Hovland, 2014). However, the tangible pedagogic benefits of international field teaching to students have been questioned (Wilson et al., 2017), and these trips have been used as “flagship” devices for marketing to prospective undergraduates (see McGuinness & Simm, 2005). Financial constraints across higher education also mean that the financial burden on the students may increase. In parallel, awareness of the negative environmental impact of international travel and field trips has grown (Brouwer et al., 2008; Spector, 2019; Telford et al., 2024). Together, this means that international field teaching must be fully justified as a valuable, financially, and environmentally cost-effective way to teach students (Braungardt & Ingram, 2012). As a result, it is important that students receive an excellent learning experience, and resources are efficiently used.

Skills development

Current literature argues strongly for the integration of skills learning into field trip experiences, to properly prepare students for employment in a rapidly globalising world (Earnest, 2003; Giedt et al., 2015; Rosch & Haber-Curran, 2013; Sroufe et al., 2014). Field teaching is generally acknowledged as a positive teaching mode by both staff and students (Boyle et al., 2007; Payne, 2017), delivering practical skills (Kent, 2017; Phillips & Johns, 2012), and both place-based (Kelly & Riggs, 2006; Ort et al., 2006), and problem-based learning (Hmelo-Silver, 2004; Martin et al., 2006). Furthermore, it provides the opportunity, when harnessed, to allow students to think, plan, do, and reflect through

experiential learning (Giedt et al., 2015; Kolb, 1984). Fieldwork has been demonstrated to improve learning and is seen by students as more enjoyable, more valuable, and more effective as a teaching method (Scott et al., 2012). The literature provides an extensive list of the skills which can be developed through environmental fieldwork, often categorised into technical (subject specific), transferable, and those which enhance personal development (see Peasland et al., 2019 and references therein). Field trips can also allow staff to directly deliver “research-led teaching”, embedding the relationship between teaching and research interests (McGuinness & Simm, 2005). Study abroad programs have already shown that incorporating a research or fieldwork aspect to their program can significantly increase students’ research skills (Giedt et al., 2015; Ruth et al., 2018). For example, McLaughlin (2020) found several case studies that document how students’ hands-on involvement in developing questions about real-world sustainability, carrying out group research, and presenting their findings, positively impacted their acquisition of scientific skills and a sustainability-oriented mind-set.

Effective group work and leadership in an increasingly global society requires understanding and interacting effectively within other cultures (Earnest, 2003; Hofstede & Hofstede, 2004; Rosch & Haber-Curran, 2013; Sroufe et al., 2015). International field trip experiences can prepare students for this by encouraging students to look beyond their previously held worldviews and lenses, challenging and broadening their thinking, as well as expanding their understanding of diversity, a concept central to modern conceptualizations of leadership (Montgomery & Arensdorf, 2012; Ostick & Wall, 2011; Robinson, 2005; Rosch & Haber-Curran, 2013). Evaluation of existing leadership-centred field course has shown that these trips bridge the gap between leadership course concepts and real-life scenarios which increases the potential for students to develop leadership identity, ability, skills, and efficacy (Beatty & Manning-Ouellette, 2022; Montgomery & Arensdorf, 2012; Riggio et al., 2003; Rost & Barker, 2000). International field experiences become a “living laboratory for leadership students to delve into a unique, powerful cultural experience and share a deep learning about leadership through immersion and reflection” (Montgomery & Arensdorf, 2012). Planning fieldwork with both staff- and student-directed activities has also been shown to benefit students, allowing them to acquire and recognise the range of skills developed (Peasland et al., 2019).

Global and environmental awareness

As well as skill development, international field trips have been shown to facilitate an awareness and knowledge of cultural differences and global issues that contribute to increased global awareness (Chieffo & Griffiths, 2004; DeLoach et al., 2019; Kurt et al., 2013; M. A. Tarrant et al., 2013). Participation in these trips immediately and positively impacts students’ intercultural awareness, professional development, and resilience through first-hand experience of cultural, economic, political, and social differences from their home countries (Donnelly-Smith, 2009; Kurt et al., 2013; Ruth et al., 2018; Wang & Coffey, 2014). Purposefully designed field experiences are important methods to create impact in sustainable education and foster environmental awareness (Bell et al., 2014; Kishino & Takahashi, 2019; M. Tarrant & Lyons, 2012). Short-term field programs can help students develop awareness considered critical for sustainable attitudes, adaptation to globalisation, and social responsibility (Kishino & Takahashi, 2019; M. A. Tarrant

et al., 2013). There is widespread agreement that fieldwork at its best can “raise motivation, reduce anxiety about learning in students and encourage deeper rather than more surface approaches to learning” (Lambert & Reiss, 2016). Frequently, field experience provides memorable experiences and commitment to seeing through an inquiry from start to finish, often reliant on working in teams and combining efforts, providing a more engaging and fruitful experience for the students. These pedagogic benefits are often cited as an additional justification for well-planned overseas field trips as the greater environmental awareness that the trip engenders in students compensates for the environmental footprint of the trip.

Collaborative field trips

Few examples of collaborative field trips between multiple higher education bodies exist, both anecdotally and in the published literature. There is currently no research that evaluates the implications of a joint field course with students from different countries mutually exploring a foreign one. This is not surprising, given the extra logistical challenges involved in planning and running such a trip, and the likely difference in academic frameworks between institutions. However, where reported, collaboration between institutions in an international setting can lead to enhanced learning, and the development of a learning community (Hautala & Schmidt, 2019). In order for collaboration between institutions to function effectively and provide maximum impact, mutual engagement between the students is required (Curşeu & Pluut, 2013; Hautala & Schmidt, 2019), and students need to be able to contribute different types of knowledge to the group (Davies, 2009). Accordingly, there needs to be some distance between the two (or more) student groups, either cognitive, social, or cultural (Hautala & Schmidt, 2019). For example, students may be from different degree programmes, different levels of study, know each other (or not), or be from different cultural backgrounds. However, a balance is required as if these distances are too great, collaborative learning is likely to be hindered (Hautala & Schmidt, 2019). Collaboration during international experiences can also create a sense of home (common safe reference location), improve confidence, increase self-reflection, and can even elevate grades (DeJordy et al., 2020; Dewey et al., 2012; McManus et al., 2014). International students who reported more cross-network friendships with host country individuals described themselves as more satisfied, content and more socially connected than their counterparts with fewer friendships (Hendrickson et al., 2011; Tian, 2019). Houser et al. (2011) and Dewey et al. (2012) suggest that improved reflection, confidence, comfort, and cultural advice help to improve final grades during a field trip.

Research aims and objectives

Here, we provide a summary of the joint international field trip to Iceland, co-run for 4 years by Southern Connecticut State University (SCSU), USA and Liverpool John Moores University (LJMU), UK. As identified, few examples of collaborative field trips such as this are reported in the literature. We therefore aim to fill this knowledge gap and highlight the considerations when designing such a trip, and the added value of the field trip from both a student and staff perspective. We outline the trip’s genesis and issues

addressed during development of the field trip to provide a framework for other higher education practitioners who may want to consider a similar trip.

Then, using student surveys, student interviews, and staff reflections, we sought to address specific research questions:

- (1) Do the students feel they developed skills and enhanced their global and environmental awareness during the trip?
- (2) Did the students benefit from the two-university field trip?
- (3) Do the staff teaching on the field trip see a tangible benefit to a joint field trip?

Finally, we present a summary of our implications for practice, as a series of further concerns not considered prior to the field trip.

The joint Icelandic field trip

The concept of a joint field trip between SCSU and LJMU originated in the context of widespread enhanced international collaboration and globalisation in higher education, and an increase in dual university options for students. Following university-level partnering, discussions between the Geography Departments of each university led to the planning of a joint field trip to Iceland. The SCSU Geography department had been visiting Iceland (since 2010) and had developed strong in-country links, with a robust human and physical geography field trip. The trip is targeted towards undergraduates interested in learning more about sustainable practices as well as practical field experience in geography. It aims to increase the environmental and global awareness of students, as well as developing their research and leadership skills.

A new syllabus was developed based on the existing trip and the expertise and research interests of LJMU staff. As the LJMU module was written from the ground up, staff had full freedom to develop a coherent, exciting module. The SCSU module was edited and updated to align with the newly planned joint field trip's learning objectives and syllabus. This ensured that, across both universities, all students would be able to study the same content and hence foster deep collaboration between student groups.

The field trip was designed to last for 12–16 days in early June, following end of year undergraduate exams. Student numbers participating in the field trip varied between 22 and 28, with a roughly even split between SCSU-LJMU. Across the four trips, a total of 98 students participated. Students fly with staff from the USA or UK and meet in Keflavik, Iceland. From this point on, the trip is run entirely as one field trip, with students receiving the same teaching (hours and content) and same in-country assessments. The field trip travels around the coast of Iceland, with a substantial portion of time (~7 days) spent in Skálanes Nature and Heritage Centre, close to Seyðisfjörður, East Iceland. Throughout the trip, emphasis was placed on integration and collaboration between the two cohorts (e.g. mixing groups in vehicles, collaboration in group research projects). Additionally, the trip has an emphasis on the development of student self-sufficiency and personal development. During the time spent at Skálanes, students have to (in collaboration with staff) plan and cook meals for all field trip participants, ensure upkeep of the accommodation, and undertake independent research. This independence is often novel to many of the students and is an important aspect of the field trip, alongside the

geographical learning. The promotion of this independence (and interdependence between peers) during the field trip is intentional, as it has been shown to enhance the development of skills, including, in this case leadership, teamwork, and communication (Peasland et al., 2019). Once back in their home country, the follow-up material and assessments vary between SCSU and LJMU, in order to meet module hours and other institutional requirements.

Considerations during field trip development

Location and local knowledge

Through the development stage, staff were aware of the need to maximise student learning and development during the field trip. Often, if students are under prepared for fieldwork, the complexity, differences, and novelty of the new environment can be overwhelming (Falk et al., 1978; Cotton, 2009; Orion and Hofstein, 1994; Elkins and Elkins, 2007), and if too great, learning is impaired. Iceland was consciously selected for this reason. Having already undertaken trips to Iceland, SCSU had well-developed in-country links and knowledge. Additionally, the vast majority of Icelanders speak English, and the country is highly westernised. As a result, the cultural and social novelty of the trip is reduced, with the intention of allowing students to focus on the geographical novelty of Iceland and allow learning.

Another consideration was the inclusion of local knowledge throughout the field trip. Across the history of fieldwork there is an extensive history of extractive behaviour (see Chacko, 2004; Schlosser, 2014), and to ensure this was not the case we worked closely with local partners around Iceland. Their embedding throughout the field trip ensured that their input was a core component of student learning and not bolted on as a touristic addition. This also allowed time for the local partners to spend time with the students and assist in informal information and skills development.

Field trip content and delivery

A key consideration during field trip planning was a focus on specific knowledge and skills acquisition, to ensure focused learning. The previous academic background of students also had to be considered closely. For LJMU students, the Iceland field trip is part of a single optional module worth 20 credits (1/6th of their year) and forms part of their final year, though taken prior to the start of the academic year. In contrast, to attend the Iceland field trip, SCSU students have to take two modules. Module pro-formas (see Table 1) were written with the intention to continue the joint field trip, however by necessity they had to be able to function without the other university. This flexibility would ensure the trip could run as a single university trip if needed. Pro-formas were written collaboratively between the institutions to ensure maximum parity, though allowing variation in post-fieldwork assessment and teaching sessions. The trip can be taken by SCSU students from any year group, and any major, as long as they have at least a minor in a geographical subject. As a result, development of the field trip learning material focused on ensuring accessibility and continuous interventions where knowledge deficiencies were identified. Activities throughout the trip (see Table 2) were

Table 1. Module aims and learning outcomes for the LJMU and SCSU modules.**Cold Environments: Processes and Change (LJMU)**

Module Aims:

- To provide students with an opportunity to apply knowledge and skills gained in previous modules to a new geographical setting, to enhance global awareness.
- To critically evaluate the importance of field-based observations and analyses within the context of the wider literature.
- To develop a wide range of transferable skills in measurement technique, research design, effective communication, leadership, and group work.

Learning Outcomes

After completing the module, the student should be able to:

- (1) Collect, organise, and analyse a wide variety of field-based data using appropriately designed methodologies to formulate and solve geographical research questions.
 - (2) Combine field observations with published research findings to produce fully synthesised answers to specific geographical problems.
- Critically synthesise and communicate contemporary environmental ideas to a diverse audience.

Environmental Economic Geography (SCSU)

Module Aim:

To provide students with the contextual information and awareness of the spatial distribution and spatial interaction of economic activities and their relationship to environmental issues in a rapidly globalizing world economy and to aid students in placing this relationship in the context of broader social and political institutions and dynamics.

Learning Outcomes

After completing the module, the student should be able to:

- (1) develop an understanding of concepts and issues related to the spatial interactions of the economy and the environment from a “geographical perspective”.
- (2) develop an understanding of how increasing globalization of our world today affects these interactions.
- (3) develop the ability to research and critically analyze current issues related to environmental economic geography, as well as synthesize and disseminate their research findings in written as well as oral form.

Field Techniques (SCSU)

Module Aims:

To provide students with the skill to undertake field-based research including data collection, organization, visualization (mapping) and analysis of human as well as physical geography phenomena. To enable students to effectively communicate their field research findings.

Learning Outcomes

After completing the module, the student should be able to:

- (1) demonstrate the ability to formulate concepts, connect them to evidence based upon observation and field visits as it relates to Iceland through the completion of field labs and mapping exercises.
- (2) develop the ability to synthesize and disseminate their research findings in written as well as oral form through the development and presentation of field lab reports and participation in one or more field-based group projects.

developed with this in mind, to provide a broad, scaffolded learning experience which was customisable to different groups. Where academic gaps were identified during the field trip, peer-learning between students was encouraged. As a result, differing levels of expertise across students were harnessed as an explicit part of the field trip, allowing a widening and deepening of student knowledge and stronger student interaction. Alongside the field activities, three group projects were included across the trip (Table 2), with the intention that students could self-select groups and the focus of the project. This ensured students would develop a solid base of knowledge and then specialise in a subject they were both interested in and comfortable with. The activities were also planned with clear skills or knowledge-based learning objectives, applicable to both cohorts. This allowed monitoring of skills development through the field trip, and ad-hoc additions by staff where necessary, to stretch students. The nature of the field trip and close interaction of staff and students were considered. Due to the remote location of the field centre, it was foreseen that staff could informally and formally help students with both knowledge and skills development in a deeper way than normally allows. As such

Table 2. Outline of main activities before and during the field trip, the location, the skills or learning goals, and the university which lead.

Activities	Type	Description	Location	Focus and Learning goals	Lead institute
Pre-departure session <i>Introductory information</i>	Online	Introduction to fieldwork and Iceland (culture, politics, landscape, economy, etc.)	Online	Background knowledge. Cultural competency. Global Awareness.	Both
Field activity 1 <i>Map, Compass, Clinometer</i>	Guided hands-on	Introduction to basic field mapping skills	On campus before departure	Geographical skills development	Both
Field activity 2 <i>GPS</i>	Guided hands-on	Introduction to GPS field mapping	On campus before departure	Geographical skills development	Both
Field activity 3 <i>Introduction to Glaciology</i>	Guided hands-on	Introduction to glacial systems, glacier walk, using GPS to map glacial features	Svínafellsjökull, south Iceland	Geographical skills development Environmental awareness.	LJMU
Field activity 4 <i>Moraine Mapping and Lichenometry</i>	Guided hands-on	Moraine geomorphology, sedimentology, and lichenometry	Kviárjökull, south Iceland	Geographical skills development. Research skills. Group skills. Environmental awareness	LJMU
Field activity 5 <i>Coastal Processes & Water Properties</i>	Guided hands-on	Beach processes and changes in water characteristics	Various: Höfn, Skálanes Field Research Centre	Geographical skills development. Research skills. Environmental awareness	LJMU
Field activity 6 <i>Reading the Landscape</i>	Guided hands-on	Cultural landscape interpretation skills	Various: Djúpvogur, Seyðisfjörður, east Iceland	Geographical skills development. Research skills. Cultural and global awareness	SCSU
Field activity 7 <i>Soils</i>	Guided hands-on	Soil sampling strategies and techniques in the Icelandic context	Skálanes Field Research Centre, east Iceland	Geographical skills development. Research skills. Environmental awareness	SCSU
Field activity 8 <i>Urban/Cultural Geography</i>	Guided hands-on	Field mapping to identify the economic structure of an urban setting and neighborhood characteristics	Various: Reykjavik, Seyðisfjörður, Sauðárkrúkur	Geographical skills development. Research skills. Cultural and global awareness	SCSU
Field activity 9 <i>Alcoa Activity</i>	Role-Play	Socio-spatial and environmental conflict in the context of large industrial development projects (framed in the context of the Icelandic Aluminium Industry).	Alcoa Fjarðaál in Reyðarfjörður and Kárahnjúkar Dam, east Iceland	Research skills. Leadership skills. Cultural and global awareness Environmental awareness.	SCSU

(Continued)

Table 2. (Continued).

Activities	Type	Description	Location	Focus and Learning goals	Lead institute
Group Projects: 2× Physical Geography, 1× Human Geography	Project Based Learning	Independent group research projects which contribute to long-term research projects in a transdisciplinary research setting.	Seyðisfjörður and Skálanes Research Center (east Iceland)	Research skills. Leadership skills. Cultural and global awareness Environmental awareness.	Both

staff ensured they would be available to students to allow skills development beyond what was expected as part of the learning and assessments and endeavoured to adapt to what each cohort needed during the fieldwork.

Overall, the content of the field trips was also much greater than would be possible with a single institution field trip due to the expansion of staff expertise through collaboration. This ensured the delivery of a variety of topics achievable without extra costs. Though this varied through the 4 years, they typically included physical geography subjects from LJMU staff (e.g. meteorology, glacial geomorphology, geochronology, geology), human or social geography subjects from SCSU staff (e.g. renewable energy, economy, blue economy, population), and new/novel field techniques including μ UAS/drone aerial surveying (both SCSU and LJMU staff).

Finance

The financial cost of the trip varied between universities, broadly due to the difference in university fee structure. For LJMU, all university tuition fees are included in the annual tuition fee. However, as the module is optional, students are required to contribute to the field trip. In contrast, SCSU students must pay tuition fees for each module they take, not an annual cost. This field trip was part of two modules, with a resultant high cost. The students also have to cover the cost of the field trip itself. As a result, the visible cost of the field trip is very different between the two cohorts. However, once the difference in fee payments was taken into account, the actual cost to the students was more comparable between institutes. Importantly, and crucially for both the success and the approval of the field trip, including a multi-university structure did not increase the overall cost of the trip. The inclusion of staff and students from both institutions allowed staff student ratios to remain the same and in places, costs were reduced due to the larger group size.

Health and safety

During planning, extensive discussions surrounded aspects of health and safety, and any issues which could be incurred. Prior to the trip, field trip leaders from both universities discussed expectations, approach to health and safety, and risk management. Throughout this stage and during the trip itself, a strategy of deferring to the more risk averse university policy/guideline was adopted. Both universities went through a rigorous process of risk identification and mitigation due to the location, before comparison,

and submission to each university. This ensured all staff and students were aware of the risks, and that both cohorts of students had identical awareness and knowledge of how to mitigate risks in the field.

Another consideration surrounded the supervision of students by staff from the alternate university. This could have presented an issue, but the field trip and activities were designed such that staff from both universities were always present, or readily accessible. In addition, any assessment marking in the field was only undertaken by staff from the students' university.

Methods

Study design and participants

To explore opinions of students who have been on the trip, surveys and semi-structured interviews were conducted (Mertens & Wilson, 2019). The survey and interviews focused on understanding if the joint field trips increased student environmental and global awareness, and increased research, and leadership skills. Additionally, they also aimed to understand if the joint aspect of the trip was favoured by students, and if it helped participants create an international network. Using surveys and interviews yields comprehensive results by allowing a comparison between numerical data from surveys and first-person accounts from program participants through interviews to either enhance, corroborate or negate statistical findings from the surveys.

The survey is organised in sections including demographics, skills acquisition, global awareness, environmental awareness, and social networks. Each section contained 4–5 questions aimed at capturing/quantifying the participant's perceptions on how much the trip contributed to or improved their knowledge on the topics. A non-exclusive sampling strategy (Bernard & Gravlee, 2015) was employed to invite all the students who have previously participated in the joint Iceland trips (2016, 2017, 2018, 2019) from both SCSU and LJMU, to contribute to the study. Survey questions were formatted both on a Likert scale, as multiple-choice questions, and as open-ended sections. At the end of the survey, participants were asked if they wanted to participate in a voluntary 20-minute semi-structured virtual interview.

Data collection

Email information for the participants of this study was uploaded into the Qualtrics software for survey dissemination. The digital survey was emailed to participants through the Qualtrics software interface. The email included the context of the study as well as the information sheet which also served as informed consent. Due to the digital nature of the study instruments, participants cannot stay anonymous; however, all personal identifiers were kept confidential, and personal information has not been used in dissemination of data. The survey was open for 2 weeks, allowing participants enough time to respond, and reminder emails were sent twice. The survey yielded a 64% response rate ($n = 37$). Of the nine who expressed interest, six participants, three SCSU students and three LJMU students, were chosen for interviews. The number was limited to six for time and

logistical constraints, and the desire to keep the number of interviews equal between the universities. Each interviewee was asked six questions regarding their experiences on the Iceland trip.

With consent from the interviewees, interviews were recorded and transcribed directly through the Microsoft Teams software. Open-ended questions and narrative prompts were used to stimulate the interview participant's account of the trip. These questions served as guidance, but left space for the interviewee's own ideas to come up during the interview, to assess the individual's perceptions of the trip.

Data analysis

Survey responses using the Likert scale (sections on leadership skills, research skills, global awareness, and environmental awareness) were analysed using the Kruskal–Wallis rank sum test and Dunn post hoc test with a Bonferroni correction for multiple pairwise comparisons (Dinno, 2024). Statistical differences were taken to be significant when $p < 0.005$. Descriptive statistical analysis was used to present participants' responses to questions about the social aspects of the trip (Mertens & Wilson, 2019). The six interview transcripts were analysed using open and thematic coding to interpret the key findings from the participants' international field trip experiences, and then used to support the findings of the survey (Berg, 2009).

Results

The results and discussion are based around our three research questions. Here, we present data from surveys and interviews across a series of themes to answer our research questions. Survey questions based on a Likert scale from 1 (strongly disagree) to 5 (strongly agree), with a score of 5 being the most positive reflection on the field trip. Later, questions required binary answers (yes or no).

Demographics

The 37 survey participants represent a relatively even spread of participants from the four joint trips, consisting of 8 students from 2016 (21.62%), 9 students from 2017 (24.32%), 10 students from 2018 (27.03%), and 10 students from 2019 (27.03%). The students were asked a variety of Likert scale questions referring to skills acquisition and personal growth and awareness. When all questions were averaged, the respondents that attended in 2016 generated a median score of 5 across all statements. This was significantly higher than respondents in 2017, 2018, and 2019 which all gave a median of 4 (Figure 1; Kruskal–Wallis $X^2 = 35.05$, $df = 3$, $p = 0.000$; 2016 vs 2017 Dunn's $z = 5.21$, $p = 0.000$; 2016 vs 2018 Dunn's $z = 4.01$, $p < 0.001$; 2016 vs 2019 Dunn's $z = 5.16$, $p = 0.000$).

Skills and awareness development

When asked about skills, all statements received a median score of 4 apart from the statement on the improvement in the ability to conduct fieldwork, which received a median score of 5. At a broad level, this suggests that all field trips were very successful

at improving students' skills development and awareness, and that students were aware of the skills they developed. The statement that participants agreed the most with is "Participation in the Iceland trip increased my ability to operate outside my comfort zone", with 81% of the respondents agreeing or strongly agreeing with the statement (Figures 2 and 3). The statements that participants disagreed with the most were: "Participation in the Iceland trip increased my level of comfort in taking on leadership roles" and "Participation in the Iceland trip increased my knowledge of data analysis techniques", although only 5.4% of the respondents disagreed with the statement in both cases (Figures 2 and 3). When compared between universities to investigate any intra-university differences, most statements received identical scores. The only exceptions were whether the field trip "improved their ability to operate outside of their comfort zone" (LJMU median of 5, SCSU median of 4, Figure 3), and whether the field trip "improved their confidence to collect data" (LJMU median of 4.5 and SCSU median of 5, Figure 3).

When asked about the development of their environmental and global awareness, participants agree that the Iceland trip enhanced both their knowledge and awareness (Figures 2 and 3). Most statements received median scores of 4 and two received a median score of 5 although no significant statistical difference was identified between the responses to each statement. The statements that participants agreed the most with were: "Participation in the Iceland trip increased my knowledge of other cultures" and "Participation in the Iceland trip increased my awareness on global environmental issues", with 97.3% and 94.6% of respondents agreeing respectively. The statements most disagreed with were "Participation in the Iceland trip increased my awareness on the interconnectedness of the world", where 21.6% of the respondents felt neutral, and "Participation in the Iceland trip increased my motivation to decrease my ecological footprint", for which 8.1% of respondents disagreed. When compared between university, all statements except one achieved the same median score regardless of which university the respondent attended. The statement that received different median scores asked respondents about to what degree they agreed that the field trip had improved their

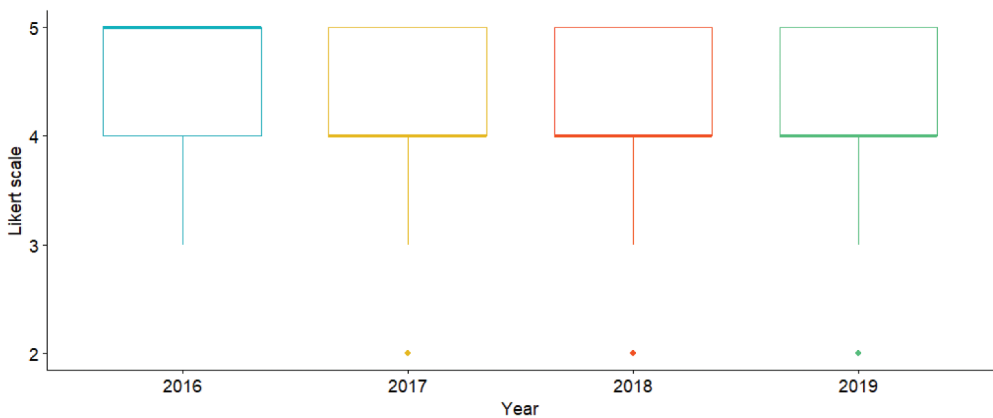


Figure 1. Survey response scores ($n = 37$ respondents) by question pooled by year of attendance. Centre line denotes the median, top and bottom of boxes denote the interquartile range and the whiskers represent the maximum and minimum values with outliers represented by dots.

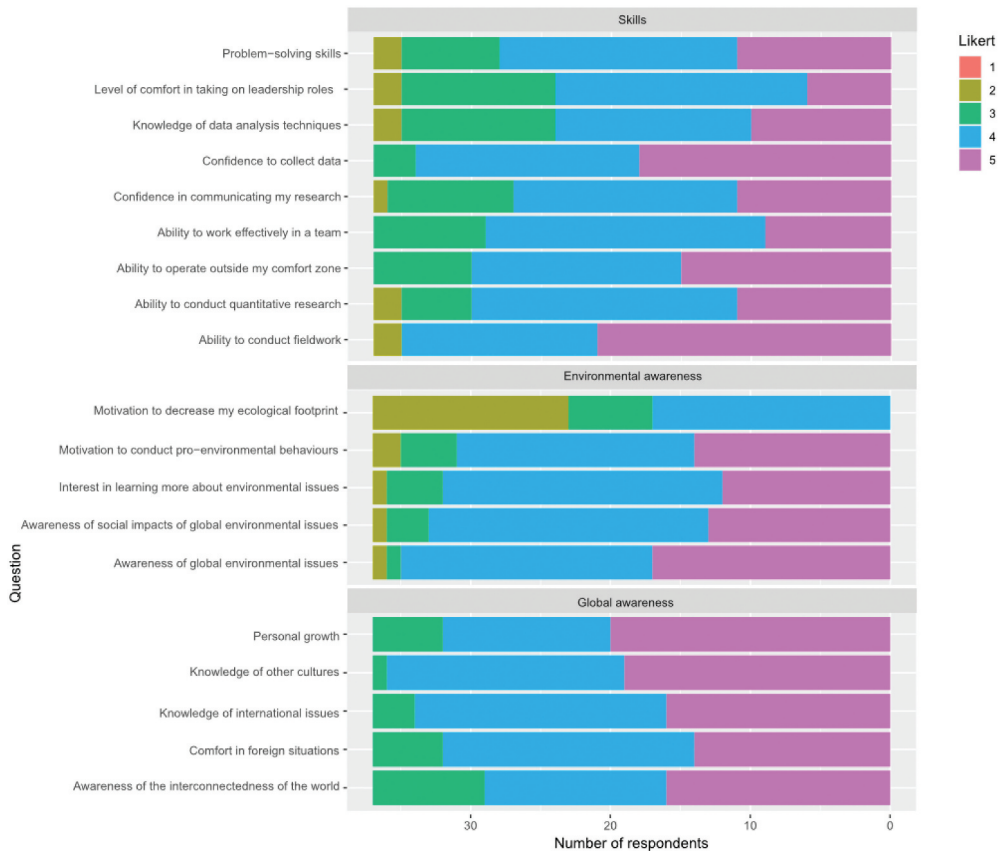


Figure 2. Survey responses using likert scale whereby 1 = strong disagreement and 5 = strong agreement to statements displayed by broad response category of skills, global awareness and environmental awareness ($n = 37$ respondents).

knowledge of other cultures. The LJM U median was 5 and the SCSU median was 4 (Figure 3).

Survey results were reinforced by interviews, highlighting their skills acquisition. First, interviewees were asked about the main skills they developed on the Iceland trip, and how they utilised them. The two most common skills that were noted are teamwork and field preparation and organisation: “*working with other students and organising our own fieldwork were the main skills I learned. We were . . . given a task and then just told to sort of figure it out ourselves, then plan the groups we would conduct research with, and where to go . . .*”. Alongside identifying the skills, many of the students cited that they use the acquired skills in their careers today or have applied what they have learned on the trip to their Masters’ programs. Interviewees were asked if the Iceland trip motivated them to do any research of their own. Only one respondent said “no”, and for all of those who responded yes, their research topics were directly related to environmental methods and issues. All respondents agreed that the trip motivated them to continue learning about global environmental issues, related to the global economy, sustainability, and climate change.



Figure 3. Survey response scores ($n = 37$ respondents) by reporting level of agreement with statements exploring respondents' perceptions of their improvement in skills, global awareness and environmental awareness. Strong agreement corresponds to the likert score of 5. Centre line denotes the median, top and bottom of boxes denote the interquartile range and the whiskers represent the maximum and minimum values with outliers represented by dots.

Benefits of the trip's joint nature

The students were asked about the dual-university aspects of the trip, alongside social networks they developed (and maintained) due to the field trip. These survey questions were binary (Yes/No). Results show that participants overwhelmingly enjoyed travelling and working with students from the partner university (89.19% – Yes) (Table 3); however, fewer participants found it easy to work with students from the partner universities (72.97% – Yes it was easy) (Table 3). Further questions evaluated if (and how often) participants remained in contact with different parties on their trips. At the point of the survey, 83.8% of respondents were still in contact with students from their own university, and 54.8% of the respondents were in contact a few times a year (Table 3). Furthermore, 64.9% respondents are still in contact with students from the partner university, and 78.3% of respondents are in contact with those students a few times a year (Table 3).

Some survey respondents mentioned that the nature of the trip made it difficult to get along with other students, particularly students from the partner university. Specifically, the clash of cultures was “*intense*” and sometimes resulted in bad relationships with other students. Another student described their experience with the students from the partnering university as “*cliquish and rude*”. More positive experiences included that the trip was “*perspective changing, and a once in a lifetime opportunity*”. In fact, some students disclosed that the experience with students from another university directly impacted their decisions surrounding their career path and decisions to continue their higher education.

Interviewees were asked about the dual university aspect of the trip. There were a range of opinions on this aspect, with four respondents enjoying travelling with students from the partnering university: “*that was the best part of the trip . . . I feel like [travelling with students from partner university] brought the trip up to a whole other level . . . You get to experience their accents and what they like, and the differences between cultures . . . I would totally support [the universities] continuing this dual trip forever*”. A respondent who responded negatively cited that the curriculum for each university seemed disjointed, resulting in mixed expectations for the UK and US students. More specifically, they explained “*there seems to be a different view about study abroad trips [between the two schools] . . . We had to stay focused to do our research in the field, while, I don't know, maybe [the students from the partner university] see the trip as more or of a vacation and party time . . .*”. They highlighted this as part of cultural differences which were hard to bridge. However, another student who enjoyed the partnering of universities enjoyed this clash, and said “*there was clash of cultures and personalities, but this and the difference in teaching and learning style from other the university added to learning experience*”.

Respondents were also asked if the trip helped them form relationships with their peers, and if they were still in contact. All respondents are still in contact with peers from the trip, at least on social media, and there were a range of responses regarding forming relationships. Most of the respondents said that they made a few strong friendships with peers from both universities. One respondent became such great friends from the partner university that they decided to do a semester abroad to become closer to them.

Table 3. Survey responses for questions regarding social networks developed during the field trip.

I am still in contact with students I met on the Iceland field trip that were from my university.		
	%	Count
Yes	84%	31
No	16%	6
How often are you in contact?		
A few times a week	16%	5
A few times each month	29%	9
A few times a year	55%	17
I am still in contact with students I met from the partner university.		
Yes	65%	24
No	35%	13
Total	100%	37
How often are you in contact?		
A few times a week	0%	0
A few times each month	22%	5
A few times a year	78%	18
I am still in contact with faculty I met on the Iceland trip.		
Yes	25%	9
No	75%	27
How often are you in contact?		
A few times a week	0%	0
A few times each month	25%	2
A few times a year	75%	6
I am still in contact with locals I met on the Iceland trip.		
Yes	8%	3
No	92%	34
How often are you in contact?		
A few times a week	0%	0
A few times each month	100%	3
A few times a year	0%	0

Discussion

Do the students feel they developed skills and enhanced their global and environmental awareness during the trip?

International field experiences are thought to positively impact students across leadership development, research skills, global awareness, and social networks (Giedt et al., 2015; Sroufe et al., 2014, DeLoach et al., 2021). This study's results support these claims and demonstrate a further impact of the joint experience on student participants. Our data suggest that students who participated in the Iceland program have enhanced their social network, developed an awareness of global and environmental issues, and gained applicable leadership and research skills applicable to their current careers. By presenting statistical analysis of agreement levels for all four sections of the survey, we can confirm that participants mostly agree that the Iceland trip has increased their overall global awareness, environmental awareness, and research skills.

The survey results show that 94.60% of the respondents agreed that the trip increased their ability to conduct research via fieldwork, which is one of the main learning goals laid out by group leaders. Kent et al. (1997) and Hope (2009) regard fieldwork as a vital part of professional development of students to prepare them as qualified practitioners in all aspects of geography, as well as providing the opportunity to develop a range of

subject-specific and soft skills. The interviews reflect this sentiment as the two most cited skills learned on the trip are “teamwork” and “field preparation and organisation”. Many respondents noted that having complete autonomy over fieldwork and their research plan taught them a lot about being prepared and assigning group roles. In addition to this, five out of the six interviewees who talked about fieldwork skills said that they applied these skills in their current situations, such as their graduate research and professional careers.

As intended, access to the staff throughout the trip ensured that a proactive, positive approach to skills development was possible. Staff worked closely with students who especially demonstrated interest in developing specific skills (e.g. leadership, research skills), providing skill development for all students, regardless of their existing capacity.

The designing of the trip around environmental challenges helped to ensure that students were impacted by the environment they stay in, providing them with a completely different view of how we think about and deal with the environment. However, whilst interviewees cited the global economy, sustainability, and climate change as key issues of interest, it is notable that the statement which achieved the highest level of disagreement was that pertaining to motivation to reduce the individual’s ecological footprint. This was the only example of the whole survey where students who agreed with the statement were in the minority of respondents. We can speculate as to whether this reveals something about international field trips contributing to the “normalisation” of resource-intensive activities such as air travel (see Telford et al. 2023), or attitudes of the students that there is not a need to act individually to lighten one’s own ecological footprint. We recommend that further study is undertaken to untangle the tensions between learning about sustainability whilst overseas and thereby participating in resource-intensive activities.

When responses were divided by university, cohorts responded identically across almost all questions. This demonstrates that the trip presents similar opportunities for the development of skills and awareness regardless of university and is an important measure of success for this trip. There were some differences in response, namely when asked about operating outside of their comfort zone, their improved confidence to collect data, and their improved knowledge of other cultures. However, to understand these differences, which are currently not significant, further investigation would need to take place, including assessing students’ baseline understanding prior to the trip.

Did the students benefit from the two-university field trip?

Overall, the field trip could have been designed and run by a single university. However, our findings from student surveys and interviews, as well as feedback from teaching staff, have demonstrated added value. Whether it be creating kinship with a fellow student, local resident, or staff member, international social networks are key in optimising the field trip experience. Studies have found that international students who reported more friendship variability with host country individuals (i.e. more diverse friendship groups) described themselves as more satisfied, content and more socially connected than their counterparts with less friendship variability, and those who did increase their friendship variability also earned better grades (Hendrickson et al., 2011; Tian, 2019).

Whilst it is possible to develop deep social networks through a single university field trip, the development of robust social networks was aided by having students from two universities. This is reflected both anecdotally through staff observations and through the survey and interviews. Throughout the trip, students were often able to have informal conversations with staff and students from different backgrounds about complex environmental topics, allowing deeper engagement. Students were also situated in a unique and awe-inspiring geographical region that demonstrated an array of environmental processes, interactions, and solutions. We found that most students who went on an Iceland trip still maintain connections with students from their home and, more importantly, partner universities, and the trip helped to expand their social networks. An important additional consideration is that they have opportunities to build relationships with members of the community and organisations working in the region, including academic staff, politicians, authors, local environmental consultants.

Additionally, whilst not potentially recognised by the students, the content and skills delivered during the field trip were more diverse and detailed than would have been if taught by a single university (see Table 2). Given the students' overwhelmingly positive feedback regarding the trip and its content, we feel this is an implicit but direct benefit to a two-university field trip.

As highlighted in the results, student opinions of the joint aspect of the trip did highlight some variability. Although only investigated during the interviews, and therefore limited in number of students, whilst a large majority enjoyed travelling with the partner university and some highlighted it as "the best part of the trip", some thought it made the trip disjointed and resulted in mixed expectations. We hypothesise that some of this variability, and the few negative reflections from students are due to participation in an earlier field trip. Each year the trip developed and changed, learning for the previous years, and the curriculum and learning goals for the courses of each university were revisited to ensure the students have even expectations in the field to avoid conflict or confusion. This was an ongoing, iterative process as, even though the learning aims and outcomes were co-designed, some specific differences between the UK and USA university system were unforeseen. This may have led to some of the comments regarding misalignment of curricula and expectations. Our approach to this definitely improved after the first trip. However, we believe this is a minor but important issue which we addressed during trip development cycles.

Do the teaching staff see a tangible benefit to the joint field trip?

While the primary goal of this research was to analyse the impact of the joint field trip on students' knowledge, awareness, perceptions, and skills development, it is also worthwhile to assess the perceptions of the staff that took part. Anticipated during the initial planning phase of the joint LJMS/SCSU Iceland trips but less well articulated or documented is the impact the experience(s) had on the staff from the participating institutions, and how the trip experiences affected their teaching and research endeavours. The staff (co-authors) informally reflected on the field trip to provide some thoughts concerning the benefit of students and staff from two universities being present.

Staff highlighted the benefit of always being accessible to the students during the field trip, and the fact that this was not always the case during single university field trips. This,

alongside the breadth of knowledge represented by staff members, and the awe-inspiring geographical region, allowed for conversations between staff and students about complex environmental topics.

Another clear benefit is the informal development of transferable, interpersonal skills during the trip. Staff noticed that the students were learning and working on interpersonal skills throughout the trip, without realising. Having two universities from different countries means that students are constantly learning about others' cultures from two different geographic areas. They are engaged in cultural conversations and engage with each other as a cohort throughout the experience, building cultural competencies. Staff from both universities, who have extensive experience with undergraduate students, also felt that the bringing together of two universities helped improve student confidence and general self-efficacy. It is likely that confidence among students is built throughout the program in doing research and discussing the implications of it, especially with unfamiliar students and staff. However, general confidence related to personal growth and general self-efficacy development may be an area of future study.

It is also evident from the ongoing interactions among participating faculty/staff from LJMU and SCSU that the Iceland adventures significantly enhanced all the leaderships' personal and professional lives. Leadership members from both institutions remain friends and continue to develop research collaborations when possible. The collegiality and friendships developed are lasting and it was often the little things, the impromptu games, and friendly competitions that bonded the leadership teams, as friends. As important are the impacts the faculty leadership has had on one another's research. Stimulating discussion, sharing of field strategies and approaches have resulted in cross-fertilisation of ideas and approaches to our individual research. Significant additional outcomes have emerged from this joint international study abroad collaborative. One new initiative that emerged is a rethinking of the nature of the student field experiences. Rather than engaging the students in fieldwork that was designed simply to teach skills development, the leadership teams decided to redesign the student field experiences to match ongoing and timely research initiatives across the universities. An example of this is the study of Seyðisfjörður's waters in anticipation of the installation of a commercial salmon farm. Throughout this research, we will be able to engage students in repeated field data collection which will provide meaningful results for both publication and of utility for the local population and policymakers.

Implications for future practice

Based on our experience of the joint field trips, alongside results from student surveys and interviews, and staff reflection, we provide some implications for future practice, if such a trip was to be planned.

- Identify an ideal partner university and field trip location. In our instance, the two universities already had strong links, and were aiming to enhance collaboration. SCSU also already had a field trip to Iceland. This ensured planning and approval for the field trip was smooth.

- Plan well and align curricula. Although we spent a significant amount of time ensuring the pro formas and learning outcomes were aligned, there were still issues experienced by the students. Simple concepts such as the number of assessments, the requirements for assessments, and even the potential grade received can be tension points and need to be pre-emptively addressed.
- As highlighted by Peasland et al. (2019), the teaching design of fieldwork can have a large impact on the skills students develop and recognise during the experience. We specifically included both student and staff-directed fieldwork based on our current practice at LJMU-SCSU. This approach also suggested by Peasland et al. (2019) enabled students to develop a wide range of skills, some of which were not initially by design.
- A vital part of continued trip success is staff reflection and trip amendment. Both universities have a formal requirement to reflect on module performance, but beyond this we always ensured we had an in person debrief at the end of the trip between staff from both universities. Some changes were necessitated through logistical issues (staff availability, location availability, etc.), but we also ensured changes were instigated which would build on the previous year's experiences. Such changes included a virtual meeting between the students prior to the trip, centring the learning goals around one research project, and ensuring sufficient flexibility to cater to all student requirements and abilities. This built a resilient field trip.

Conclusion

This study aimed to evaluate the joint field trip to Iceland, run by LJMU and SCSU, investigating if (1) students gained valuable skills and environmental awareness during the trip, (2) students benefited from the two-university nature of the trip, and (3) if staff see further benefit in this style of field trip. As one of the first studies of a trip of this nature, we can confirm the success of a joint, multi-university field trip. Whilst many of the students' positive outcomes and awareness could have been achieved through a "traditional" trip, the addition of complementary staff and students dramatically improved student outcomes and long-term, multi-national social networks. We have demonstrated that students who participated in the joint experience have increased skills as well as global and environmental awareness and developed long-lasting social networks. They enjoyed the joint aspect of the trip, and many are still in contact with those they met on the trip. The most enhanced learning occurred in field and teamwork skills, and many participants still use these skills in their everyday life. Likewise, staff have developed long-standing research collaborations, teaching networks, and friendships through participation in the field trip.

Disclosure statement

Ólafur Örn Pétursson is the manager of Skálanes Nature and Heritage Centre, one of the sites visited during the joint field trip.

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