

Online fieldwork: Field-based teaching activities during Covid-19

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Introduction

Fieldwork is central to the identity, culture and history of geography and widely perceived as a defining feature of the discipline (Tucker & Horton, 2019). Fieldwork is seen as an essential component of a geography education (Fuller et al., 2006; Raath & Golightly, 2017; Thomas et al., 2013). The vast majority of permanent scientific staff at geography departments of Danish universities consider it impossible to become a geographer without doing fieldwork as part of the education, while a minority consider it possible, but assert that it would be an “impoverished education” without fieldwork (Thomas et al., 2013).

The Covid-19 pandemic poses a serious challenge to field-based teaching activities in geography, as well as other disciplines with a strong tradition for fieldwork. Field courses are a highly valued and strongly prioritized part of the geography education at University of Copenhagen. Within the geography section, the prospect of carrying out field courses online was perceived by teachers and student representatives alike as highly problematic. This paper reflects on the transformation to online teaching specifically for the Human Geography Field Course, for which I am part of the teaching team. This is a mandatory course for 1st year geography students at University of Copenhagen. The course runs in April-June alongside the Physical Geography Field Course and together these field courses form all the teaching activities for 1st year geography students in this period. Initially, it was decided to carry out preparational teaching activities and supervision online in April-May, while the week-long fieldtrips were postponed to Au-

gust, in the hope that it would be possible to carry out the fieldtrips by then. However, in mid-June it became clear that also the field trips would have to be carried out online, because the guidelines for fieldwork issued by the Faculty of Science prohibited overnight stays.

This paper presents my ideas for and reflections on this reluctant pedagogical experiment of online field courses. Firstly, the paper reviews the scientific literature on online fieldwork in geography teaching as well as online fieldwork methodologies within human geography research. Then, the paper presents the Human Geography Field Course and discusses to what extent it is possible to achieve the intended learning outcomes of the course through online fieldwork, teaching and supervision. Finally, the paper proposes measures to support students in pursuing online fieldwork. Faculty regulations were later changed to allow for overnight stays, because of the general decrease in case numbers throughout Danish society over the summer of 2020. Therefore, this experiment was never fully implemented in practice, as fieldtrips were able to be carried out in real-life in August. However, the reflections offered in this paper still have relevance for field-based teaching activities within geography and other disciplines with a strong tradition for fieldwork. As is evidenced by the increase in case numbers during the autumn of 2020, the Covid-19 pandemic is far from over and will likely cause obstacles to field-based teaching activities in the years to come. Furthermore, in the context of global environmental change and growing awareness of the need to reduce long-distance travel it is worth considering how online fieldwork methodologies might be used to enhance and support field-based teaching activities.

Online fieldwork in geography teaching

The traditional field experience invariably involves students being physically present in and interacting with the field environment. There is very limited scientific literature on online fieldwork in relation to geography teaching. A notable exception is a study by Stokes et al., 2012 where geography students did a small fieldwork exercise with half of the students physically present in field, while the other half were part of the field exercise remotely through live video feed and chat functions. Surprisingly, very similar learning outcomes were achieved with both methods of fieldwork. The study found no statistically significant difference between the physically present and remote students in terms of self-reported fulfilment

of learning outcomes. The fieldwork exercise undertaken in Stokes et al., 2012 was relatively simple, as students participated, either live or through remote access, in a guided, teacher-led transect walk and afterwards completed a scoping sheet based on their observations. While similar learning outcomes were achieved through both forms of the fieldwork, the students, who were physically present, indicated higher levels of enjoyment of and interest in the exercise compared to the remote students. All students also expressed a preference for being present in the field over remote access, because they perceived physical presence to have a positive impact on their ability to retain and recall information (Stokes et al., 2012).

While being present in field is beneficial for students' learning processes, online fieldwork could potentially make field-based teaching activities more accessible for a wider range of students. Online fieldwork could offer students "access" to hazardous locations or places where access is restricted or which are too distant or costly to reach (Stokes et al., 2012). Online fieldwork would entail fewer requirements for able-bodiedness and may be less stressful and anxiety provoking for students with mental health problems. Traditional field activities often entail implicit requirements for able-bodiedness and may pose barriers for students with disabilities and mobility impairments (Hall et al., 2004). Traditional field courses may also cause anxiety for students with mental health problems, due to factors such as being away from home and support network, being in a socially challenging environment, living communally and being on unfamiliar territory (Birnie and Grant 2001). Even for experienced academic staff, field courses are a source of distress and anxiety for people with mental health problems (Tucker & Horton, 2019).

Online fieldwork within human geography research

Despite geographers' strong commitment to fieldwork, online fieldwork methodologies are not without precedence within human geography research. The methodological literature offers relevant insights on researchers' experiences with online fieldwork methodologies, such as video interviews, digital ethnography, online questionnaire surveys and field observations in Google Earth.

Video-conferencing software, like Skype and Zoom, offers opportunities for online qualitative interviewing. Video interviews can feel more comfortable and relaxed and some participants may even be more honest

online (Adams-Hutcheson & Longhurst, 2017; Seitz, 2016). Video interviews can also save travel time and resources and make it easier to reach elite informants with busy schedules as well as informants in scattered locations (Fielding, 2010). However, video interviews also entail an inability to read body language and a certain loss of intimacy compared to traditional in-person interviews (Adams-Hutcheson & Longhurst, 2017; Seitz, 2016). Technical problems and awareness of own image may also inhibit engagement and establishment of rapport with informants (Fielding, 2010). Seitz, 2016 proposes strategies to counter some of these difficulties, including finding a quiet room without distractions, slowing down and clarifying talk, being open to repeating answers and questions and paying close attention to facial expressions.

The wealth of social media platforms and online communities provide new opportunities for digital ethnography and challenges traditional conceptions of what and where the field is. Luh Sin, 2015 argues that online spaces should be actively included in research, because social media usage is deeply ingrained in everyday social interactions, to an extent where it may be impossible to separate what happens online and offline (Luh Sin, 2015). Social media platforms may be used to gain access to a particular field and connect with participants, but the interaction in digital field sites may also be an object of investigation in itself (Bluteau, 2019). Digital ethnography is also highly relevant when investigating exclusively online communities, such as YouTube beauty influencers (Garcia-Rapp, 2019) and fan culture within the Eurovision Song Contest (Halliwell, 2020). However, online ethnography raises important ethical issues regarding internet privacy and access to and usage of social media data (Halliwell, 2020; Luh Sin, 2015).

Online questionnaire surveys are widely used in market research, but much less applied in academic research due to the risk of sampling bias associated with low response rates as well as the difficulties of observing the principles of probability sampling. As a notable exception, Brickman Bhutta, 2012 sampled respondents for an online questionnaire survey through a social media site, which made it possible to carry out a large survey very quickly, cheaply and with minimal assistance. However, it can be hard to reach respondents without computer skills and equipment as well as those with strong concerns about internet privacy (Brickman Bhutta, 2012). Furthermore, online surveys relying on non-probability sampling methods have limited use for descriptive inferences, i.e. where the purpose is to estimate characteristics of a larger population from which a sample is

drawn (Kohler et al., 2019). However, Kohler et al., 2019 argues that non-probability sampling may be useful for causal inferences, i.e. where the purpose is to examine relationships between different variables of interest. In similar veins, Brickman Bhutta, 2012 argues that non-random samples commonly preserve many of the statistical relationships between variables of interest, especially if sample size is sufficiently large. Brickman Bhutta, 2012 warns that non-random samples do not necessarily preserve the correlations of interest and that researchers ought to carefully consider how online sampling strategies might influence the relationships of interest.

Field observations in Google Earth is an online methodology for observational data. Clarke et al., 2010 compares the quality of observational data on neighbourhood characteristics obtained in-person and through Google Street View in Chicago. Online field observations are both cost-efficient and unobtrusive and the study found a high degree of agreement between characteristics collected in-person and through Google Earth, comparable to the inter-rater reliability of the in-person observations. However, there are also challenges to this methodology, as Google Street view does not offer comprehensive coverage in all areas and ethical issues have arisen in relation to the use of Street View data (Clarke et al., 2010).

The Human Geography Field Course

The Human Geography Field Course aims to provide students with *knowledge* of relevant methodologies within human geography and to improve students' *skills* in relation to applying relevant qualitative and quantitative methodologies, carrying out field-based collection of quantitative and qualitative data and structuring and communicating the results written and orally. Furthermore, the course aims to strengthen students' *competences* to design a small research project, develop research questions, select relevant methods, design questionnaires and interview guides, critically analyse the collected data and assess advantages and disadvantages of different methods as well as their limitations and suitability for the relevant research questions. The intended learning outcomes of the Human Geography Field Course, as stated in the course description, are outlined in figure 2.1.

<p>Knowledge:</p> <ul style="list-style-type: none">• Interview technique, questionnaire design, cartography, preparation of fieldwork, problem formulation, choice of methods, study design, - techniques and -tools, methods for analysis and presentation of data and methodological critique <p>Skills:</p> <ul style="list-style-type: none">• Apply different qualitative and quantitative methods and techniques relevant within human geography• Carry out field-based collection of qualitative and quantitative data, including experience with planning interviews and contacting many different types of informants• Structure and communicate collected data both written and orally <p>Competences:</p> <ul style="list-style-type: none">• Assess application possibilities and advantages and disadvantages of different qualitative and quantitative methods and techniques relevant within human geography• Design a small research project and formulate research questions and choice of methods• Design quantitative and qualitative questionnaires and interview guides• Assess the suitability of different methods in relation to research questions• Analyse data and critically evaluate limitations in data and methods
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Fig. 2.1. Intended learning outcomes of the Human Geography Field Course.

The teaching and learning activities consist of a preparation phase with lectures, seminars and supervision followed by a week-long fieldtrip to a selected municipality in Denmark and a reporting phase afterwards. As part of the course, students are required to plan and carry out fieldwork in relation to a small, self-formulated research project. Students are required to use a combination of qualitative, quantitative and cartographic methods. During the preparation phase, students form small groups and develop their re-

search projects. The groups have to select a topic, formulate research questions, chose appropriate methods, develop relevant tools for data collection and contact potential informants. During the fieldtrip, students carry out the data collection planned during the preparation phase, with ample supervision and guidance from teachers. Typically, three teachers are available throughout the fieldtrip for a group of app. 20-23 students. Teachers commonly observe students during selected data collection activities, such as during qualitative interviews or collection of questionnaires, and offer feedback and facilitate methodological reflections afterwards. Students also receive supervision both before and after the fieldtrip. After the fieldtrip, students analyse the collected data and write up the results in a report. The course is assessed through the project reports and individual oral exams based on the project reports.

The Human Geography Field Course is a long-running and well-functioning course, which has a good reputation among teachers and students and consistently receives good evaluations from students. While caution is needed as response rates are low (21 out of 77 in 2019, 15 out of 79 in 2018), the course evaluations suggest a high degree of student satisfaction. The vast majority of respondents overall feel that the course is useful (86% in 2019 and 87% in 2018) and that they have acquired the competences described in the course objectives (67% in 2019 and 60% in 2018). The majority of respondents also indicate that they have received relevant academic feedback on their work (67% in 2019 and 64% in 2018). From the oral evaluations carried out by the teaching team every year, it is evident that the course is experienced by students as very intense and challenging, with a steep learning curve and many strong learning experiences arising from the interactions with informants in the field. It is also apparent that students particularly value the high availability and quality of supervision and feedback from teachers during the course as well as the opportunity to gain practical experience with data collection methods. These are also the aspects highlighted in the qualitative comments in the course evaluations. The benefits of gaining practical experience with data collection methods are positively highlighted in course evaluations by 4 students in 2019 and 5 students in 2018. Supervision and feedback is positively highlighted in course evaluations by 5 students in 2019 and 3 students in 2018. Being in the field is highlighted in course evaluations as exciting and beneficial for learning by 3 students in 2019 and 2 students in 2018.

Transforming the Human Geography field Course to an online course

Due to the Covid-19 pandemic, the Human Geography Field Course was transformed to an online course in the spring of 2020. Teachers and students perceived the prospect of carrying out the field course online as highly problematic alike. A key concern was to what extent it would be possible to achieve the intended learning outcomes of the course through online fieldwork, teaching and supervision.

The preparation phase ran online in April and May and posed manageable challenges in relation to fulfilling the intended learning outcomes of the course. A series of online lectures and associated course literature provided students with knowledge about relevant methodologies within human geography. Online seminars running alongside lectures supported students in developing their own small research projects. This gave students the opportunity to strengthen their competences with regards to designing a small research project. Online seminars were less dynamic and interactive than classroom seminars. However, the online teaching platform used (Zoom) supported splitting students into smaller groups, which made it possible to have more interaction and in-depth conversations with students. Students also had access to supervision online at several occasions during the preparation phase. Online supervision functioned much like in-person supervision, though it is harder to read body cues and maintain natural interaction. At the end of the preparation phase, each group submitted a project proposal outlining their topic, research question, research design, methods and time plan for data collection activities during the fieldtrip. Students received both oral and written feedback on their proposal. Judging by the quality of the proposals from my groups of students, the preparation phase had successfully been carried out online. The proposals were of similar quality as previous years, demonstrated a reasonable understanding of both qualitative and quantitative methods and outlined a clear plan for data collection activities.

The field trips, however, clearly present the most significant challenge in meeting the intended learning outcomes of the course. The course specifically aims to strengthen students' skills in carrying out *field-based* collection of quantitative and qualitative data, which would clearly not be possible online. However, it would be possible to carry out both qualitative and quantitative data collection through online fieldwork methodologies, such as video interviews, digital ethnography, online questionnaire surveys and

field observations in Google Earth. This way students would still be able to strengthen their skills in relation to carrying out collection of quantitative and qualitative data and structuring and communicating the results written and orally. How to carry out fieldwork online was the main topic of an additional seminar held in June, when it became clear that the guidelines for fieldwork issued by the Faculty of Science prohibited overnight stays. During this additional seminar, students were able to discuss how they might revise their project design to apply online fieldwork methodologies and reflect on the major challenges associated with this. However, a key weakness in relation to this exercise was that the course literature and lectures contained very little information about online fieldwork methodologies. It would have been beneficial for students' preparation, if the lectures and course literature had contained more information about online data collection methods to make it a more real and accessible possibility for students.

The reporting phase would pose manageable challenges in relation to fulfilling the intended learning outcomes of the course, conditional upon students successfully managing to collect both qualitative and quantitative data online. In that case, they would have real experiences with data collection and be able to critically analyse the collected data and assess advantages and disadvantages of different methods as well as their limitations and suitability for the relevant research questions. However, it is possible that the methodological experiences and reflections from online fieldwork would be very specific for online data collection methods and therefore less applicable to other future contexts, where students might engage in data collection of various kinds. This would obviously be problematic for a course that aims to give students a general introduction to methodologies within human geography.

Supporting online fieldwork

Online fieldwork should be organized based on the principles of preserving as many elements of what already works well in field-based teaching activities. For the Human Geography Field Course, it is evident that students highly value the opportunity to gain practical experience with data collection methods. Therefore, students should be sufficiently supported in revising their projects to be suitable for online data collection methods and in applying online fieldwork methodologies in appropriate ways. Some measure of success in online data collection is crucial for students learning outcomes, as

real experiences are an important precondition for critical methodological reflections. Quite likely, it will be relatively straightforward for students to carry out qualitative interviews through video-based software applications, like Skype and Zoom. The informants targeted in students' fieldwork are typically interviewed in their professional capacities as municipal planners, local politicians, engineers, company directors etc. Like most other office workers, they have likely become well acquainted with video meetings during the Covid-19 pandemic. It is possible that other types of informants would be more difficult to interview through video-based software applications. Carrying out questionnaire surveys online will likely pose more substantial challenges for students, due to the risk of low response rates and the challenges of analysing non-random samples. These methodological challenges should be discussed in plenary sessions and group supervision, so students are sufficiently supported in addressing these challenges.

It also evident that students value the high availability and quality of supervision and feedback from teachers provided as part of the Human Geography Field Course. Therefore, it is important to maintain the same level of supervision during students' online fieldwork. Doing online fieldwork should not mean that students are left to themselves. For practical reasons, students should therefore carry out their online fieldwork in the week that has been planned for the field trip, so all three teachers could be available for the full duration of the online fieldwork. Teachers would be able to observe the students during selected data collection activities and offer feedback and facilitate methodological reflections, as they would have normally done during a real-life fieldtrip. A teacher should also be available throughout the day for standby supervision, if students need to discuss design of interview guides and questionnaires, sampling strategies, data analysis or new discoveries. Furthermore, it would be beneficial to organize online plenary sessions in the evening to debrief the experiences of the day and support students' critical methodological reflections. Such plenary sessions could support reflections within groups and also help facilitate interaction and sharing of experiences between groups. It is important that plenary sessions not only address the specific methodological challenges of doing online data collection, but also seek to draw out more general methodological reflections of wider relevance for human geography research.

So what is lost when students are not able to go to field? Thomas et al., 2013 highlight the significance of being present in the field as a key part of the learning experience and argue that being situated in the field adds 'something' extra that cannot be taught in a classroom. This extra el-

ement is hard to pin down and commonly evades definition, as Thomas et al., 2013, p. 18, elaborate: “*This missing dimension is represented in many forms and connotes a mysterious experience. It involves being visually confronted with the field and thus to ascertain synchronously different and liveable geographical representations.*” Stokes et al., 2012 suggest that being present in the field and moving physically through an area help students establish a sense of scale and spatial understanding of a location, which is hard to recreate through remote access to the field. The students at the Human Geography Field Course have developed their research projects in the context of a selected municipality in Denmark. Most student projects focus on smaller geographical areas or features, such as a particular landscape, coastline or urban area. Not being able to experience this particular context and move through the selected geographical area will probably make it more challenging to understand and interpret the collected data. Therefore, it would be beneficial for students’ learning to arrange a one-day trip to the selected municipality, as is allowed within faculty regulations. This would give students the opportunity to get a feel for the context and the option of doing at least some field observations and in-person data collection.

The distanced nature of online fieldwork might affect students’ learning outcomes negatively. (Fuller et al., 2006) argue that fieldwork is effective for learning because students gain hands-on experience with the real world. While students will of course engage with the real world through online fieldwork methodologies, it is possible that they will miss the bodily experiences and the full sensory impressions that real-life fieldwork entails. Gloubchikov (2015) draws attention to the significance of affective learning in fieldwork, where emotional or motivational responses to learning stimuli plays an important role in learning processes. Real-life fieldwork would probably elicit stronger emotional responses than the more distant experience of video interviews and online questionnaires. Stokes et al., 2012 found that students experienced online fieldwork as less engaging and that this negatively impacted their ability to recall information. Students participating in the field exercise remotely displayed signs of disengagement or distraction at an earlier stage in the exercise. However, the online field exercise in Stokes et al., 2012 consisted of a teacher-led transect walk with a subsequent scoping sheet completed based on student observations. Independent fieldwork carried out by students online will likely be much more engaging. Stokes et al., 2012 suggest that learning outcomes of online fieldwork may be greatly enhanced by building independent data collection and

analysis into the fieldwork and providing opportunity for genuine discovery.

Finally, the social aspects of field trips are hard to recreate through online fieldwork. Field trips are commonly associated with social benefits such as fostering participation, social interaction and cooperation between students and between students and teachers (Raath & Golightly, 2017). For students, field trips may serve as an affirmative, collegial and nostalgically remembered rite of passage (Tucker & Horton, 2019). While students would work in groups around their online fieldwork as part of the Human Geography Field Course, there is likely to be limited interaction between groups during the online fieldwork. Even if teachers are available throughout the online fieldwork, online supervision is likely to focus much on particular challenges or tasks, so students might miss the more informal interactions with teachers. Joint plenary sessions in the evenings may help foster interaction between groups and create a stronger feeling of a togetherness among students. If possible, it would also be beneficial to organize a joint social event one evening, if it is possible while observing the appropriate social distancing measures.

Concluding remarks

This paper has presented my reflections on the reluctant pedagogical experiment of carrying out field-based teaching activities online brought about by the Covid-19 pandemic. While there are significant pedagogical and methodological challenges associated with online fieldwork, this paper suggests that perhaps not all is lost without real-life fieldwork and that there is still significant scope for students' learning. This pedagogical experiment was never fully implemented in practice, as the general decrease in case numbers in Denmark in the summer of 2020 made it possible to carry out real-life fieldtrips. As such, the reflections offered in this paper will remain hypothetical for now.

However, reflections on online fieldwork methodologies still have relevance for field-based teaching activities within geography, and might also have relevance in other disciplines where fieldwork is a crucial part of the identity of the discipline, e.g. geology, environmental sciences or anthropology. We live in uncertain times and the Covid-19 pandemic is far from over, as is evident from the increase in case numbers in the autumn of 2020. This cohort of students will likely encounter further obstacles to fieldwork

in the years to come. They may not be able to do the fieldwork they want nor visit all the places in the world they desire. Online fieldwork may be something students will have to consider as part of their education. Teachers might have to reconsider what the field experience entails and what it takes for students to become “real geographers”. There could also be certain benefits associated with limited application of online fieldwork in geography education, such as improving access to very remote locations and making field-based teaching activities more inclusive for students with mobility impairments or mental health problems. Furthermore, the growing awareness of global environmental change and the need to reduce long-distance travel makes it pertinent to consider how online fieldwork methodologies might enhance and support field-based teaching activities. This would require that field and methods courses within geography education systematically and comprehensively address online fieldwork methodologies, and the potential benefits and challenges associated with these, to make it a real and accessible option for students.

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