

Spaces of learning – practising the SDGs through geographical fieldwork methods in a nature park

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Spaces of Learning – practicing the SDGs through geographical fieldwork methods in a nature park

Abstract

Purpose: While the SDGs and visions for sustainability education applies to many methods, they can be hard to practice. This study concerns an undergraduate geography course designed not only to teach geographical methods, but also to engage with the multi scalar character of the SDGs and apply them to various local urban sustainability issues in a real-world context.

Design/methodology/approach: By means of a mixed method approach, we examine a fieldwork course that invite students into learning situations in which they combine critical thinking with entrepreneurial solutions to local sustainability challenges. We examine the learning material from the students’ cases and explore the geographical knowledge the students’ practice.

Findings: Fieldwork help students contextualizing the multi-scalar character of the SDGs and hereby apply them to analyses in a local context. Students learn firsthand how their planning proposals can be seen as counterproductive by some local stakeholders while remaining attractive to others.

Originality: Student tasks are developed in collaboration with a local municipality and students present their findings to local politicians and stakeholders. Presenting and localizing the SDGs within a local community not only stimulate students in local community analysis, it also provides new perspectives to the local stakeholders.

Keywords: Sustainable development goals, education for sustainability, nature park, geography education, fieldwork, real-world programs

1. Introduction – rescaling the SDGs

As humans interact with the physical environment to the extent that humanity transforms the planet from one geological epoch, the Holocene, towards the Anthropocene (Steffen et al., 2011) it is widely acknowledged that geographical imaginations are vital to make sense of sustainability challenges (Demirci et al., 2020). The multi-scalar character inherent to many sustainability challenges, stretching global to localized phenomena equally applies in the context of the SDGs (Liverman 2018; Salvia et al., 2019). Teaching the SDGs therefore, both encapsulate multi-scalar

dynamics as well as methodological approaches to study human-environmental interactions. This enables students to better understand the complexities of sustainability goals and in turn develop more holistic approaches (Nightingale 2018; Meadows 2020; Panula et al., 2020). As Grindsted (2015b, p.320) notes the journey of geographical transformations is also a journey of the nature of time and space. Consequently, geographical analyses address sustainability challenges, their dynamics, contextualities and consequences across scale, as a mean to understand and inform planning debates over practical solutions and their implementation (Meadows 2020). Even though we live in a world, where more than half of the planet's land surface has been changed by human activities (Steffen et al., 2011; Castree 2015), geographers have been slow in integrating sustainability into curricula (Yarnal and Neff 2004, Chalkley 2006, Westaway 2009, Grindsted 2015a). Yet, core concepts in geography education are space, place, landscape, nature, and sustainability (Mansfield 2009; Grindsted 2018b). While Nightingale (2018) and Liverman (2018) point toward profound contributions to the study of SDGs they also find dilemmas and ambivalences, not least to the multifaceted character of avoiding complex, fuzzy, slippery concept. As far as grand narratives like the SDGs are problematic, their multiple character assemble global and local dynamics and their interactions and effects on different scales. Much like previous debates grasping local-global dynamics as the case of McLuhan's (1966) global village, Swyngedouw (1997) glocalization or similar global-local discourses (Massey 2005), SDGs advocate for sustainable conceptions (Liverman 2018; Salvia et al., 2019) that is commensurable with interchanges between the global and the local. Such conceptual revolutions in grasping multi-scalar socio-environmental processes in time and space is not without their contradictions. As daily commuting from the individual barely impacts global environmental change, glocalization of the SDGs at a systemic level prevail (Demirci et al., 2018, Meadows 2020). Mike Hulme (2008) points to modes of thinking about sustainability across scale. As different disciplines operate in quite different spatio-temporal scales, translation between culturally embodied spatio-temporal organizations of socio-ecological processes is crucial if to achieve "more" sustainable skills. In consequence, a solution in one scale may produce sustainability challenges in another, hence contradictions, dilemmas and ambivalences come into play (Grindsted 2015b; Liverman 2018; Nightingale 2018). Thus, they invite scholars to address contradictions, ambivalences, and paradoxes inherent in different SDG agendas and hereby enable students better respond to them. Yet research on how to practice the SDG with geographical methods is limited.

1.1 Regional sustainable initiatives – localizing SDGs

Linkages between regional sustainability initiatives (RSI) and higher education institutions (HEI) are often limited (Wells et al., 2009; Mader et al., 2013 Dlouhá et al., 2013). Along these lines Grindsted (2018a) argue that regional planning for SDG oftentimes mitch-match between regional-, business- and environmental plans. There is often a missing link between different planning strategies within and across scale. Thus, various sustainability policies most frequently replicate a sectorial division, between climate, energy, and sustainability plans (Wells et al., 2009, Peer and Stoeglehne 2013) with the unintended consequence that they sometimes do not work in tandem (Mader et al., 2013).

In practice, different planning objectives are overlapping, sometimes with contradictory interests or means. Consequently, planning in different spheres sometimes work against one another, simply because of different rationalities in play in different local planning sectors or at different spatial scales (Hulme 2008). Sometimes because it has not been inter-sectorial contemplated, or simply because planning also generates unintended side effects. While municipalities and local planners may be aware of such dilemmas, students may not, why place-based learning (PBE) and community-based fieldwork become an important learning strategy (Gould 1999; Catling and Pickering 2010; Beauregard, 2013). However, geographical methods in connection to SDGs in geography education have not been thoroughly studied. Panula et al., (2020) identify 17 articles published in peer-reviewed scientific journals that comprehensively address geographical teaching and SDGs. This study addresses this gap in the research by examining SDG in relation to geographical fieldwork methods in geography teaching. The aim of this study was to investigate fieldwork methods (see e.g., Hope 2009) adjusting the SDGs into local contexts and citizenship (see e.g., Catling and Pickering 2006; Lugg 2007), by using place-based learning through a case study of a geography field course. By relating a geographical method course and student's fieldwork to real-world SDG problems developed in collaboration with a nature park and its municipalities, this case study also highlights intersectional planning as well as scalar issues of implementing SDG solutions, putting it into local contexts visions and local planning schemes.

2. Presenting the course - Geography in Practice

Space, place, and scale, landscape, nature, and sustainability are core concepts to geography teaching (Panula et al., 2020; Mansfield 2009). Within this context Geography in Practice is a 5 ECTS undergraduate course that aims to introduce students to the wide variety of geographical field methods. Each method is introduced by a lecture and a subsequent exercise where the students are specifically tasked to address a real-world challenge by the application of the specific method introduced in the lecture. Besides presenting a new geographical method at each lecture, the learning goals aim to acquire skills that enable the students to carry geographical analyses and applying the methods to real-world problems (table 1). Several dogmas frame the course, involving that each method is practiced, not only taught (among others inspired by Brost and Bradley 2006). This implies that 8 short lectures (approx. 10-20 minutes) each introduces a new geographical method. Second, students practice the method in relation to SDG problems at a given location to emblem the local contextuality. An example being practicing a regionalization method to compare present and previous land-use at the case site (Nature Park Åmosen), its forests, biosphere reserves and wetlands to analyze SDG 15. Thus, students work with a new method each lecture in a relevant geographical context, following inspiration from the wide range on scholarship including Gold (1999), Catling and Pickering (2006), Hope (2009), Strokes et al., (2011), Grindsted et al., (2013a) underscoring the importance of place-based learning and fieldwork in geography teaching, to mention a few.

Table 1 - Learning goals – Geography in Practice

Knowledge:

- Knowledge on basic, geographical relevant fieldwork methods.
- Knowledge on circumstances and limitations to each fieldwork method.
- Knowledge on the umbrella of methods within geographical research.

Skills

- Acquire and use relevant methods during fieldwork.
- To be able to create an overview of the literature on geographical methods and acquaint oneself with the methods applicability to a specific geographical context.
- Apply the methods to tangible problems and challenges.

Competences

- Competences to use relevant geographical methods in the analysis of complex problems and challenges.
- Competence to plan fieldwork and to conduct relevant data and knowledge production.
- The competence to clearly and precisely circumstances relevant to the geographical analysis and disseminate its results to non-experts (own translation).

This implies that teachers do not present reading material, which should have been prepared prior to the lecture. Instead, preparation as prerequisite to practice the method (Brost and Bradley 2006) is required thus simulating a flipped classroom approach where the specific activity must be prepared in advance by the student to allow ample time to practice methods rather than discussing them (Herreid & Schiller, 2013). Methods lectured is business regionalization, cartographic mapping, city space analysis etc.¹ Moreover, student hand in a written assignment after each lecture and exercise reflecting on the method, data collected and analyses. Each lecture prepares the students before a tree day fieldtrip.

At the three-day field trip students work with a real-world SDG problem, prepared in collaboration with local stakeholders, municipalities, local business associations, NGOs etc. A newly established nature park constitutes the case. Thus, student tasks are designed in an around the Nature Park

¹ We will not go further into detail with each lecture but focus on the fieldtrip. As an example, the lecture on business regionalization aims to introduce students to a geographical method that allow them conduct spatial analysis of physical commercial functions and structures, their networks and/or relations. Thus, students learn to produce geographical data on business characteristics, that make them able to study the local village in nature park åmosen and bring forward proposals to local stakeholders and their struggle to uphold vital functions in the city (SDG 11).

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Åmosen (NPÅ), Denmark (map 1), to develop analysis and proposals that support communities towards taking the steps based on sustainability.

INSERT MAP 1 HERE

Awareness, attitudes, and concerns of the students towards the local and regional issues embedded in the course changed before and after fieldwork. At the first lecture only 3 of 17 students answered, that they had any interest in nature park and local community development, personally or professionally and indeed most students demonstrated neither interest in how small towns re-claim their development nor in processes of regional marginalization or how to employ the SDGs in local community work.

3. Methods and materials

Jyderup is a small-town dating from the 1100 century. For the past decade, the city has struggled with depopulation and declining retail. With approx. 4000 citizens, the city is surrounded by unique environmental conditions and is located at the fringes of the large nature park Åmosen (NPÅ). NPÅ covers 45 km2 of lakes, bogs, moraine landscapes and historical sites (Naturpark Åmosen, 2019), including some of the best Northern European archaeological sites from the Hunter, Stone and Viking. NPÅ covers drainage system with the largest carbon dense wetland on the Island of Zealand (emitting methane and carbon dioxide). Ninety-nine per cent of the area is privately owned (Naturpark Åmosen, 2019)².

17 students from Roskilde University participated in the final three-day field campaign with an average age of 22 years. The students have diverse backgrounds and are all enrolled at the geography program. None of the students had any prior experiences with local based, community engaging field work and none had much interest in the life in the nature park and small towns such as Jyderup. Indeed, several students begrudgingly commented on the fact that they found it more relevant to do field work in Copenhagen, rather than in the countryside.

² Regulations allow individuals to walk and cycle on existing roads and paths on private open and forested land. However, advertised and organized business and non-business activities are prohibited unless cleared with the landowners, who can also restrict access in case of hunting activities (Naturpark Åmosen, 2019).

The educational fieldwork was conducted with the local municipality, the nature park authorities, and the local business association. Prior to the field trip a total of 4 pre-prepared student assignments were produced in collaboration between the course teachers and representatives and stakeholders from the local community as well as planners from the local community.

Prior to the fieldwork, local media broadcasted the arrival and presence of the course and local citizens were encouraged to interact and challenge the students. Before visiting the field none of the participants had ever heard about the nature park, nor visited the small town of Jyderup. The fieldwork began with a small-guided tour with two local stakeholders (local business association) to give students a sense of the community and its contextuality.

At the end of the field trip, the students present their work to the local community. Whereas local stakeholders, planners and politicians are specifically invited, also local citizens are invited to the final presentation. From the very beginning of the course, the students are made aware of these arrangements and are specifically instructed to pay attention to the final arrangement. The aim is to set up a learning-situation in which students know what is expected from them aligned with what Savin Baden (2003) terms self-facilitation role(s) in problem-based teams. Divided into working groups inspired by cooperative learning (e.g., Savin Baden 2003; Johnston and Johnston 1999) students engage their appointed topics and tasks with the assistance of teacher guidance and support from appointed local resource persons. The SDGs are taught implicitly. The SDGs neither reflect the learning objective nor the specific student tasks. Rather, we insisted on keeping learning objectives simple. Consequently, the training and acquisition of geographical field methods stayed in focus. The fieldwork tasks and themes did not depart in the sustainability approaches. In this way the fieldwork was not framed beforehand by established sustainability concepts and approaches but sought to let students explore different actor perspectives and approaches. This means the nature park Åmosen represent a case where multiple actors hold different views on what needs to be sustained and what to be developed in the nature park, thus different sustainability approaches co-exist within a limited territory.

The case site in a nature park and collaboration with local stakeholders however framed the SDGs. Moreover, having local community development as the outset, the problems and themes local stakeholders found valuable to examine remained the starting point, regardless of implicit or explicit SDG references. From here the teachers exposed SDG framings either implicitly or explicitly into discussion whenever relevant.

The four student assignments which formed the basis for the final three-day field campaign was:

- 1) How is the nature park of Åmosen present in local business and retail? To address this issue, students were tasked to produce a classification of local retail and commerce and use this classification to map the spatial configuration of local stores and businesses. Further, students were tasked to address the complicated issue of ways and approaches to invoke the surrounding nature park into the fabric of local commerce and production to enhance the mutual benefits from local community and nature park alike to support SDG 11 and 12.
- 2) How can the local access to the park be facilitated through spatial designs and route planning to invite the local citizenry as well as guest to use the park and its many routes and paths. Here, the students were tasked with producing detailed mapping of existing routes and paths and combing these with a landscape character assessment analysis (Caspersen, 2009). Finally, the students were encouraged also to exhume local folk tales and stories and to apply all three sources of data into a coherent spatial design and design rationale for further routes and paths in the nature park. Hence, this task was very much oriented towards awareness generation and citizenship aligned to SDG 15.
- 3) In the third task, students worked with tourism development and tourist infrastructure designed around SDG 17. Specifically, the students were supposed to carry out phenomenological interpretations of the center of town and to relate to the way the town center portrays itself through window decorations etc. Many tourists demand more sustainable and local alternatives for their vacation. This type of representation analysis was to feed into the students addressing a plan for the city and how the city could and should present itself and its location close to the nature park to attract more visitors.
- 4) Finally, the students were tasked with producing a plan for a comprehensive spatial design of the small squares and open spaces of the town. By performing a detailed mapping of squares and open spaces and carrying out a Lynch- inspired analysis (Pierce & Fagence, 1996) of the overall structure of the town the students were asked to address how the squares and open spaces were used applying a traditional flow-analysis of transportation as well as people. The result of this final task was the presentation of a comprehensive plan for the small squares that would support community engagement around SDG 15 and SDG 17 and align the town with the nature park, effectively turning the small squares into focus points for information on biodiversity and the nature in the area, nature-based activities or recreative facilities.

After three days fieldwork, the students presented their work to a panel of city representatives including local politicians, nature park representatives, key stakeholders in the administration, and the business association. Additionally, more than 50 citizens also participated in the final presentation and some entered debate with the students during and after their presentations. The solutions were presented to the local stakeholders and local media, and they directly or indirectly comprised the SDGs. The students then later analyzed the results, and these were summarized and

submitted with the reports. A final report sent to all stakeholders involved, including municipality, politicians and local associations ended the course. Additionally, 17 students fieldnotes, recorded presentations and their written assignments, including reflections on their learning and competences for future work, comprise the empirical material. The case study intends not to find evidence of x, w, and z, but is guided by methods aligned with experience-based practice (Biggs and Tang 2011) and situates the structure of the course in a real-world problem solving (Smith, 2002) where the students are deeply grounded in particular places and is highly democratic in its processes (Smith, 2002).

4. Result and discussion

At an overall level, contextualizing the SDGs with and within fieldwork methods, help students to identify and become aware of local issues. Also, students reflect upon how relevant fieldwork- and data producing methods can be utilized in local problem solving and design of possible solutions. Having presented their thoughts and results to local stakeholders, the students experience local governance in practice, as politicians, local stakeholders and citizens debate the findings. The students learn firsthand how their suggestions can be seen as counterproductive by some of the local stakeholders while remaining attractive to others, crisscrossing across spatial levels, stakeholder positions and political points of view.

This necessitates a learning process of acknowledging ambivalences inherent in different SDG agendas. Further, this induces students to understand and appreciate the complexity of the field site studied. Student presentations and planning suggestions as well as feedback from citizens and stakeholders as part local networked decision-making give students a contextual understanding aligned with the SDGs. Having students work with problems defined in collaboration with the municipality, further aims to allow the students to critically reflect upon the traditional and oftentimes obvious lack of coherence between policy areas and citizenship relevant to local planning on SDGs, as well as combining critical thinking with entrepreneurial sustainability.

In the following we discuss major finding and experiences from the field work and how the field work relates to the student's conception of the SDG and how to engage in SDGs in a local setting.

Students collected data on various aspects of the local life in Jyderup, with special attention towards studying local shops and businesses and the surrounding nature park. All business locations in the main street were identified, catalogued, and located to analyze business structure and commercial functions of the village.

The students were tasked to produce a generalized map of the business structure, dividing local businesses into branches. The result of this mapping exercise and many of the student observations and following statements, engaged local stakeholders considerably: Students found no shops in the main street accommodating tourist facilities, neither tourist sites, attractions nor experiences. A former tourist information desk identified by the students was no longer in function, and it generated a lively debate among local stakeholders questioning the students about the seeming

conundrum of a town being located at the edge of a nature park, but not engaging in development of nature-based tourism or branding. What about exhibiting local products and the nature park in the shops and having a tourist information desk at the station inviting passengers in the Nature park as their first impression, students asked.

Similarly, students mapping of business features demonstrated that no local retailers referred neither to nature experiences nor to the nature park: the beautiful surrounding landscapes the bogs and wetlands and its wildlife, or some of the best-preserved archeological sites from the stone age in Northern Europe. Students then presented local heritage from the nature park that they found could develop into an additional part of a shopping experience. Further, students tasked with examining small squares and open spaces in the village identified a similar disconnect between the spatial layout of the town and the fact, that no references in the open spaces and landmarks were made.

Hence, during their fieldwork, students became exposed to several dilemmas: Expanding tourism and tourist experiences and shopping in and around the park in accordance with the wishes of the local business association would impact local environments, local wildlife and add pressure on local ecosystem services. Thus, they found SDG 13 and 14 in conflict with further stimulating shopping and consumption (SDG 12). At the same time, students argued that stimulating local-tourism both support community-based development (SDG 8 and 11) and tourist responsibilities towards the local community and the environment once tourism is oriented towards appreciating nature and outdoor learning. These discussions led the students to connect local tourism with mass tourism and the multi-scalar and multi-faceted complexities in local SDG solutions became a focal point in the proceeding discussion.

To elaborate some of these discussions further, students also proposed to establish a green corridor in the main street that leads directly into the near-by forest. Such a green corridor could link the retailers and the business district located at the main street directly with the new routes, hiking and biking trails and the nature park itself. Further the students probed into wondering if their SDG 11 suggestion would link or collide with SDG 12 if retail were designed as a nature-based experience for visitors that directly associate with the forest, the lakes, and the nature park. However, the proximity of the village to the nature park and the nearby lake was also identified by the students as a point of some contention: While some stakeholders and developers was trying to get approval for a nature-based playground next to the lake, local representatives of Danish society for Nature Conservation were repudiating any such ideas and maintained that such an initiative would collide with contemporary nature conservation and disturb the wildlife.

The students identified, also this conflict of interest as a reflection of a wider tension between development goals, with the goal of developing local sustainable cities and communities (SDG 11) and the need to protect life on land (SDG 15).

While it never was the explicit purpose of the course to solve these local conflicts of interest, it was a very pronounced experience for the students to delve into a discussion with local stakeholders on issues of clear importance to the community as well as the individual stakeholders.

Further, the students made proposals of tracks and trail in and around the village and nearby lake with the intention of strengthening local tourism and nature experiences. The students produced a map of their suggestions and this map formed the basis for further discussion about the role of nature preservation versus a developing tourist industry. Contained in this wider discussion, the students identified a nearby former camping site as a potential for further development, for instance as a place for information dissemination about the park, its natural life, and the landscape. Also, this discussion developed into a larger discussion as various stakeholders contributed to the discussion and contributed their own visions for that area. Again, this is interpreted as a case of illustrating the multi-scalar nature of the SDGs and how larger scale issues may become challenges at a local level.

INSERT MAP 2 HERE

The way the course was taught has helped me to contextualize theories and add a perspective of reality to my studies (Student assignment)
The course gave me the option of understanding how relevant real-world tasks may look and how they can be approached (Student assignment)
Having to communicate our ideas (and results) to non-experts has brought me out of my academic bobble and has forced me to reflect upon my own work in relation to the real world (Student assignment)
Being able to use my knowledge of geography skills to help other people has been extremely interesting and rewarding (Student assignment)
I have begun to see the world differently. I discussed this with my fellow students, and it was difficult to find the right words. In the end we agreed that we now, finally, know what it means to think spatially. (Student assignment)
It became clear what planning is all about and how different actors have such contrasting views even in a small place like Jyderup. (Student assignment)
. It has given me a clear understanding of how you as a planner engage with reality and see how the town and the surroundings are inter-connected. It is much more complex than you would think. (Student assignment)
It is clear to me, that things are much more complex than they appear at first sight (Student assignment)
I now have a much greater understanding of how complex these phenomena are and how political, cultural, and physical aspects come together to produce a specific geography. (Student assignment)

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The course has taught me to trust and rely on my own ideas! (Student assignment)
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TABLE 3. Student reflection assignments on their learning from practicing fieldwork

Table 3 represents some of the reported statements by the students at the conclusion of the course. While table 3 is not a complete transcription of all the comments of the students, it is nevertheless clear that many of the students point to their own learning much more than the results they produced during the field work. Most of the students all identify the meeting with “reality” as an eye-opening experience and something that has prompted them to address their own understanding of the complex structures that make up everyday life in a small town such as Jyderup. Especially the multi-scalar understanding of their own work is identified by many students as being central to their understanding of geographical methods and of the use of SDGs in analysis and planning.

By way of illustration, a former camping site nearby the Skarresø lake in the nature park created some puzzle and concern from local stakeholders. While the municipality had three times previously tried to outsource the camping site to be commercially driven without success, in the end it turned out to be a landmark and symbol for the citizens. People living outside the village argued to convert the site to a gateway into the nature park, with information signs, shelters etc. Here, students found themselves exposed to a planning conflict, they aimed to open via the SDGs. The students worked with regionalization methods and mapped the history of the place and its different land use practices during the past approximately 120 years. Further, they identified the previous pollution (SDG 15) from the industrial era, but also found that the lake had been used for swimming and recreational activities, even with a recreational resort in the early 1900, before the lake was polluted. Hereby the industrial pollution of the lake opened the multi-scalar character of the SDGs and its ambivalences (Liverman 2018; Salvia et al., 2019). Students did not produce novel proposals. Neither for reestablishing a camping site nor for a nature park gateway. Rather they found the different stakeholder positions becoming conflictual and the conflict arising between SDG 15 and SDG 11: While a nature park gateway with a strong re-wilding aspect would best restore biodiversity losses (SDG 15) it was less supportive for the local community engagement (SDG 11). This made the students suggest, that the main issue was to focus on restoring ecosystem services and rewild nature. Rather than intervening in the conflict, the students maintained the issue of re-wilding and to establish a “playground” that would attract guests to the nature park. Further, the students proposed to embed into this playground clear and detectable information on where to go to further explore the different geological landscape characteristics, informed the different parties drawing from their regionalization of the SDGs and the history of the place. Much like Demirci et al. (2018) and Meadows (2020) grasping such multi-scalar socio-environmental processes makes the students analyze and localize the SDGs from a systemic level.

Apart from the engagement in SDGs and the discussion surrounding the multi-scalar character of the SDGs (Liverman, 2018), the fieldwork had significant impact on students' awareness, attitudes,

and concerns towards the village and its characteristics and circumvent to (Mammadova, 2019). This is outlined in Table 3 where student statements before and after the fieldwork is summarized. In general, students found the fieldwork provided an opportunity to identify and become aware of local issues by applying methods that produce data from local stakeholders and local distinctiveness. It is not clear from table 3 whether this is the result of the actual data production or indeed it is the result of the students being present in the nature park village and interacting with local citizens, or indeed a mix of the two. In any case, the attitudes of the students changed significantly during the three days: What seemed like a reluctant attitude upon arrival in Jyderup was, at the conclusion of the fieldwork, inversed into a clear desire to continue working in the village and in collaboration with the local stakeholders on how to integrate the city with the nature park.

The contextual elements of the field are thus catalyzed into the produced data and the actual learning situation. Hence, this fieldwork entailed a learning strategy that helped students to understand the contextual and spatial circumstances of a particular case and highlighted how methods applied in each fieldwork situation need adjustment and care towards localizing methods (Beauregard, 2013) as well as the produced results. Understanding the circumstances under which data are produced, is paramount to interpret the spatiality and contextual elements in analyzing a local community and the role played by the SDG. Likewise, literature on geography education, find fieldwork enhance the learning potential and Friess et al., (2017, p. 547) suggest, that classical fieldwork is best in terms of deep learning. At the same time Salvia et al., (2019) argue that research on SDGs do not sufficiently identify ways to implement them, irrespectively of fieldwork methods. This study has addressed this issue, pointing to geographical methods and field course activities to interact with society and local communities and how to work with SDGs in a local context. Contextualizing the SDGs with fieldwork methods, helps students to identify and become aware of local issues (Mammadova, 2019) and further an understanding of the complexity of studied fields and phenomena.

Conclusion

Fieldwork and place-based learning help students contextualizing the multi-scalar character of the SDGs and hereby apply them to analyses in a local context. Exposed to real world problems and tasked to collect data, conduct analyses, and present planning proposals for local stakeholders, students become entangled with stakeholder positions. The students learn firsthand how their suggestions can be seen as counterproductive by some local stakeholders while remaining attractive to others. Thus, localizing the SDGs situate students in a learning position whereby the learning situation is directed towards the multi scalar governance of the SDGs. Hence, the students become exposed to scalar ambivalences inherent in different SDG agendas on what needs to be sustained and what needs to be developed in the nature park. Student presentations and planning suggestions as well as feedback from citizens and stakeholders as part local networked decision-making give students a contextual understanding aligned with the SDGs. Localizing the SDGs by practicing fieldwork within a local community not only stimulate students

and their awareness, attitudes, and concerns of local community challenges, it also provides new insights and perspectives to the local stakeholders who appreciate the proposals to develop the nature park further. Exemplified by debates among local stakeholders questioning the students about the seeming conundrum of a town being located at the edge of the nature park, but does not make explicit reference to it, or engaging in development of nature-based tourism makes significant inputs on trails, information spots and infrastructure for further development – situating students' findings between stakeholder positions.

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Reference:

Biggs, J., Tang, C. (2011). Teaching for quality learning at University. Open University Press.

Brost, Brian., Bradley, Karen. (2006). Student Compliance with Assigned Reading: A Case Study. *Journal of Scholarship of Teaching and Learning*, Vol. 6, No. 2, 101 – 111.

Beauregard, R. (2013). The neglected places of practice. *Planning Theory & Practice*, 14(1), 8-19.

Catling, S.; Pickering, S. Mess, mess, glorious mess. *Prim. Geogr.* 2010, 73, 16–17.

Caspersen, O. H. (2009). Public participation in strengthening cultural heritage: The role of landscape character assessment in Denmark. *Geografisk Tidsskrift-Danish Journal of Geography*, 109(1), 33-45.

Castree, Noel (2015). The Anthropocene: a primer for geographers, *Geography*; Vol. 100, 66-75.

Demirci, A., Miguel-Gonzales, R., Bednarz, SW. (2018). *Geography education for global understanding*, Cham: Springer.

- Dolan, A. M. (2016). Place-based curriculum making: Devising a synthesis between primary geography and outdoor learning. *Journal of Adventure Education and Outdoor Learning*, 16(1), 49-62.
- Friess, A. Daniel., Oliver, A. J. H., Quak, Michelle and Lau, Y. Annie (2016). Incorporating “virtual” and “real world” field trips into introductory geography modules, *Journal of Geography in Higher Education*, Vol. 40 (4): 546-564.
- Gould, P. (1999). *Becoming a geographer*, Syracuse University Press, New York.
- Grindsted, T. S. (2018a). Regional planning, sustainability goals and the mitch-match between educational practice and climate, energy and business plans. *Journal of Cleaner Production*, 171, 1681-1690. <https://doi.org/10.1016/j.jclepro.2016.09.197>
- Grindsted, T. S. (2018b). Geoscience and sustainability: In between keywords and buzzwords. *Geoforum*, 91, 57-60. <https://doi.org/10.1016/j.geoforum.2018.02.029>
- Grindsted, T. S. (2015a). *The Matter of Geography in Education for Sustainable Development: The Case of Danish University Geography*, pp. 13-24, in (Eds) Leal, W., *Transformative Approaches to Sustainable Development at Universities*, World Sustainable Development Series, Basel: Springer. http://dx.doi.org/10.1007/978-3-319-08837-2_2
- Grindsted, T. S. (2015b). Educating geographers in an era of the Anthropocene: paradoxical natures - paradoxical cultures. *Journal of Cleaner Production*, 106, 320-329. <https://doi.org/10.1016/j.jclepro.2014.10.086>
- Grindsted, S. Thomas., Madsen, M. Lene., Nielsen, T. Thomas (2013a). ‘One just better understands.....when standing out there’: Fieldwork as a Learning Methodology in University

Education of Danish Geographers, *Review of International Geographical Education Online*, Vol. 3 (1): 2-25.

Grindsted, T.S. (2013b). From the human environment theme toward sustainability, *European Journal of Geography*, Volume 4, Issue 3, 36-20.
http://www.eurogeographyjournal.eu/index.php?func=past_issues&issue_id=24

Herreid, C. F., & Schiller, N. A. (2013). Case studies and the flipped classroom. *Journal of College Science Teaching*, 42(5), 62-66.

Hope, M. (2009). The importance of direct experience: A philosophical defense of fieldwork in human geography. *Journal of Geography in Higher Education*, 33(2), 169-182.

Johnson, David., Johnson, Roger. (1999). Making Cooperative Learning Work. *Theory into Practice*, Vol. 38, No. 2, Building Community through Cooperative Learning, pp. 67-73.

Jose, S., Patrick, P. G., & Moseley, C. (2017). Experiential learning theory: the importance of outdoor classrooms in environmental education. *International Journal of Science Education, Part B*, 7(3), 269-284.

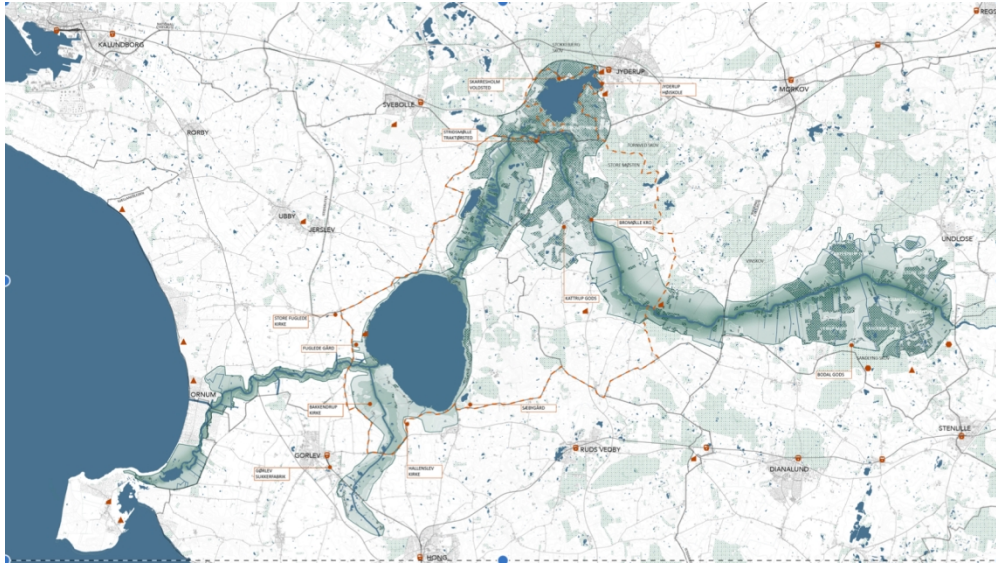
Lloyd, A., Truong, S., & Gray, T. (2018). Place-based outdoor learning: More than a drag and drop approach. *Journal of Outdoor and Environmental Education*, 21(1), 45-60.

McLuhan, M. (1966). *Understanding media: The extension of man*. New York: McGraw-Hill.

Mammadova, Aida. (2019). Sustainable Development Goals as educational tools to raise students' awareness of the rural development of biosphere reserves: A case study of Mount Hakusan Biosphere Reserve. *Bus Strat Dev*. 3, 195–203. Doi: 10.1002/bsd2.88.s

- Mansfield, B., 2009. Sustainability. In: Castree, N., Demeritt, D., Livermann, D., Rhoads, B. (Eds.), *A Companion to Environmental Geography*. Wiley-Blackwell, Malden, MA.
- Massey, Doreen. (2005). *For Space*; Sage: Thousand Oaks, CA, USA, 2005.
- Liverman, Diana (2018). Geographic perspectives on development goals: Constructive engagements and critical perspectives on the MDGs and the SDGs. *Dialogues in Human Geography*, 8:2, 168-185.
- Lugg, A. Developing sustainability-literate citizens through outdoor learning: Possibilities for outdoor education in higher education. *J. Adventure Educ. Outdoor Learn.* 2007, 7, 97–112
- Madsen, M. Madsen., Christiansen, V. Frederik and Rump, Camilla (2014): Students individual engagement in GIS, *Journal of Geography in Higher Education*, Vol. 38 (2), 251-265.
- Meadows, Michael. (2020). Geography Education for Sustainable Development. *Geography and Sustainability*, Vol. 1 (1), 88-92.
- Naturpark Åmosen (2019). Naturpark Åmosen. <http://naturparkaamosen.dk/>
- Nightingale, Andrea (2018). Geography's contribution to the Sustainable Development Goals: Ambivalence and performance, Commentary. *Dialogues in Human Geography*, 8: 196-200.
- Nordea Fonden (2019). Nordea Fonden: Vi støtter gode liv. <https://nordeafonden.dk/nyheder/flere-gaester-til-vestsjaellands-natur-og-kulturskatte>
- Pearce, P. L., & Fagence, M. (1996). The legacy of Kevin Lynch: research implications. *Annals of Tourism Research*, 23(3), 576-598.

- Rahmat, R., Surdin, S., Ramadhan, M., in Sejati, A. E., Hidayat, D.N., Purwana, I.G., Fayanto, S. (2019). The effectiveness of outdoor learning in improving spatial intelligence. *Journal for the Education of Gifted Young Scientists*, 7(3), 717-730.
- Salvia, AL., Filho, W., Brandli, LL., (2019). Assessing research trends related to sustainable development goals: local and global issues. *Journal of Cleaner Production*, 208, 841-849.
- Savin Baden, M. (2003). *Facilitation Problem Based Learning*, Chapt. 4, Being an effective facilitator, Open University Press.
- Smith, G. A. (2002). Place-based education: Learning to be where we are. *Phi delta kappan*, 83(8), 584-594.
- Stokes, A. Magnier, K. & Weaver, R. (2011). What is the use of fieldwork? Conceptions of students and staff in geography and geology. *Journal of Geography in Higher Education*, 35(1), 121-141.
- Swyngedouw, E. (1997) "Neither global nor local: 'glocalization' and the politics of scale." In Cox, K.R. (ed.), *Spaces of globalization: reasserting the power of the local*. New York & London: Guilford Press, pp. 137–166.
- Wall, P. Glenda, and Speake, Janet (2012). European Geography Higher Education Fieldwork and the Skills Agenda, *Journal of Geography in Higher Education*, Vol. 36 (3), pp. 421-435:
- Yli-Panula, E., Jeronen, E., Lemmetty, P. (2020). Teaching and Learning Methods in Geography Promoting Sustainability, *Education Science*, 10(5), 1-18.



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Jyderups aktivitetslandskab

