FIELDWORK IN MY BACKYARD: EXPERIENCES WITH THRESHOLD LEARNING BASED ON DISTRIBUTED FIELDWORKS IN PROJECT-BASED COURSES

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INTRODUCTION

Fieldwork and field-based learning are essential elements of education within the field of planning and architecture[1,2]. Recently, the restrictions caused by COVID-19 pandemic forced the combination of field-based learning with digital collaboration among higher-education to replace or combine field-based learning with digital collaboration. However, the influence of field-based learning with digital collaboration and its effects on students' learning is an under-explored area in previous research on planning education. This paper aims to understand students' learning trajectories in field-based urban planning courses and the roles of external facilitation in this learning. This is achieved by reviewing students' written reflections from a physical and digital fieldwork semesters in the Master of Science program in Urban Ecological Planning (UEP) at the Norwegian University of Science of Technology (NTNU) and analysing the learning processes of the participants through the lens of threshold learning. The findings from this paper have helped in redesigning teaching of UEP field-based courses at NTNU towards a more hybrid approach to pedagogy.

Fieldwork design 2019 vs 2020

Before 2020, semester long fieldworks in the M.Sc. program in Urban Ecological Planning have been taking place primarily in Uganda, Nepal and India. After a common introduction for all international and domestic students in Trondheim, Norway, in the first semester of the program, the entire group traveled together with one or two faculty members to urban areas in these countries to perform an extensive fieldwork, which lasted between 6 and 12 weeks.

In 2019, students were divided in two groups: one travelled to Goa, India and the other chose to stay in Trondheim to undertake fieldwork. To understand student learning, analysis for 2019 is based on student experiences in India where they worked on planning projects in groups.

Figure 1. Fieldwork pictures from India, 2019.

Due to restricted international mobility, such fieldwork was impossible in 2020. Since most of the students were unable to travel to Norway, or anywhere else, they were asked to choose a case study in their home cities, or wherever they stayed during the pandemic. Although they could not meet physically, the students were still divided in groups pf 4 or 5 and were provided with one faculty member as a group supervisor for each group.
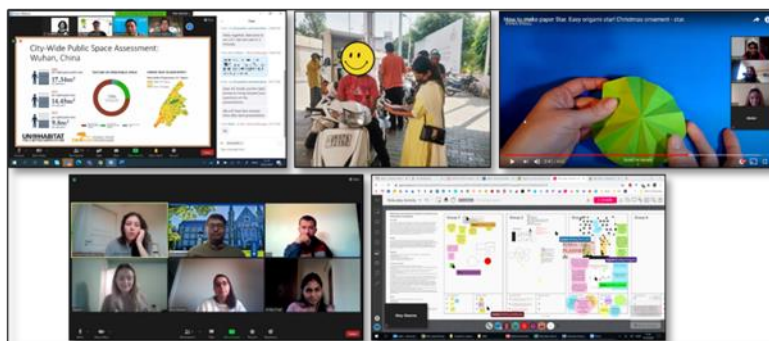

Figure 2. Fieldwork pictures from respective home cities and online collaboration through digital mediums, 2020

An important difference between these two fieldworks was that in 2019, most of the students were unfamiliar with the context of the fieldwork, while in 2020, most performed their study in a chosen place in cities where they lived, therefore had a higher degree of familiarity with the case study.

Comparison in learning 2019 vs 2020

The comparisons in learning in physical and digital fieldwork semesters are based on students written reflections from field (Figure 3), a feedback workshop with the faculty and current UEP students and a UEP alumni survey, all of which form the sources of data for analysis.

Figure 3. NVIVO Word Cloud showing most talked about words in students reflections from both 2019 and 2020

The student progression throughout the semesters was assessed based on the learning outcomes (LOs) of the field-based courses, which was the same for 2019 and 2020 (Figure 4) and analyzed using the theoretical framework of threshold learning.

Figure 4. Learning Outcomes (LOs) for field-based courses for Urban Ecological Planning

As defined by Cousin[3] "the threshold concept has been seen as a valuable tool, not only in facilitating students' understanding of their subject, but in aiding the rational development of curricula in rapidly expanding arenas where there is a strong tendency to overload the curriculum". The analytical framework used for reviewing students' reflections involves identification, processing and overcoming of thresholds. Different aspects of threshold concepts like troublesome (counter intuitive) knowledge[4], transformative[5] and integrative[6] were identified using definitions from existing literature, while processing and overcoming of thresholds were based on students' written reflections. This makes our findings specific for our program but also applicable to other similar field-based courses.

ANALYSIS
LO1: working in complex urban environments
In both 2019 and 2020, students reflect on the difficulty in approaching community members that they encounter on field (Box 1). While in 2019 they reflected mainly on the personal skill of overcoming the fear of striking up face to face conversations with people, in 2020 it was attributed more on the limitation of digital tools that students had to take up during the pandemic in order to approach people. Additionally, the 2019 students reflect very frequently on being unable to build trust with the community while 2020 students do not.

2019 *	2020 **
"..it will be hard for me to actually make the first step and go up to people on the street and start conversation.."	"..tried to switch to use digital methods and asked for people's contact information. Most of them rejected me directly.."
reflection made at the beginning of fieldwork	** reflection made towards the end of fieldwork*

Box 1. Students' reflections on difficulties in approaching people on field

Identifying threshold

For both years, students appear to be forced to go against their intuition, as defined by Cousin[7,] which in this case is of not talking to strangers on street which we think is a necessary threshold to overcome for them to learn how to work with a variety of stakeholders. Even though students in 2020 point to reservations on part of the community to participate in digital interviews and surveys, evidence from 2019 shows that they would might have anyway discovered the 'troublesome knowledge'[8] about difficulties in working on field even if they were given a chance to apply more traditional physical interactions based participatory methods. Which further leads them to an additional threshold of having to build trust with the community. We also observed that a more in-depth orientation on how to use digital tools rather which tools to use would have greatly benefitted the students to overcome the 'compounded'[9] threshold that digital tools presented in pandemic year. We refer to compounded threshold because for 2020 cohort first there is a threshold of engaging people in participatory methods and second that they had to do it through digital tools which presented additional challenges, hence adding an additional layer of threshold to cross for learning to happen.

Overcoming threshold

There is evidence from 2019 that it was easier for students to overcome this barrier or at least to make peace with the discomfort of approaching people and building trust when they had their peers to support them on field. This points to the importance of solidarity and knowledge sharing, and how these help in overcoming the 'troublesome'[10] aspect of fieldwork (Figure 5). This learning is closely related to the LO 2.

Figure 5. Student reflection from field, 2019

LO 2: working effectively in interdisciplinary and cross-cultural teams

2019	2020
When it became very hard for everyone to structure all the input and knowledge …we tried methods like brain-writing and back-casting. That helped us to clear our mind and define the actual issue..	..most of us met into similar problems when conducting fieldwork in our individual case study areas. There were delicate or huge differences because of quite different contexts

Box 2. Students reflections on difficulty in working in groups

As can be seen in Box 2, in 2019, students referred to overcoming differences within their group and moving towards a common goal, which can be attributed to them working on the same theme within one group. On the other hand, 2020 students only highlighted the differences but did not suggest ways overcoming them, which can be attributed to them working on different topics in their home countries and still being required to collaborate within a group and produce a group report.

Identifying threshold

In 2019, students gain the eventually gain competency of moving towards a common goal together which suggests successful achievement of this LO. The threshold of group differences once overcome is transformative[11] in nature. Feedback from our alumni shows that learning groupwork on field is something that has stayed with them through the years. This learning is somewhat missing in 2020, where students seemed more 'stuck'[12] when they encountered group differences and it was also evident in the quality of group reports, the delays in making a common executive summary and that

they did not build the same level of integration as 2019 cohort i.e. groups with better coping mechanisms produced timely reports and better intra-reflections within their groups.

Overcoming threshold

We observed that trust building within a group is much more seamless in a physical environment, an opportunity lost during collaboration in digital environment. This is also evident from students' reflections from 2019 where they reflect on the importance of working in groups by learning from each other (closely related LO 3) and comparing group challenges.

2019
"I can feel some clashes between us. But things are getting better after we realize that the other groups have worse problems. I cannot fully say that I am a good group mate too, but at least they all said that they are happy with our report and presentations and so do I."

Box 3. A student's reflection on groupwork in 2019

What we as teachers can learn for future scenarios where a digital collaboration or hybrid teaching needs to be replicated, is to create more opportunities for inter-group peer interaction where they can learn from each other's successes and failures. The component of self-reflection in Box 3 on being a good or bad teammate is also an example of overcoming integrative threshold[13], wherein a student discovers underlying or integrated layers of learning groupwork as they go deeper into groupwork in the field. Crossing the threshold on how a group challenge is overcome was necessary for the student to go a step further and be able to comment on their own skills as group mate. This self-reflection as a group member was missing among students in 2020 because of challenges with remote collaboration and lack of physical collaboration.

LO 3: learning participatory methods

2019	2020
"Interviewing people is probably one of the most important methods in participatory planning but at the same time one of the hardest. There is not just a potential language barrier but also a cultural barrier….. There are many things that need to be considered when evaluating the data…"	"..The pandemic made it difficult to go further in depth of the community issues with interviews and participatory methods. The lockdowns and social distancing regulations were so limiting and even in some cases disabling…"

Box 4. Students' reflections on methods of participation

While students are introduced to a wide variety of participatory methods, interviews have always been among the most used way to approach and interact with the communities in UEP fieldworks. This was the case in both the physical fieldwork in 2019 and the digital semester in 2020. Students in both these groups made the similar observations about interviews being challenging (Box 4).However, unlike the 2019 cohort., students in 2020 do not question the validity of information they get from interviews. This is likely because getting to interviews was much more difficult for the 2020 cohort, as they could not cross a threshold of trust building (LO 1) with the community hence they did not get the chance to learn and reflect on the possible biases that only one source of data entails. This further points to a need of using other forms of participation as a supplement during remote fieldwork, for the purpose of triangulations instead of relying only on interviews. The few students who diversified their methods in

the digital semester managed to get a deeper understanding of their case study areas, which was clearly visible in their reports and presentations.

It should be noted that when it comes to using other participatory methods, digital methods were a common alternative in 2020. Nevertheless, the success of the same digital methods varied among different contexts. For example, a student working in Trondheim in 2020 found the application of such methods easier than her groupmates working in the Global South. Reflections of other students showed a lack of sharing of these experiences amongst their peers. While there was an awareness of group challenges due to working in different contexts, most students did not take the opportunity to learn how much the same methods varied in different contexts which can be attributed to a weak LO 2.

Identifying threshold

The threshold in LO3 is closely related to overcoming thresholds related to LO2, which deals with challenges in groupwork. Being able to use triangulation methods is also shown to be closely related to successful peer learning. This notion is further supported by case of a student in 2020 who, while having group members in different countries, felt the need to approach a friend living in her hometown to accompany her physically on field and get help in overcoming bias and trust issues with community.

Because students were able to build intra- and inter- group dynamics in 2019, there was an increased understanding of innovative methods of participation as exemplified in the next section.

Overcoming threshold

The awareness that direct interviews were not applicable in all contexts was clearer in 2019 when students created an innovative emoji method to overcome language barriers and get access to unfiltered 'emotions' from the community. This participatory method was proposed by one of the student groups and then shared and eventually adopted by all groups. Hence, they overcame the learning threshold through peer learning (Figure 5)
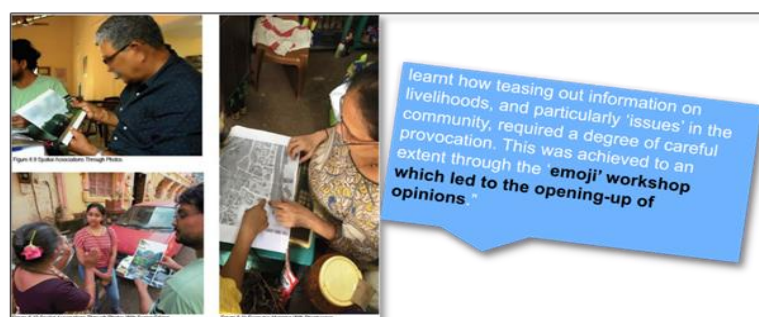

Figure 5. Glimpses of emoji workshop in Panaji anda student's reflection on the emoji method, 2019

Although data from a workshop with 2019 cohort reveals that students felt that they were "forced to learn from each other" because of not insufficient guidance in the field and yet this was not perceived as learning by them. It can be considered as a successful learning outcome achieved in absence of extra. Furthermore, this suggests the need to create an environment that facilitates more peer-to-peer interactions and 'optimal' distance between students and faculty. This balance is especially difficult to achieve when it comes to collaboration in digital space and designing a curriculum that facilitates learning for different contexts. In our experience, extra facilitation is required in a digital scenario.

DISCUSSION

Identifying thresholds

The learning outcomes of UEP's field based courses are designed to promote interdependent learning on participatory methods, theories and fieldwork . Identifying thresholds through our analysis of student reflections allowed us to identify learning patterns and which in turn confirm the l interrelationships between the course learning outcomes as presented in Figure 6.
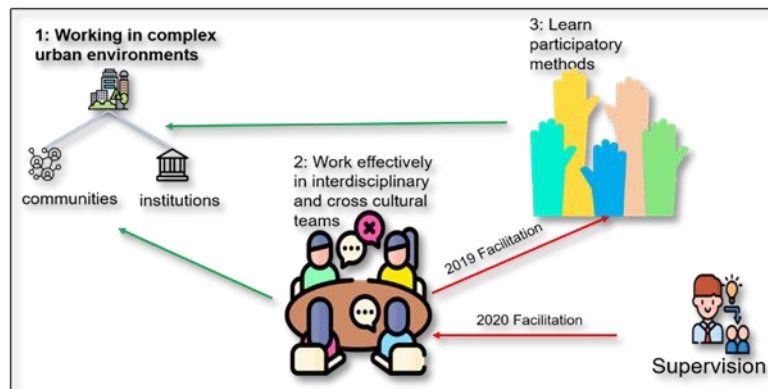

Figure 6. Relationships between learning outcomes as identified through students' reflections and learning patterns

Figure 6 shows learning to work effectively in groups and learning context-suited participatory methods in turn contribute to working in complex urban environments (indicated by green arrows). In addition, there are also other ways that learning happens which might not be directly captured by students i.e. peer to peer learning in 2019 and through teaching facilitation in 2020.

Overcoming thresholds

Peer to peer learning has been identified as one of the two major tools that helps overcomes learning thresholds in both physical semester and digital semester. This type of learning was most pronounced in 2019 when there was knowledge sharing within and across group and better groupwork as in shown in all the three LOs (refer to figure 4 and 5). In 2020, The only time students got a feeling of learning to deal with stakeholders is when we had simulated an stakeholder's role play exercise in groups on an online tool called mural where they give credit to this exercise in their reflections and also suggest it as a possible future methods of learning (Figure 7). In this exercise, students practiced needs assessment, negotiations, and conflict management in a hypothetical urban development scenario.
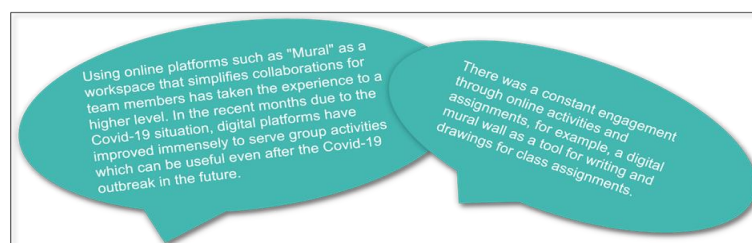

Figure 7. Students' reflections on the use of mural and zoom to create role play exercise, 2020

It is interesting that students feel that they learnt more the most from a hypothetical scenario than a real-life fieldwork, which they conducted in their own neighborhoods. This suggests that not all is lost

when there is absence of physical fieldwork and digital tools can be effectively used to achieve LOs in fieldwork intensive planning pedagogy. This might be attribute to students having firsthand experience in remote fieldwork. In a physical fieldwork we would not have had to recreate the hypothetical urban development scenario.

Teaching facilitation to support student learning was a deliberate, and additional attempt in 2020, as opposed to 2019, to help students cope with challenges in remote fieldwork. Even though 'optimal distance' from field as suggested in LO3 was an important step in 2019's student learning, in 2020 students had been physically alone on field since the beginning of the fieldwork. Further distance from the faculty could have strayed them away from learning outcomes. To avoid that we decided that in 2020 each student group will have individual supervisors wherein we held supervision hours with students once every week and guided them through each milestone of fieldwork. These milestones were 'introduction to areas', 'situational analysis', 'problem statement' and 'strategic interventions'. In the end, they had to compile group reports with their individual case studies and for the first time we had also asked them to reflect on each other's' work, on difference and similarities, in order to encourage peer-to-peer learning.

To facilitate timely and systematic group supervisions, the supervisors were working as a group too. We compared notes with each other, which often meant holding special meetings every week to discuss our groups' progress (Figure 8)
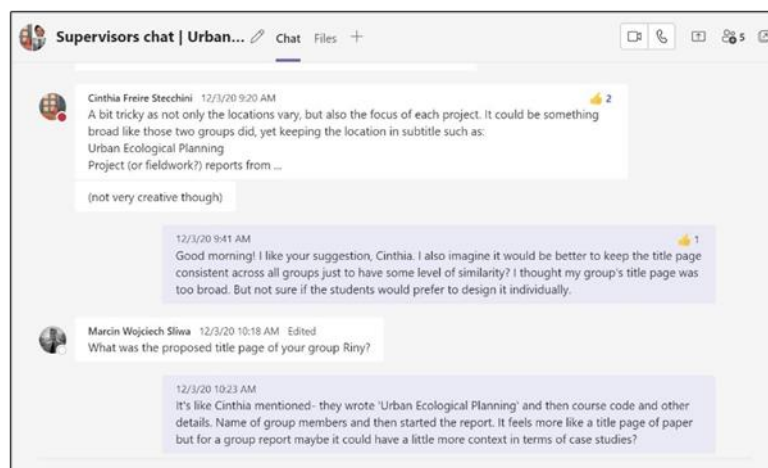

Figure 8. a screenshot from supervisors' online discussion on how to guide students to make group reports, 2020

This was done to systematize the information that we gave students every week to achieve consistency in learning. This was unlike the 2019 fieldwork where it was mostly one field coordinator and 1 or two members of the faculty accompanying students in field to support them in their fieldwork but not necessarily with weekly and separate group supervisions. The added guidance in 2020 maintained the learning trajectory of all groups to be at par almost always. Even then the group dynamics were tough because not all groups had built the group dynamics as well as the 2019 cohort owing to difficulties in remote collaboration.

CONCLUSION AND PEDAGOGICAL IMPLICATIONS

The paper shows strong link between extent of learning facilitation, both through peer to peer interactions and through teaching, with the ability of the students to overcome thresholds when they

are on field. We have observed that experiential learning is best achieved in a non-digital format but can to some extent be recreated in a hybrid mode through methods such as role play as is evident from students' experiences in 2020. Additionally, role play workshops and mural itself are valid planning tools in participation applied across the world. Hence, will be to including a mandatory module on role-play exercise for our methods course on fieldwork in 2021 and possibly for all the coming years. This is not to replace the real-world immersive experience but to supplement it and perhaps nudge the students towards expectations vs reality of fieldwork when they role play amongst themselves vs when the interact with stakeholders on field.

Balanced facilitation in the form of providing a supervisor from faculty to every group is also an important takeaway for us that will be implemented again in the coming year even though all the students will be physically present in Trondheim for fieldwork in 2021. We say balanced in order to ensure that we give space to the students to reflect on challenges and discover threshold on their own but we still keep track of their discoveries through their reflections and nudge them towards identifying these thresholds and overcoming them when they feel stuck. For this reason, we will continue to keep written reflections as necessary part of the students' fieldwork exercise.

We will also be modifying our guidance to suit the local context of a 'Global North fieldwork' in Trondheim. This is imperative as our findings suggest that students find certain methods, especially digital participatory methods, easier to implement in the Global North.

Even after a year into the pandemic, there is still a strong possibility that some of the students will not be able to join immediately owing to unexpected visa delays due travel restrictions. In that case we will be replicating remote supervision model like last year but this time with our own enhanced learning and while implementing the above pedagogical changes.
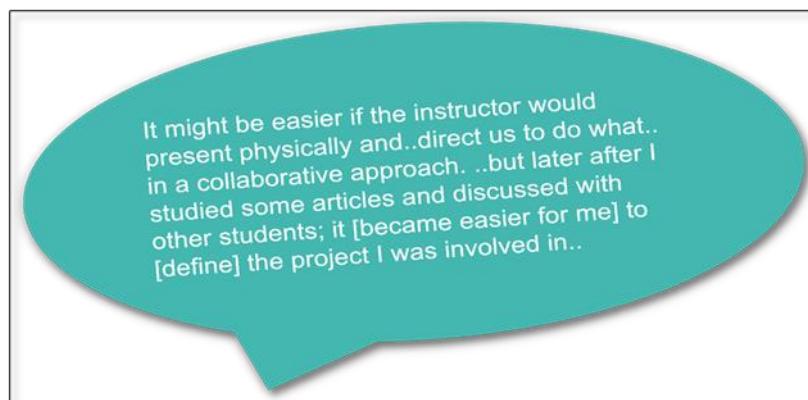

Figure 9. a screenshot from supervisors' online discussion on how to guide students to make group reports, 2020

Now that we have found out that in the absence of physical supervision, students' learn a lot more through their peers (Figure 9), we would be consciously creating more digital meeting spaces and exercises to help the students who would be doing their fieldwork remotely again. Threshold concepts have not only helped us in adopting new pedagogical approaches, but these findings can also help other similar field-based courses that are seeking to move towards hybrid pedagogical models.

NOTES

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