

## **Experiential learning and reflection through video in field-based learning: lessons from Bhopal and Trondheim**

*Brita Fladvad Nielsen, Hanne Vrebos and Rolee Aranya*

### **Abstract**

The first semester of the master program Urban Ecological Planning consists of extensive fieldwork and deep learning. Studying informal settlements of Indian cities require that students think action and are able to reflect upon own experiences. Sensory impressions represent a significant part of the students' experience, and the course facilitators need to support reflection in an intense and challenging context. The students' role as outsiders, their ambition to make a difference, and their professional role as future urban planners are challenged when meeting the realities of citizens in Bhopal, India. In fall 2018, a group of students stayed behind in Trondheim to do their fieldwork in the area Lademoen. As an educational experiment, we encouraged the students to not only reflect upon their experiences through written words on paper, but also to try to communicate and reflect visually, and deliver their reflections as videos. The results were beyond our expectations; the students delivered high quality short videos, showing how they interpreted their experiences, the course and the learnings about the communities in which they spent days, weeks and months together with. The students also explained that as they were filming and editing the videos, the process itself 'did something' to the way they saw the complexity of the problems in front of them and how they made sense of the whole. This suggests that video reflections can help students complete the cycle of experiential learning[1], something that can help them move towards a stage where it becomes easier for them to act based on their learning.

### **Teaching and learning in higher education**

Educational theories emerged early as classroom instruction theories. The most conventional form is called the hydraulic model of education, in which information and knowledge is seen as a fluid that can be poured from the teacher's head to the head of the student. Educators that prefer the hydraulic model or are expected to apply this theory, will believe that the more information they transfer, the better, and will favor students that are able to reproduce exact information that has been transferred to them. On the other side of the classroom instruction theories is the idea that there is no single and simple description of knowledge, but that knowledge is something that students should search for actively, be surrounded by and absorb. It means that while the student is a 'sponge', it is the educators' duty to make knowledge accessible in many forms to support different cognitive, linguistic and social abilities. While also primary education has evolved to think of younger students as active learners, as students move on towards higher education, the role of the student as an independent thinker becomes more important. In the university, the educator becomes a facilitator of the independent thinker's learning rather than a mere instructor; where the teacher's purpose is to make knowledge available and to help the 'sponge' become an active learner. In Norway known as 'student active learning', the idea that the student has responsibility for how much they learn, is seen as ideal[2]. An active learner must gain proficiency in acquiring, finding, processing, reflecting and also to actively apply theories and transform them to action in the real world. In what is most known as project-based

learning, or active learning, maturation, natural growth, reflection and critical thought, are key words here. In the modern university system, the goal is to support the development of critical and reflected humans. The flipped classroom model is an example of the reversed idea where students acquire knowledge between classes, and spend the classes for reflection and discussion. 'Instruction that used to occur in class is now accessed at home, in advance of class. Class becomes the place to work through problems, advance concepts, and engage in collaborative learning.[3]

### **Learning 'in the field'**

In the international master program Urban Ecological Planning (UEP), students from all over the world arrive in Trondheim to learn about people-centered, bottom-up approaches to urban planning; in which the global impacts of urban planning on informal and marginalized groups in the global south have priority. Originally centering on urban planning in the global south, the study program aims at educating planners that can do and act in the world as change-makers for better cities and urban peripheries. In change, reflection is crucial: 'Reflection is a way to stimulate focused, thoughtful and reasoned reflections that show evidence of new ways of thinking and doing'[4] Urban planning itself is a balancing act of multiple priorities and stakeholder agendas; yet it is common practice to optimize only one specific parameter without considering how urban decision-makers have to balance a multitude of criteria[5]. In UEP the students add the human perspective to these criteria, looking for the perspectives of the invisible stakeholders in urban planning; the ones with less legal rights such as tenure and that are less represented in decision making; often living in urban informal settlements[6]. The approximately 20 students travel to India following three weeks of introductory classes. To these students, the streets of India become the 'flipped classroom', in which research assistants, professors and researchers support their reflection, learning and complex problem solving. In-field learning is a situation where everything is available for the student to mature, grow, reflect and become critical thinkers and doers. While 'the field' is starting to become a somewhat outdated term, we refer in this paper to the situation in which the students are in the same context as the people whose lives and surroundings they are studying; continuously researching and reflecting in a project-based manner. Field learning is indeed essential parts of disciplines and professions such as geography, biology, geology, architecture, physical planning, and (urban) design, as exercising the students ability to observe is directly influencing their ability to understand[7]. It is well documented that fieldwork experiences contribute to deep learning and to understand complex connections. Already in 1979, interviews were conducted with students working in the communities of San Francisco and that the work had in particular found that the students had achieved increased understanding 'around issues of authority, reciprocal influence, the management of role discontinuity and conflict, and ability to see connections between disparate frames of reference'.[8]

In India, a city has been chosen in collaboration with the School of Planning and Architecture (SPA), and once the students arrive there, the real submergence 'into the field' begins. The students are provided with pre-decided areas of informal settlements and they stay in a hostel and lectures take place at the local university or in the hotel by the lecturers and research assistant that travels with them. During this semester, they do not only have to learn about urban planning in the global south, but they are also taught about group

psychology and team-based learning. However, in 2018 one group of five students chose to stay behind in Trondheim and conducted their field work there. They were introduced to the same literature, largely focusing on informalities, invisible stakeholders, community building and reversed globalization.

In the center of India, the students were working every day with participatory methods in slum areas and amongst local vendors. The particularities of tenure and contingency planning (planning for uncertain futures) are central, and it is essential that the students see the impacts of urban decision-making on people's lives. Seeing impact and realities first-hand is a core strength of Urban Ecological Planning (UEP), based on the assumption that deep learning takes place in supervised and theory guided practice, in the contact point between student and interaction with citizens in informal settlements. During the field-work, the students learn about participatory mapping, situational analysis, local urban planning regulations and impact and livelihoods of informal settlements. As the final output, they students have to deliver proposals, small and strategic interventions to the neighborhood that they have been working with, based on the situational analysis and participatory processes.

### **The Visual Learning Spaces project**

As a reflection process, a diary approach has been applied in the first semester of UEP since 2007. The students have been encouraged to write a reflection diary, in which they express their thoughts and their development as the fieldwork and the group processes evolve. Every Friday, a reflection session was held together with a reading session; with the purpose to encourage the students to bring ideas from literature on urban planning in the global south and informalities, into the reflection process and to look actively for theories to help their maturation.

In the contact point with new projects and challenges, the individual might reflect over what she or he learned, and the impact of field-work is hence accumulative and sometimes difficult to measure. The critical learner goes through a period of 'crisis' in which they see everything and nothing and start asking questions about the purpose of the complexity. After this process, the 'deeper learning' takes place in which the student will actively look for the pieces needed to answer the questions that have emerged during the 'crisis'.

Strategic funding from the Architecture and Design faculty was provided in 2018, for the purpose of exploring how visual tools could improve learning in field-based courses. In this paper, we describe the experiences with introducing video as a tool for reflection in field-based, active learning in the study program Urban Ecological Planning at NTNU in fall 2018.

In the field work of 2018, Visual Learning was introduced as an alternative to the weekly written reflections, to see whether visual approaches could add something to the reflection process. Visualization can be used to improve communication, structure complex problem solving, and to build trust, it can also be used through 'critical visualization' to challenge power structures[9]. In design disciplines, visual and tangible approaches are regarded as the key characteristic of how the designer 'thinks in action' [10]. While developing physical or visual artifacts, the (urban) designer brings previous learning and reflection into the process of making[11].

Video is in human-centered design practice mostly applied for the process of gathering insights about end-users whom to design for, particularly in interaction design and for user-testing of prototypes[12]. In urban design, observational video, once radical, is now a well-known method for gathering insights on how to create livable urban spaces[13]. Insight gathering is the first step of any conventional design process. In other words, video is most often applied for observational function[12]. Video can also be applied to reconstruct or simulate decision-making or test design prototypes. Indeed, video and photos are applied within several disciplines seeking insights, and design draws ideas from anthropology, sociology, art and journalism.

The research aspect of understanding the end-user in order to design good experiences and analyzing human activity is in the most common purpose of video in design. In contrast, the process of reflection that happens as a result of the video making is less documented. In an educational setting such as the field work of the UEP students, we were interested in studying whether reflecting through a visual medium transformed information to knowledge in some way that improves reflection. The second reason for asking the students to reflect through video, was to see if this could provide the possibility for students and researchers outside the field to learn from their processes during and beyond the fieldwork semester.

### **Set-up and task performance**

The students that conducted their videos in India conducted the video reflection process with students from SPA Bhopal, while the students in Trondheim created the video by themselves. Introducing the option to create video as a part of the reflection deliverables, the students could experiment with new ways of framing their problem understanding. The students were introduced to the idea early on as the field work began. Following a two-day design thinking introduction workshop in which visual tools were tried and discussed, the students were told to introduce photo and video into their field work. Following the theories of photo voice of photo ethnography, together with ethical guidelines for the process, the students were provided with literature to inform their process and to deliver video material to show their reflection through video.

The students were given flexible deadlines to encourage maturation and creative confidence, where reflection and experimentation was emphasized rather than

### **Pedagogical results and discussion**

The students delivered a total of six videos that lasted between 2 and 7 minutes. The videos were presented and the students gave feedback on how they perceived the process. While the students had not succeeded in making the video 'participatory' and had spent, in their view, too much time on improving the quality of it, there was one remark that was unison amongst the groups;

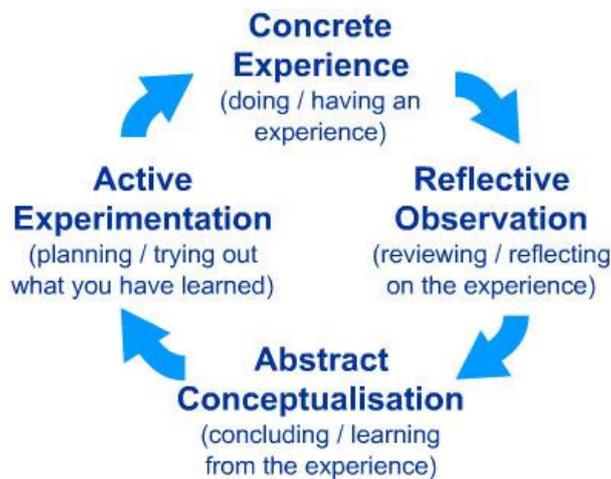
*'Something happened as we put together the video. Seeing the different bigger pieces, putting it together as a story, and then looking for the details. I saw the problems much clearer, as when before it was very messy!'*

Student, Urban Ecological Planning, 2018

As with the students in India that were collaborating with SPA students, the first video of one of the groups created tension amongst the students. They did not agree on how the story was told and decided to remake it. Some of the students also presented unfinished footage, reflecting on the process of creating trust and the atmosphere of one of the backyards that they were invited into.

Both of these experiences, one of the process of reflection and reasoning needed to tell a story, and the other as a situation of conflicting stories, show that the process of creating a video to represent the process resulted in new ways of looking at the situation at hand. Even the conflict between storytellers, created awareness in the group that there were different ways of analyzing the problem and that the underlying assumptions affected the way the story was told. The group in which the conflict happened, spent weeks afterwards discussing whether the problem they were looking at was a 'real problem' or not.

The concept of "reflexive learning" [1], arguing that it depends upon abstract conceptualization, is relevant for explaining what the students explain.



*Figure 1: The process of experiential learning. Experiential learning: Experience as the source of learning and development,[1]*

Our experiences suggest that visual learning through video actually assists, or forces, the student to complete this cycle, which more often stops at abstract conceptualization in written assignments. Another aspect one can mention is the language and cultural barrier. The video was meant to be a means of transcending that – to let students involve stakeholders using a visual medium that could potentially bridge the language barrier. The students expressed that the most challenging aspects of the task of creating a reflective video, were the technical barriers. The students found the process of using video and other visual tools such as drawing and design thinking techniques intriguing, motivating and effective in building trust within the group and with the participants in the field, yet they expressed a wish for more training, preparation and guidance.

Moreover, the communication with the students from the other university, and the difficulty to reach a stage where the inhabitants in their neighborhood would participate actively in the video making. While further support to assist the students in this process could have aided this process, the students took ownership to the process and made the video very much about their own experience about learning in field. While video

ethnography often focuses on developing research insights and sometimes on the reflective process between the researcher and the participant, the students as such applied the video creating process more as a reflective process amongst themselves, applying it as a conceptualizing activity. The process also assisted their motivation and the way they expressed it, it helped them move beyond the chaotic situation of feeling overwhelmed by the field-work impressions.

Another way of viewing the video making process is by looking at storytelling. Storytelling as reflection is a field more discussed than video or visual tools, and we have found support that students applied the process of telling stories through video, as the main form of reflective practice given the task and tools provided to them. Alterio and McDury explain that *'When storytelling is formalized in meaningful ways, it can capture everyday examples of practice and turn them into an opportunity to learn - encouraging both reflection, a deeper understanding of a topic and stimulating critical thinking skills. The technique can accommodate diverse cultural, emotional and experiential incidents, and may be used in many different contexts eg formal/informal; one-on-one/group setting.'*[14] As in the case of video making as a reflective process, the students took ownership to the process and created stories, abstracting and conceptualizing, together. This also counts as a team-building activity. The students expressing afterwards that the creative process helped them look at the many scattered issues as a whole, and helping them to see what was there, but also to identify the missing pieces.

The student videos also contributed to Presenting the videos and discussing them, with the UEP students and with the student in SPA Bhopal, and with researchers and teachers in other settings. The videos were also discussed with Norwegian municipalities, allowing the possibility of discussing different ways of conducting fieldwork in different settings.

At the same time, we did not succeed in making the video creation process itself experimental enough, nor participatory, as with the citizens in Bhopal and Trondheim. Students explained that they needed more technical guidance and methodological approaches, while the other design thinking tools were of lower complexity and easier to implement. Trust-building is the basis of all participatory processes, and introducing video also felt intrusive for some of the students.

Introducing the possible approaches to visual learning earlier, before the field work begins, and adding lessons into technical and ethical approaches from participatory photographers, video ethnographers or similar, could strengthen the creative confidence amongst the students. Secondly, an improvement would be to introduce brief tasks to test out simple techniques to reduce the expectation that the video should be of high quality.

## **Final remarks**

Our experience with introducing video as a part of the experimental learning cycle suggests that (uban) design and planning could benefit from an increased use of visual and creative tools for visualization. Increased access to digital technologies makes this an easy choice in educational programs. The students explained that the video creation process helped bring them through the critical phase of deeper learning, by linking impressions, observations, theory and objectives. Thinking visually, the process of creating the video as a story, was

hence transformative and encouraging. It motivated the students and generated a lot of discussion about approaches and conclusions.

Other pedagogical researchers focusing on field-based learning point out that the most pressing challenge to any field-based learning is that a lack of knowledge and resources, or larger student groups can result in education that make passive rather than active and motivated students[13]. While in-field learning and tools such as video can increase and improve learning and reflection, the process depends upon small student groups, resources and support.

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