

Back to School – the Impact of Short Timeframe Student Case Studies on Projects and Educational Programs in the Context of Urban FM

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ABSTRACT

Background and Aim: This paper looks at the degree to which three student projects had an impact on the cases and educational programmes related to this summer school from both a practice and pedagogical perspective. The aim is to look at the degree to which a short-term workshop can create tangible and practical outcomes for a real case study in the context of Urban FM.

Methods/ Methodology: The data collection for this paper consists not just of preparatory desk research, but also a descriptive analysis of the case study outcomes of the students. This is done by looking at the outcome of the fieldwork and student presentations, and how they could potentially contribute to their projects in comparison to longer-term initiatives. This will also be supported by data in the form of survey and interviews with participating educators and students.

Results/ Outcomes: The study resulted in substantial outcomes from the students. This was not just in the form of data, but also in the form of materials for inclusive citizen participation as well as 3d models and conceptual outcomes. Whilst these outcomes impressed the educators in terms of their speed of completion, challenged with post-study engagement with the case study holders made the outcomes on cases themselves in the longer term difficult to implement.

Practical/ Social Implementation: This study has offered possible means by which to improve the involvement of citizens in these urban development projects using the mechanisms and materials created during the workshop. The data collected and conceptual aspects could also offer perspectives on urban development projects in the form of inspired reimagining.

Keywords: Urban facilities management, summer schools, EuroFM, case studies

Type of paper: Research paper

1. Introduction

The importance of workshops and summer schools in Facilities Management (FM) education at University level are vital in the acts of dissemination and advancement of the discipline. The two most crucial stakeholders, are those of students and their associated educators. Whilst the primary role of a student in a university context is that of being the receiving stakeholder of knowledge and skills, there is also the possibility to have them contribute to knowledge and skills advancement in educational programs, as well as through case study projects. In the case of educators, there are grounds to consider that contribution as being potentially more fragmented in the context of short time scales classes, particularly if these are not being held in their home institution. The purpose of this paper is the highlight not just the pedagogical possibilities offered by this and similar events, but also how they can be utilised to contribute to emerging fields.

Research Questions

This paper will answer the following research questions:

- 1) What was the impact of the summer school on the educator participants?
- 2) What was the impact of the summer school on the educators home institution study programs?
- 3) How successful was the summer school as a pedagogical exercise?

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This paper will consider each of these questions in turn, however firstly it will look into the theoretical framework behind the study, the methodological approach as well some of the outcomes from the summer school generated by the students.

2. Theoretical Framework

Before going into the core of the results of this paper, the context needs to establish basic theoretical definitions.

2.1. Community-Based and Urban FM

In terms of what FM can be considered to be it's in its most widely recognised form, it is *"the integration of processes within an organization to maintain and develop the agreed services which support the effectiveness of its primary activities"* ((CEN) 2006) according to the European of Standardization (CEN) and is a definition widely adopted by many FM organisations, such as the fore mentioned institution EuroFM. Whilst FM in this context is often considered to be related to activities ranging from maintenance to catering and cleaning, the definition of what constitutes Facilities Management is becoming as increasingly broad as it is complex.

Urban FM is a developing concept in FM, as urban areas are requiring more coordination across different sectors where supporting shared values can lead to opportunities that benefit the social, environmental and economic aspects of an area (Lindkvist et al., 2020; Temeljotov-Salaj et al., 2020). Community-based FM (CbFM) is a similar concept to Urban FM but is more entrenched at the community level. Alexander et al., (2006) for example define CbFM as *"the management of facilities and the delivery of services to reflect the community and environment in which they reside and operate"* (Alexander et al., 2006, p. 263).

2.2. Intensive Workshops in Educational Theory

Intensive workshops and summer schools present an opportunity for educators to teach in a different way, and learn to be more independent and autonomous. Italian educational theorist Maria Montessori stated that in the case of educators and students, development takes the form of a striving for ever greater independence. Montessori therefore sees teachers as a guide in this process towards autonomy. She states that the teacher's goal is to teach students in such a way that they need them less and less, and are not so dependent on them (Montessori, 1912). To quote Montessori, *"the greatest sign of success for a teacher is to be able to say, the students are now working as if I don't exist"*. This fits in with the concept of Trondheim Summer School more directly, where the students do not know each other and the educators have seldom worked together physically, meaning that a degree of functional autonomy is necessary due to the time restraints on developing a more traditional relationship between educators, students, and amongst themselves.

3. Research Methods

This study was conducted through a subjective evaluation of a Euro FM summer school which took place in 2019. Data collected includes a *questionnaire survey, interview and observations* from January to August 2020 along with supplementary data collected during the Summer school itself in September 2019. The participants were the students and educators from Netherlands and Norway attending a one-week summer school event in September 2019 at Trondheim, Norway. The aim of this to approach was to highlight the events contributes to pedagogy as well the field more widely. Underlying research methodology focuses on how these two factors can be extracted from a combination of the interviews and survey, as well as experience of the researchers who attended the summer school. With this in mind it can be considered to have a case study focus with a primarily cross section perspective.

3.1. Summer School Preparation

Lectures, reading and pre summer school summer school assignment submissions were done through a *'Collaborative Online International Learning'* tool (COIL) called 'Padlet'. This not only allowed for a 'one-stop' solution to combine all of these aspects, but also provided an opportunity for students to

ask questions to the educators that everyone could see, as well as allow students to co-organise travel arrangements and social event amongst each other. After the Summer school commenced, WhatsApp groups were also set up by individual groups to organise their project and social activities as well. As of March 2021, the students remain in touch in these groups.

3.1.2. Student Case studies Overviews

This summer school event was held in three different project sites representing the residential and non-residential area urban typologies in Trondheim. The areas were chosen based on NTNU's existing relationship with the cases, as well as their relevance as cases for the objectives of the summer school more broadly.

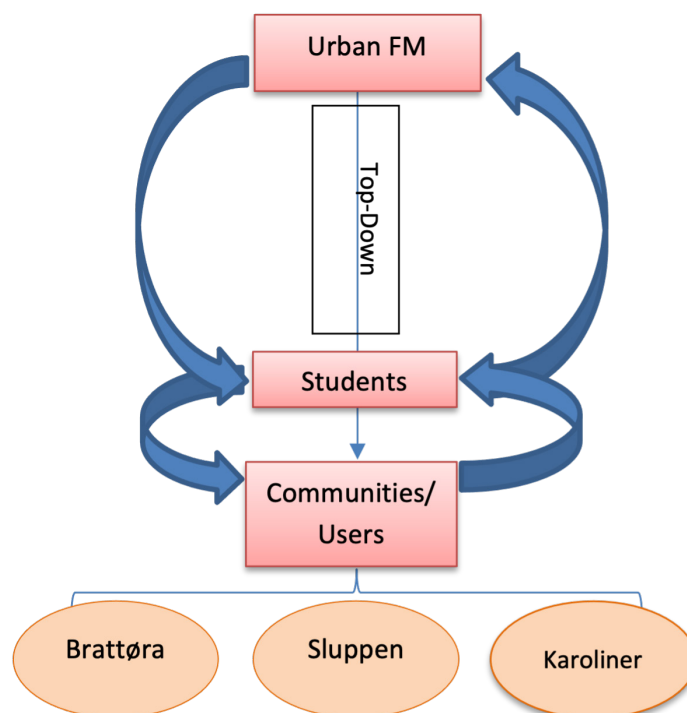


Fig 1. Co-creation and Intermediary model for the Summer school, Senior, 2019, p.3, Students can act as intermediate actors in the co-creation process towards more sustainable development.

Preparation and Induction

After the students went through the short educational program in Urban FM and CbFM, professional education gave the students a detailed briefing of the cases themselves, and the expectations of the students.

Brattøra area (office and leisure space)

Brattøra is a workplace area including the city harbour, hotels, museums, convention centre and sports facilities. Brattøra will undergo densification in the years to come through the construction of apartment buildings and the new Trondheim Station Centre, which combines public transport depots, offices and dwellings.

Sluppen (office spaces and residential)

Sluppen-Tempe is a major transformation area in Trondheim. It is focused on a sustainable urban development area including offices, public buildings and dwellings.

Karolinerveien Housing Cooperative (Exclusively residential)

Karolinerveien Housing cooperative is located in a residential area in Trondheim. The apartments in this zone (mainly built in 1967) are maintained by TOBB (Trondheim og Omegn Boligbyggelag), the regional branch of NBBL (Norske Boligbyggelags Landsforbund – English 'The Norwegian Housing and

Construction Association'), the co-operative housing federation of Norway

3.2. Questionnaire survey

An online questionnaire survey was conducted on the students (but not educators) attending the summer school 2019 during summer 2020.

The survey was hosted by Google forms. This was done for a variety of reasons. Firstly, Google forms are optimised for smartphones as well as home computers, which provides increased ease of use for the respondents. Secondly, many of the analytics (such as pie charts and histograms) can be automatically generated by Google forms if required. Thirdly, Google Forms can easily export the data as .xlsx or .csv files that can be easily read by both Microsoft Excel, and SPSS.

Students were sourced for participation from the attendance list from the Summer school itself. They were contacted initially either through the still active WhatsApp group or through email addresses (where still active) from the initial enrolment. After approximately two weeks students were reminded to participate through the same contact means. Two weeks after that a final reminder was issued, but this time as individual messages with students who were still in the WhatsApp group.

Approximately 35 students attended the summer school, the majority of which were from Germany, the Netherlands or Switzerland. They were undergraduates along with three postgraduate students in Real Estate, Facilities Management and similar disciplines. A pilot test of the survey was conducted with three students in June 2020, with only one minor alteration to the wording of one question required before the survey proper was implemented. 10 students responded to the survey. Due to the minimal amount of changes required to the pilot test, the pilot test respondents are also included in the analysis creating a total of 13 respondents resulting in a 37.14% response rate.

The analysis was conducted primarily through SPSS for the quantitative elements, with provisional coding for the qualitative aspects.

3.2. Interview

The interview guide included 3 different sections including questions on:

1. Before summer school and expectations
2. During the summer school and the productivity
3. After summer school reflections and achievements

In terms of analysis, this was primarily done through NVivo. As well as NVivo being a standard software for this type of analysis, the use of this software also allowed for easy recall of the data from the interview transcripts. The codes for analysis were taken from the elemental structures from the research questions, and consisted of- *International Experience, Pedagogy, Summer school Past Experiences, Role and Responsibilities, Mentorship, Teaching, Cases, Impact on Courses, Student Presentations, Social, Learning Something, New Study/ Working Life, Lectures, Field Work, Motivations, Positive Experiences, Challenging Experiences, Possibilities for Improvement.*

4. Findings from the study

4.1. Expectations from students

The weeks of the summer school embedded core concepts of Urban FM which the students were expected to work within the teams they were in. Such concepts were reflected in how their work should be valued and recognized, and communicated with the project stakeholders, the citizens and the university. They should reflect on the difference between a space and a place. The legal authorities are deciding what a space is or should be but a place is seen at eye level and experienced on a personal or community level. There is a difference between what you can measure (square meters, geographical location, market value) and what you cannot measure (sense of belonging, feelings, social value. They needed to compete to be the most innovative, visionary, playful that they possibly could.

The primary learning objectives of the summer school were to:

- understand environmental /economic/ social aspects in urban environment
- set demands for different stakeholder groups (emphasize is on citizen/community)
- identify needs which leads to sustainable communities
- measure interest-importance-impact
- set up additional responsibilities for Urban FM which differ from ordinary FM

The students were asked to think broadly and not only operate from a birds-eye view perspective but to consider at the city and urban level. They needed to open their minds as professionals and start involving people in their process as early as possible. Instead of working behind their desk and eventually parachute some revolutionary solution from top-down.

They needed to find new and playful ways to involve and interact with people. Adapting to a different scale than the one they were used to operate was crucial, both on the spatial aspect: from the building scale to the urban scale and the social aspect, and from working with stakeholders to making/being the bridge between stakeholder and users. Interacting with people will not be easy but they have to be creative and find new approaches. This challenge should be seen as an opportunity to do things differently and not as a barrier.

4.2. Examples of Case Study Outcomes

Students were divided into 3 groups and each group were allocated a location in Trondheim to work in – Sluppen, Brattøria and Karolinerveien.

Sluppen

The Sluppen group – upon completing their orientation and a site visit with one of the educators – considered the challenges of turning this business district into a socially attractive area to be of the most important for their study. They went on to turn this into the following research questions:

1. What is Sluppen going to look like in the future?
2. What are the already existing plans for the area?
3. What are our plans for the area?

To answer these questions, they viewed local residence and people who worked in the area to be the primary stakeholders for the study. They used Google Forms to develop a survey to gauge the needs of these stakeholders, and how these can be better capitalised to meet improve the social attractiveness of the area.

Their research approach was supported by a conceptual model they developed themselves to combine their theoretical knowledge from the induction, and the applied data they aimed to procure from the case study.

Along with the survey, they also interviewed a business manager from the property company Kjelsberg (the site owner) and conducted desk-based research.

Their outcome suggested that the community feeling in the area was minimal, hospitality services equally as lacking along with few cultural activities. Kjelsberg noted that they are attempting their efforts to improve these aspects, such as breakfast seminars, a business soccer tournament and a cultural festival.

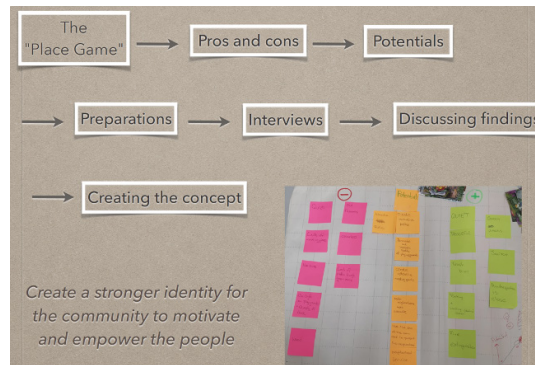
In terms of the students' survey and interview outcomes, they were divided into topics related to 'mobility and infrastructure', 'renewable energy' and 'leisure and community' in terms of improvements. These improvements in the first category involved a reduction in the use of cars, better pedestrian infrastructure, and more bus stops. Renewable energy was the focus of one of the more substantial overall recommendations, with the group recommending using the river for hydropower, solar panels

on the estate and the use of wind turbines if possible. In terms of leisure and community, children playgrounds, restaurants and more inclusive facilities came out of the research. The students produced a diagram that outlined this final category more boldly.

In concluding the results at Sluppen, the groups recommend a vast and dynamic reimagining of the business area into something more synonymous to an entertainment and retail community – all within the considerations of the project by Kjelsberg as it currently stands.

Karolinerveien

The student group using Karolinerveien as a case study operated under the logic that creating a stronger identity and empowering people is the project focus.



Methodological Approach – Karolineveien

In terms of a methodological approach, they chose to create a workshop that incorporated a ‘Playbook’ to help residence organise their thoughts in a manner that could be best to provide constructive solutions through play.



Figure 2. - Residents Playbook – Karolineveiein Figure 3. - Workshop Advertisement Karolineveiein

5. Analysis

5.1. Before the Summer school

The summer school featured a spread of educators (three from the host institution and two from the institutions from students’ home institutions) all of whom had differing experiences concerning both their past experiences with Summer schools and their motivations for attending.

In terms of preparation of teaching materials and the programme, which was carried out almost exclusively by NTNU. The interviews yielded that the overall topic was decided more informally at an international level at a EuroFM meeting, however the more specific details, programme and cases were developed at NTNU. One of the Dutch educators stated that they did offer to become more involved in the preparation of the Summer school, however by that point much of the preparatory work had already been completed.

5.2. During the Summer school

The interviews also touched on the final student presentations. Whilst broadly considered a positive aspect of the summer school, it was the aspect of the interview that presented the most criticism. In terms of positive aspects, the educators were impressed by the technical elements and level of detail. With the presentations containing aspects such as computer-generated models and videos, they were impressed by what could be achieved in just one week. In terms of critical aspects, the lack of guidance meant that whilst in some groups, all of the students presented, in other cases, only one or a couple of students partook in the final presentation. One of the educators also said that the asymmetry of the type of presentations held might be a symptom of an overall lack of guidelines as to what was to be expected of the students.

5.3. After the Summer school

There were also some minor concerns over the time it took to prepare for the Summer school. In Norway, there was little to no activity in the University in July and early August, which heavily reduced the preparation time for teaching materials, recruitment and case study preparation. Although this did not have a detrimental impact on the Summer school during its commencement, the lack of activity at the University did create a time challenge.

6. Discussion

In this second the finding of the interviews and survey for each stakeholder will be presented within the context of three headlines corresponding to each of the research questions intended for answering in this paper.

6.1. Impact of the Summer School on Educational Programmes

In terms of the Summer School in Trondheim, the impact on educational programs was varied in scope. As noted in earlier sections of this paper, many of the educators (in particular those that were not from the host institution) felt that learning more about these new fields of Urban and Community FM made the educators more confident in teaching these subjects in their home institution. In the case of one of the Norwegian educators, the work of this summer school had a direct impact on the development of their own Urban FM specific course within a Civil Engineering Master programme. One of the educators was not teaching on an Urban FM relevant programme, however, after the completion of the Summer School intended to encourage other academics in their host institution to consider including it into their educational programme. One of the Norwegian educators also stated that the experience was so positive that should this be logistically feasible, they intend to try to include more short terms workshops as part of their formal study programme. It was also noted by more than one educator that the quality of the presentation material (despite the asymmetry of the participation of students during the presentation itself) inspired them to encourage similar impressive efforts from their students during semester-long engagements.

Educators were also keen to note that some of the gains were not specific to this Summer School but similar events more generally. The two Dutch educators stated that they regularly attend summer schools and similar events and find that learning from other educators and networking is a key selling point for them to attend in person. This, in turn, impacts the educational programs through collaboration, sharing the results from the event and even learning new educational techniques from other educators. Whilst the student survey didn't represent this, the educators have stated that the experience of students doing a case study in a different country has inspired students to work on Master

theses by not just offering them new insights into other countries way of working, but in many respects can offer potential to use these international cases as a part of their Master theses empirical work. A continued effort to encourage students to attend Summer Schools and other international events also strengthen the 'global citizenship' efforts of institutions to afford further internationalisation elements which strengthen the quality and credibility of the Master programmes.

6.2. *How Successful was the Summer school in achieving its aims?*

Earlier in this paper in the theoretical framework, Wayland *et al* (2000) note that success in Summer schools can be linked to five common success factors. Based on educator and student interviews along with the survey, these five success factors will be used to evaluate the success of the Summer school.

Wayland *et al's* first factor are '*presenting student purposes to enrol in the summer school*'. In the Summer school in Trondheim, this 'purpose' was developed on several levels. Firstly, the specific criteria for student enrolment. As mentioned earlier in this paper, Students had to be from EuroFM affiliated institutions and studying degrees in FM, Real Estate, Engineering or another relevant discipline. As the plans moved forward, however, this was slightly loosened allowing for the likes of the PhD students specialising in ICT to attend. This latter classification of student demonstrated the importance of good enrolment criteria as despite offering useful skills to the student teams, they at times felt like 'outsiders' within this group. Being specific on a relevant degree qualification also reinforced this purpose, it meant that the students could begin their casework having only a minimal level of foundation education earlier in the week. Considering this first factor concerning this summer school, it was successful.

The second factor from Wayland *et al* was '*determining if the expectations are different than a regular session*'. This factor is also addressed in the Trondheim Summer school on several levels. Firstly, the deliverables were bespoke for a short term workshop. The key deliverables came in the form of a pre-assignment essay and a student presentation at the end of the week. These deliverables were very much designed from the perspective of what could be achieved not just in a week (and the time leading up to it), but also the expectation of students unknown to the educators from a variety of institutions. As noted in the educator interviews, this resulted in exceeding the expectations of students present as the final presentations were for the most part above and beyond what was considered possible within just a few days of work. The expectations of the students also reflected circumstances different from a regular session. As shown in the student survey and interview, the student looked forward to experiencing a different culture, improving their English and experiencing a foreign institution, aspects not possible in a semester-long course in their home Universities.

Wayland *et al's* third factor is '*determining if expectations of the summer are different from reality*'. If this can be given to mean that that the summer school can be seen to meet the expectations hope for by all involved, then this can be considered broadly successful. The educators stated that owing to their experiences in earlier Summer schools, their prior expectations were high. Upon the Summer school's completion, all of the educators claimed that the experiences exceeded their expectation and were keen to hold another such Summer school when circumstances allowed. From the perspective of the student experience, most of the students (with just one exception) felt that the Summer school either met or exceeded their expectations. As also noted earlier, the student interview yielded that the student had no real expectation of the Summer school except for it being a week-long workshop in Norway. In terms of reflecting on the experience, it met and exceeded the expectations that they did have.

The fourth success factor offered by Wayland *et al* is '*determining if differences are based on the session format*'. In the context of this paper, this can be considered to mean that the success of the Summer school was dependent on its inherent format. This Summer school was divided into foundation lectures, fieldwork and final presentations based upon their findings. Whilst this is inherently a difficult aspect to prove objectively, if taken into account the results then it can be considered successful. All of the students delivered their presentations as scheduled developed their research frameworks and carried out independent fieldwork. They also showed a knowledge of the subject matter (particularly community

and urban FM) that was based on the work conducted in their pre-assignment and the workshops conducted earlier in the week. When considering the possibilities of delivering similar presentations in a longer semester, the fact that students delivered to a high standard and even presents films and CG model is representative of the fact that although the format warranted an intensive level of work limited in terms of the scope possibilities of time, this was no detrimental to the quality of the work delivered at the end of the week.

The fifth and final of Wayland *et al's* success factors is '*providing strategies or educational decision-making regarding summer schools*'. This can be considered in the context of the Summer school in Trondheim to have components before, during and after the Summer school and need consideration. The preparation for the summer school was conducted in a very different manner to that of a semester-long course. The EuroFM affiliation strengthened the support network, provided a sizable international component and connected the educators and students. During the Summer school, the student educators were very mixed on whether they significantly changed their styles to accommodate the summer school. This was not detrimental to the Summer school success owing to the positive feedback received, however, it cannot be considered to be a style bespoke for this event. Much of the aspects of this success factor were also mentioned in the previous section, as decisions on the educational program were made specifically for this summer school with the considerations of the time restraints, new students and cultural challenges along with the need to learn a new field all factored in. When considering the educator and student feedback, this can be considered to be successful. In terms of summer school decision making after completion of the summer school, students and educators all reflected on aspects for improvement. Better student guidance for the presentations and fieldwork would have been advantageous, as well as including more Norwegians.

7. Conclusion

In terms of how successful the Summer school was overall, both the students and educators agreed that the event was a success. Some aspects would need to be adjusted in the future such as including more students from the hosting institution and providing more structure to the student presentations, but these were minor criticisms overall.

The results of this project have also provided insight into the increasingly possibilities of summer school events from two very specific perspectives. Firstly, pedagogical. This summer school showed how educators can not just learn from the experience of attendance, but can take knowledge skills and materials to their own institutions and strengthen their educational programs. Secondly, field advancement. Whilst an emerging field can at times feel resource and literature lean, the possibilities of students to impart their knowledge on a blanker canvas provides an essential level of value in field development.

This research in a larger sample could also warrant research on how the challenges could be mitigated and opportunities strengthened. In terms of how this research would have been conducted different, the small and uneven sample size and response rate pose the biggest challenge to the legitimacy of this project. Whilst the results can be considered both useful and interesting, they are also none the less 'indicative' rather than 'definitive'. Whilst the restrictions imposed by the papers format do not allow for the level of case study and theoretical probing this project deserves, the aim is spread this work over several more publications whilst it is also hoped that other educational institutions will move this work forward with their own summer school events.

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