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COMING OF AGE AS DESIGN(ER) FOR SOCIAL SUSTAINABILITY

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ABSTRACT
Based on a reflection on a multi-disciplinary design project in Haiti, this paper aims to discuss how social sustainability, in particular from an emerging economy and developing world perspective, could be integrated in design education. Whereas a holistic view based on user and stakeholder centred context-mapping, problem-solving and interdisciplinary work is advocated by several scholars, few design programmes allow for practical implementation of such an approach. Sustainability education for designers is still often rooted in environmental issues, and do not succeed in making students understand the broader relationships at hand. The reflection suggest that social questions rather than environmental ones can provide an entry point for the student's understanding of sustainability that may be more in relation to holistic thinking, and may benefit the student's growth, both as a person and as a designer per se, as well.

Keywords: Social sustainability, design education, design projects, emerging economies

1 INTRODUCTION

In the 2010 autumn semester a group of two industrial design and four architecture master students from the Norwegian University of Science and Technology (NTNU) travelled to Haiti's capital Port-au-Prince for a 5 month development project, initiated and managed by themselves outside the normal curriculum. The students received guidance from NTNU professors, and course credits equivalent of one semester, and worked with a small Norwegian-Haitian non-governmental organization (NGO) with a 10-year presence in Haiti. They were originally to draw and build new school facilities, but because of complications with local land ownership rights, these plans had to be abandoned. Instead, the project evolved to working with a network of the school children's mothers. The goal was to establish a source of income generation for them, resulting in the building of a bakery and the start-up of this business. Hence the project incorporated a clear social sustainability perspective, and provides a good opportunity to reflect on how design educators can encourage, support and prepare similar projects, addressing aspects of social sustainability. This provides the rationale for this paper, to document and reflect on experiences considered to provide very valuable learning for teachers and students alike that may find them confronted with similar challenges. Additionally, there seems to be a gap between the fields of sustainable development research and the work of practitioners. Little field work is published and lacks thus impact on further academic discourse, while practitioners have critiqued the lack of tangible change and unwillingness to learn from real-world cases.
Preceded by a general introduction on social sustainability (§2) and academic educational aspects thereof (§3), the paper continues with briefly describing the project (§4), followed by a reflection and conclusions. The views presented in the article are predominantly informed by the students' own reflections, and by literature review of similar undertakings and current education for sustainable development practices.

2 SUSTAINABLE DEVELOPMENT AND SOCIAL SUSTAINABILITY

The concept of sustainable development was introduced in 1980 and defined as "A socio-economical development which meets the needs of a current generation without compromising the ability of future generations to meet their needs [1]. Following the report *Our Common Future,* by the Brundtland Commission (1987) and the 1992 UN Earth Summit, the concept became important for governments, organizations, communities, companies and society as a whole. The expression "triple bottom line" has

since become an internationally adopted term to describe sustainability of projects and ventures equally encompassing environmental, social and economic concerns. However the social aspect of sustainability, being difficult to define and quantify and even more difficult to implement, has until recently not received equal attention in comparison to economic and environmental aspects. In design, although many designers work in the social context, little theory has been developed around this emerging model [2]. Recently, the movement behind social sustainable design has gained momentum [3], although the subject is known under many names; Design for development, design for the other 90%, design for the rest, design for the bottom (or base) of the pyramid, and humanitarian- third world-, sustainable, or socially responsible design. The terminology may be incoherent, but generally describes sustainability within countries with poor industrial capacities, often related to post disaster relief and poverty. In this article we will use the term "social sustainability" by the definition provided by McMahon and Bhamra [4]: "sustainability beyond the social, economic and environmental perspective, implementing ethics, values, active citizenship, cultural diversity, holistic perspectives and personal as well as social responsibility".

3 EDUCATION FOR SUSTAINABLE DEVELOPMENT

In the past ten years or so, efforts to integrate aspects of sustainability in education in general have considerably argued for and consequently increased [1, 5]. One underlying trend in how to achieve this has been the shift from what has been seen as a fragmented knowledge base to integrative systems thinking, emphasizing inter- and multi-disciplinary approaches [6, 7]. Integrating sustainability in educational programmes has been described as equipping students for "sustainability transitions", requiring a major shift of perception away from the existing paradigm of consumerism. This has also increasingly led to the perception that a transformation of the education itself may be needed as well [1, 6].

Various research has been done on how to integrate sustainability into higher education, many of whom propose a three-faceted model of sustainability where environmental, economic and social aspects (alternatively: people, planet profit) are seen as interlinked and vital to a holistic understanding [6, 7]. Today there is a widespread consensus that sustainability should be an integral part of design education, that there should not be a choice between becoming a 'product designer' or a 'sustainable product designer' [5]. Yet it may appear that many design educators are yet to embrace this multi-dimensional nature of sustainability, but efforts have been made to apply imperatives of socially sustainable design in education. One prominent example is the Global studio [8], an international multi-disciplinary course offering students an opportunity to work on community based construction projects. MIT's D-lab offers a similar programme in the field of design, which brings together students of diverse technical backgrounds to collaborate on design projects.

3.1 Equipping students for working with social sustainability in a development context

Working with design for development often presents "wicked problems" [4]: scenarios where it is not likely that one will arrive at elegant or brilliant solutions that satisfy every stakeholder, no matter the effort invested. Working towards the real-world implementation of a given projects means tackling multi-faceted problems where working within the constraints defined by regulations, permissions, availability of materials, quality of workmanship, rate of adoption, personality clashes and/or corruption can often present very real obstacles that tend to be conveniently overlooked in a classroom setting [9]. These complications can in themselves provide an invaluable learning experience, but also cause frustrations. Designers (as well as other practitioners) can easily become overwhelmed by the novelty of the situation as "difference in culture, language and lifestyle can be so extreme that they distract the team" [10].

Classroom teaching as well as design manuals [10-12] and design reporting avoids discussing or taking into account how the skills required in a design for development context often exceed the skill set provided in traditional design education [3, 5, 13]. The practitioner does not only need to understand the economic and social structures from the context of the user, but also within his/her present domain, the NGO, or charitable organizations, as project initiator, as male/female presence in a foreign country, et cetera.

Lindley [5] found that graduate students undertaking individually selected projects to develop solutions to real problems in a sustainable way, discovered new roles for the designer both within and outside the traditional remit of design, whilst in a Costa Rican project by NTNU students the designers' role seemed to

become removed from the field of design altogether [14]. Even if these projects differ in nature, they both point to traditional design approaches being inadequate to address the broad context of sustainability and its multidimensional aspects. However, moving beyond the remits of traditional design leaves unanswered questions of how and what knowledge and skills might be useful in addition to traditional design skills; these skills might be so context specific that they cannot be translated from one country to another [14].
Ashford [7] describes the imperative for a re-structuring of engineering education towards sustainable practice. On one hand because many of today's unsustainable practices are rooted in technology and engineering and on the other hand because engineers are generally known as problem solvers, able to use a palette of tools that may lead to change for the better. We would argue that the same holds true for designers. However, practical experiences from courses have shown students to struggle when confronted with the multifaceted and interrelated natures of sustainability problems. "Engineering students are known to take to such experiences badly, often showing 'lock-in behaviour' and insisting that their role as problem solvers is limited to the technological, and not the societal level" [15]. Bakker [9] argues that design thinking equips students with the ability to better deal with these cases, often characterised by vague definitions, uncertainties, multiple solutions and different levels of abstraction.

4 THE HAITIAN PROJECT

4.1 General description

In preparation of the Haiti project, the students spent about a half year on activities such as initiating contact with the collaborating NGO, writing applications for grants, deciding on the project brief and aligning this with university and course requirements, internal structuring of the group and preparatory research (in this case on earthquake construction and disaster recovery planning). The project phase itself can roughly be summarized as one month of acclimatisation and immersion, followed by two months of action research and design proposals, ending in two months of construction. The phases were overlapping, with the work of the design students and architecture students moving increasingly closer to each profession's core domain. Members of a women's network participated actively both in the research and day-to-day construction, as well as in planning stages of the bakery business. Following the principles of participatory design, knowledge transfer and appropriate technologies, focus was on transferring an understanding of the planning, investments and entrepreneurship required to start the bakery, as well as an understanding of safe construction principles. The construction tasks were gradually taken over by participants and formal responsibility of the construction was taken over by a local engineer after the students' departure.

4.2 Main every-day experiences

In terms of main experiences, the project can be characterised reflecting on a number of issues. An important aspect that the students needed to learn to deal with was conflict resolution. The sheer number of stakeholders meant exposure to more opinions than students commonly tackle in project work. Opinions were often contradicting and conductive to disagreements, coming from widely different cultures and schools of thought with different priorities. This proved challenging to work progress, sometimes setting it back days or weeks. Consequently the students were forced to improve their conflict resolving skills and communication of decisions and intentions, find workable compromises, and learn which stakeholders to listen to and when to stand their ground. In a way, this also contributed to a process where the students had to redefine their profession, sometimes in a rather confronting way. Lack of local understanding of design, unfamiliar working conditions and an open-natured task forced the reconsideration of the merits of one's personal involvement and contribution. Most of the participants walked away with broader definitions of the profession's limits. What appeared to them to be dysfunctional systems gradually turned out to be systems with their own logic, order and reason. But also in terms of the students' own project management a progression was experienced. The work started rather loosely organized, both in terms of project planning and deadlines, without clearly defined individual roles. This resulted in less exchange internally in the group, less structured work, less confidence in decisions made and more backtracking. The lack of progress forced the group to re-evaluate these roles and adopt a more structured timeline with smaller and more

clearly defined tasks. The students found themselves in a variety of different roles, mostly outside the usual remits of their studies: as organizers of workshops, as employers at the construction site, as colleagues to employees of their partner organization. This exposed the students to a wider range of concerns and constraints than typically encountered in a school setting. Inspiration from the aforementioned design guides was used, but these proved to be limited tools, though helpful in providing starting points. The scope and necessary skills to complete the project were outside the students' capacity, which invited for co-dependence on others both in terms of practical execution and theoretical expertise. Though not always explicitly clear during the stay, the students were continuously confronted with issues that fit well within broader discussions of sustainability; social impacts were immediately obvious whilst collaborating with local women community. The students were initially confounded by the lack of infrastructure, local capacities, availabilities of goods and services and abundance of manual labour, negating much of their prior knowledge of product development and business models, which in turn brought up other underlying questions.

Also the cultural differences between Norway and Haiti and social differences within the local community made the students having to re-evaluate and redefine their own role in the social context and the motivations and the inner works of the community. For example there was a continuous problem getting the women to voice their concerns directly, where they rather say what the students wanted to hear, since they were considered doing so much for them already. Also, the pace of life in the Haitian culture made that the students had to adjust their internal clocks and adjust their expectations. Especially long-term perspectives were vastly different, influenced by long lasting instabilities and lack of trust in authorities. This also translated to less confident short-term planning when daily outcomes were decided by availability of cars, materials, and presence and motivation of participants.

Many of these learning outcomes were of a general nature, rather than tied to the specifics of project and context. This agrees well with commonly used goals for sustainable design courses [4]. It suggests that the lessons should translate well to other settings, and equip the participant with skills that are attractive regardless of context. These sentiments are mirrored by prominent design firm IDEO who have found that "as we engage our fundamental design practices in the developing world, we reinvigorate our approach to any design challenge" [10].

4.3 External project supervision

The students had regular guidance sessions with their academic counsellors in Norway, who, despite previous experiences in similar projects, had no opportunity to grasp all the complexities of the particular situation, and little basis to advise which factors should be taken into account or discarded. The students worked therefore largely independently. These disparate views on aspects of the project was a source of some frustration as the students struggled to describe the issues at hand in full, and in return felt like the feedback and guidance they received often "missed the mark". Midway through the project work, the counsellors visited the students, spending 2 weeks seeing the project first-hand and participating in the work. This improved mutual understanding, and raised the quality of guidance both during the stay and afterwards. This suggests the value of having counsellors in a more permanent participatory role. The counsellors also represented distinctly different pedagogies, each emphasizing different aspects of the project. On one end of the spectrum, the students were advised through a broad systems view of the issues, where the counsellor did not take an active interest in the practical details of the work. Rather than being pushed in a particular direction, they were encouraged to do their best; and "if things don't work, you can always write about why when you get home", favouring a more academic interest in reflecting on experiences rather than straightforward guidance to make the project itself a success. On the other end of the spectrum, the students were also being actively challenged to push themselves, to be ambitious and strive for innovations through their work. Although there is no basis to quantify impacts of different pedagogies (though both will probably have had their merits), the students felt that the most direct and challenging critiques often went against opinions of other participants and stakeholders, and thus forced re-examining problems, slowing the pace of the work. The students, who already felt pressured by the situation, often saw this guidance as complicating things rather than helping them.

5 RELATION TO DESIGN EDUCATION

First of all, design projects done in an educational setting, tackling issues of social sustainability, are likely to pit the participants in unknown and possibly adverse situations, including Spartan living conditions, lack of privacy, disagreements, and communication difficulties, the sum of which are taxing both physically and mentally – demanding much of the student in terms of maturity. The novel nature of the work will also mean that a lot of accepted knowledge is challenged; requiring of the student a level of mastery of "design skills" so that he or she is able to manipulate this knowledge and apply it to radically new situations [5]. These requirements of maturity and adaptability strongly suggest that design institutions only offer such project courses at a later stage of the education, possibly as a post-graduate alternative.

5.1 Academic emphasis

Whereas economic and environmental aspects of design are somewhat quantifiable, social sustainability deals with "softer and immeasurable elements of human and societal behaviour" [4]. Therefore it is challenging to equip students with specific knowledge beforehand that can act as a yardstick for measuring project progress; instead this must come from an understanding of problems at hand, built up over time through immersion. A result different from what was originally imagined must not be seen as failure, such as realizations that physical products might be an inappropriate response to a problem. Instead, one should encourage students looking at the remits of the design profession in light of the context in which it occurs (Lindley 2010). Compared with regular student projects, socially sustainable design might have an open brief, but constraints that are all the more real. This also means that the designer's involvement in such projects might mean embracing constraints from an earlier point in the process so as to stay within the limits of feasibility and relevance, while resisting the urge to design self-contained "ready" solutions. In some cases one might find that the transfer of 'design thinking' itself is more valuable than the technology.

5.2 Partners and local anchoring

Educational programmes focusing on community projects and developmental work will often be entering a landscape shaped by NGOs, CBOs (Community Based Organizations) and local and national governments [8]. They can serve as intermediaries between outside institutions and the community, providing a point of contact. These organisations will often have the local anchoring, understanding of the context, communication channels and authority that newcomers lack, as well as a presence that lasting beyond the scope of an academic course. This can accelerate and facilitate the process of acclimatization, and the understanding of local legislation, bureaucracies, technologies and know-how are vital to further progress.

5.3 The role of the designer

The role of the designer will often come into question, not only where lacking design competences translate to an absent or erroneous idea of the design profession [16], but also because a different skill set is often required [4]. This can lead to considerable leeway in defining one's role in the project, but simultaneously also to confusion if working interdisciplinary with other practitioners of more clearly defined professions.
Few, if any, of the industrial designer's skills as taught in a traditional design education can be applied directly. Some "hard" skills might prove valuable, such as knowledge of materials or manufacturing processes, graphic design or computer proficiencies, but to which extent will vary depending on project and context. To better provide a basis for understanding a development context, broader theoretical knowledge may be necessary; development studies, economics, politics and management may help students provide tools to more efficiently understand and immerse themselves in a new context. In a broader sense, one might argue that the skills taught in design schools are in the most literal sense tailored to a different world than the one found in a development context; still, the user centred and participatory design focus often taught in western design schools provide students with a set of tools to easier relate to local problems, develop empathy and in turn translate existing knowledge to new contexts.

6 CONCLUSIONS

The concepts of sustainable design and their relationship to industrial design have been thoroughly discussed by researchers. However, the challenge still remains to synthesize this knowledge and translate it

to efficient teaching and learning methods. We argue that for students to better grasp a systems view of sustainability, real world cases and practical project work needs to be a pillar of sustainability in education, with the education moving outside the classroom. One such approach might be through student initiated projects and collaborations with private or non-profit partners, such as presented in the case. However, there are currently few successful examples of similar approaches on a larger scale. If similar opportunities are to be offered to a larger body of students, more research and a greater willingness from academic institutions are required to find this educational framework.

While we have primarily argued for the inclusion of socially sustainable design practice in teaching, we do not imply that this ought to be a separate field of work. Sustainability in design education is to be presented holistically, allowing students to reflect on complex underlying relationships. Backed by the students' experiences in Haiti, we suggest that letting social issues provide the entry point to sustainability teaching, rather than environmental ones, may be more accommodating to this holistic thinking. Through commitment to practical problems with real stakeholders, the economic constraints and potential of design become more tangible, and easier to relate to concerns of both social responsibility and environmental impact.

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