Design for Ageing and Happiness:
From ‘Design Things’ to a solution-focused design approach and design intelligence

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Abstract: As a team with a sociologist and a designer-researcher, we employed action research methodology by conducting design labs for different learning situations and researching the social role of designers, Design Schools and the design education system as a whole. In this paper, we intend to reflect on our latest project with young design students who were sent out to the local communities around their design institution to see if participatory design and infrastructuring could provide a new direction for design as a profession. We challenged the notion of design things, which conceptualise the design process as ‘social-material assembly’ but neglect the professional roles of designers. We investigated three areas that enable designers to engage social reality: 1. identifying the public, 2. democratising design process/design intelligence, 3. solution focused design practice. We argued that designers have their designerly ways of practice that constitutes a specific professional force to achieve for social change.

Key words: design practice, infrastructuring, design things, solution focused

1. Introduction

As a team with a sociologist and a designer-researcher, we started our collaboration five years ago and commenced our journey to study the role(s) of designers in design process. Experimenting with new design methodologies, we have conducted design labs for different learning situations. We learned from Participatory Design (PD) about the role of ‘users’ or co-creators as design participants. Users could contribute to design and play a key role in the design process; and thus designers’ roles are reshaped as ‘developers, facilitators, and generators’.

In the PD framework, the design process is generally understood as a problem solving process. Such problem-solving orientation has recently been challenged. Ehn directed designers to take up a new role in the task of infrastructuring public things, and of supporting future appreciation and appropriation of design at use time [1][2]. This view entails that design is discharging its social duty in encouraging the formation and maintenance of sustainable social lives and healthy consumption habits through infrastructuring the future use of the outcomes of any design projects. The coming of this re-interpretation of the nature and mission of design is simulating and insightful. However, there are issues arising from this reconceptualisation of design as a social development agency.

In our view, this would result in the loss of the professional status of designers, and political naivety in respect of its involvement in social development. As far as we researched, advocates of the Participatory Design have not provided any theoretical ideas to make distinctions between activism and designers when both are aiming at effecting social change. Just as the discussion on urban design activism, Markussen (2013) has pointed out the
importance of pointing out the specific ways of designers in bringing forth social change: ‘[T]he techniques used by urban design activists may be similar to those of the avant-garde, but the effects achieved by exploiting them in a designerly way are different’ [3]. Another issue is related to designers’ political judgments. Recent design activism would just take a very rough duality between people and the authority as the conceptual frame to locate designers’ political position. DiSalvo is a case in point, his concept of dissensus [4] is employed to achieve an ongoing opposition and contest against the existing power relations and systems of authority. How could we judge if the existing power and authority are socially bad? Similarly, social engineering for infrastructuring as suggested by Participatory Design would turn out to be a kind of politically naive activism informed by crude conceptual frameworks. Without clear delineation of the values endorsed by designers, design as a profession in modern society would lose its professional identity and missions. We took our study of a group of novice designers to see how design practice would inevitably entail political and social judgments, apart from using their technical know-how.

2. New Positioning of Participatory Design in the Design Process

What is the aim of the practice of design? As Cox (2005) expressed a more pragmatic definition for design: ‘Design is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end…Most of the results of design are visible.’ This lends itself to another simple definition: ‘Design is all around you, everything man-made has been designed, whether consciously or not’ [5]. Thus Mat Hunter, chief design officer of UK Design Council, focused on a more specific question, ‘how can I use good design to make the world around me better?’ [6]. Certainly design has assigned a social mission [6]. Recently Bjogvinsson, Ehn and Hillgren (2012) proposed a new conception of the design process in a way that ‘design is no longer just a tool for the development of functional, innovative consumer products but is increasingly seen as a process for radical change – for developing services, systems, and environments that support more sustainable lifestyles and consumption habits’ [7]. The idea of Design for Social Change is a case in point. Our concern here is how we could take seriously those ideas put forward by the people advocating the idea of taking design as a social action facilitating social development.

The theoretical idea informing these sorts of practice is more likely inclined to see design as a self-evolving process through which a better social environment would be achieved as long as designers are able to accomplish ‘infrastructuring’ [8]. The issue coming to the forefront here is about how designers practice, how they interact with other stakeholders and how they interpret the nature of their practice. Taking the experiences of the Malmo Living Labs as an example, we could find the interaction there between designers and participants ‘under-analysed’ and ‘under-theorised’. The reasons provided by Bjorgvionsson, et al. was that:

‘[T]he shift of focus from project results to creating arenas where different practices can meet has meant foregrounding the practitioners’ authorship. Consequently, this has meant focusing less on the interaction between the designers and the practitioners…The designer researchers’ infrastructuring role became primarily organizing workshops and concrete experiments so that the disparate practices could collaboratively probe into future possibilities’ [9].

This reveals not so much a promising theoretical guideline as the designer researchers’ wishful thinking. It seems that in their view the collaboration of disparate practices would be enough to ensure better possibilities for
social change. But they did raise important issues, such as ‘how we as designers can develop practices that are always already ready for ongoing changes’…”the really demanding challenge is to design where no such consensus seems to be within view, where no social community exists. Such political communities are characterized by heterogeneity and difference with no shared object of design’ [10]. These are valid questions. We should answer the questions as to the nature of design practice in the process of social change, and the ways of building up interactive links between the design process and social communities. We took our Design Labs as an opportunity to understand how designers are involved in effecting social change. We will show that designers (1) play a constitutive role in creating their social reality into which they intervene, (2) are involved in an ongoing negotiation process with participants, stakeholders and the situation throughout the whole design process, the foe-friends relationships between designers and stakeholders are unstable, and (3) always act in a designerly way of practice.

3. The Case: Design tricycles to celebrate Chinese New Year 2013: Ageing & Happiness Project in TKO

While Hong Kong has been named the most livable city by the Economist magazine, its newest town, Tseung Kwan O (TKO) is named as ‘a city without streets’. TKO might not be big enough to be a city but it is home to over 400,000 people. It appears to have everything for living but has been critiqued ‘as planned but not designed’ meaning that all the essentials of a good urban environment are provided but they are usually poorly implemented and thoughtlessly executed. This poorly designed area was the test site of our design lab where the new campus of the design school was re-located from 2010. The focus of this second lab was to continue our research on how designers could contribute to social development in their local area. This second design action was our 2nd collaboration with Brazilian Social Designer, Paula Dib. This project was set up as an extracurricular project where we carried out introduction sessions to recruit participants. This resulted with 25 higher-diploma product design students. Below is Table 1 shows the seven designed sessions during the three-week period:

<table>
<thead>
<tr>
<th>Session</th>
<th>Name of session</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Understanding Happiness</td>
<td>Different exercises to inspire students to use their bodies to experience their environment as well as people’s emotions.</td>
</tr>
<tr>
<td>2</td>
<td>Sharing happy moments</td>
<td>A short video lasting 2 minutes and 24 seconds, which was a collection of over 20 students’ work on people’s happy moments.</td>
</tr>
<tr>
<td>3</td>
<td>Collective mapping</td>
<td>Students came back with their field notes and were asked to share their experiences through story telling. After that, over a thousand post-it notes were created as the ideas wall which was a collective construction of the scenario about TKO.</td>
</tr>
<tr>
<td>4</td>
<td>‘What if’: refining</td>
<td>Four areas were identified that were said to be making local people happy, and these were: cooking, viewing the sea, playing games and spending time with friends. One extra team from the Fashion and Image Design (FID) Department joined the other four teams at the last minute with the theme of ‘upcycling’.</td>
</tr>
<tr>
<td>5</td>
<td>Collective making period</td>
<td>Each group was given a tricycle and was expected to translate their findings and testing onto the tricycles (Table 2 &amp; Figure 1)</td>
</tr>
<tr>
<td>6</td>
<td>Community parade for co-creation design</td>
<td>Five teams travelled around the design institution so as to engage more residents in playing with their designs as new ways to celebrate Chinese New Year</td>
</tr>
<tr>
<td>7</td>
<td>Exhibition: Sharing with communities</td>
<td>Staff members and students of the design institution visited the exhibition because the community event was reported in local newspapers. Visitors to the college also found the tricycles attractive and wondered into the exhibition space, chatting to students.</td>
</tr>
</tbody>
</table>
The following is a brief description (Table 2) of their works (figure 1):

<table>
<thead>
<tr>
<th>Team</th>
<th>Name</th>
<th>Design Things</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Cooking Music</em></td>
<td>Using cooking utensils to form an installation of musical instruments and aimed to invite residents to make ‘sounds’ together</td>
</tr>
<tr>
<td>2</td>
<td><em>Living-Sea</em></td>
<td>Creating the scene of the sea within a ‘house’ on the tricycle and planned to get residents to interact with the house and feel the ‘sea’</td>
</tr>
<tr>
<td>3</td>
<td><em>Playing Bubbles</em></td>
<td>Colour buckets of bubble solutions were travelled with special made moulds for participants to make their own bubbles</td>
</tr>
<tr>
<td>4</td>
<td><em>Keeping Happiness</em></td>
<td>Creating as a giant black object to ‘absorb’ people’s unhappiness and exchange happy things from the bright side</td>
</tr>
<tr>
<td>5</td>
<td><em>Cycling Up-Cycling</em></td>
<td>Operating as a travelling store with accessories made of recycling fabric and given to visitors if they were willing to share their ideas of upcycling</td>
</tr>
</tbody>
</table>

4. How do designers become social?

Once designers proclaim that they are ‘turning social’, aiming at bringing forth social change, what should designers do? What is the meaning of ‘social’ to designers? Where is the ‘social’? To those practicing Participatory Design, designers have found a fundamental obligation to design events, such as Yschumi’s suggestion of ‘event architecture’ by which controversial things are opened up to support multiple, heterogeneous and controversial design-games in use. Manzini and Rizzo (2011) [11] also constructed a new typology of the role of designers as triggers, codesign members and design activists. Designers take up the duty of supporting a platform or infrastructure for negotiations, or even serving as the trigger and design activist of design initiatives. Designers are the designer for design-in-use. It seems that ‘social’ is located at the nature of the designed event. Starting from the practice of Participatory Design, Bjorgvionsson, Ehn and Hillgren (2008) went further to
ascertain the significance of the conceptualisation of design process as a ‘socio-material assembly’, named as *Things* which has already been interpreted as ‘the outcome of the design process’ which ‘is always a thing modifying the space of interaction for its users, ready for unexpected use, rich in aesthetic and cultural values, opening up for new ways of thinking and behaving’ [12]. In their view, design projects could lead to new ways of interacting, but the design process is characterized by uncertainty and ambiguity; and design projects could not be guided by any engineering perspective, which is rationalist in nature. They could not be informed by a top-down perspective, which would finally hinder adaptation to the changing conditions. This specific nature of the design project leads to the necessity of user involvement and participatory design approaches. Sometimes, users are considered more competent than designers in directing the development of a design process. Hence, potential users become co-designers, and the ‘social’ seems to be located at the juncture between designers and participants.

Nevertheless, with a closer look into the experiences by Bjogvinsson *et al.* [13] in the organisation of their Malmo Living Lab, ‘social’ seems to be regarded as an adjective attached to the term of ‘innovation’. Given that the outcome of a design project is innovation, the meaning of *social* in this respect refers to its possibility of changing the ‘lifeworld’ of the users. The design of their workshop is informed by the concept of *Thing*, which is ‘a meaningful potentially controversial assembly, for and with the participants in a project’. The assembly is characterised by design-by-doing and design-by-playing. The hands-on experience provided by our design lab is the basis on which both users and participants could reflect on the nature of their practice and drill into their lifeworlds to explore their ethno-methods employed in practicing design. Through such an exploration, the design object would possibly be appropriated by the future users and thereby change the users’ lifeworld in the direction of being more sustainable. Bjogvinsson *et al.* (2012) argued that the appropriation would extend to the design-in-use phase. The genuine user in this phase would appropriate the object of design into their lifeworlds. What the user did was, on the basis of the traces left by the professional designers in the previous phase, enacting the potentialities inherent in the design object. Because of the existence of such an in-use phase, ‘Participatory Design is seen as a way to meet the challenge of anticipating or envisioning use before actual use, as it takes place in people’s lifeworlds’ [14]. They maintained that there will be a shift in the design approach which occurs ‘when user participation as design-by-doing and design-by-playing became ways to envision use-before-use’. This brings out the issue about the possibility of understanding how actual users will make use of the design outcomes, no matter if the outcome is a kind of concrete product or an idea. To Bjogvinsson *et al.*, ‘work ethnographies and other ways to focus on the users’ understanding became central’. They recommended the use of hands-on design devices in the design process that ‘helped maintain a family resemblance with the users’ everyday practice and that supported creative, skilful participation and performance’ [15]. Participatory Design turns out to be Participatory Design Things ‘that align language-games with heterogeneous matters of concern, and of design objects or devices both as “presenters” for the evolving object of design and as boundary objects for binding these heterogeneous language-games together’ [16].

In the light of this discussion, designers aiming at social innovation should have two basic relations, one is concrete and participatory and the other is imaginary. The first relation is between the designer and the participants (i.e. the potential users or the genuine users of the object to be designed for the future), both are involved in the design process. This relation is also mediated by the object of design. Simply put, the designer, the participants and the object of design constitute the design-before-use assembly. This assembly in turn has a relationship with an imaginary entity, which is composed of the object of design and the genuine users. Both the
designers and the participants involved in the design-before-use should anticipate the possible ways of users’ appropriation of the object of design into their lifeworlds.

In the light of this framework, the social domain in which designers are engaged is the process of infrastructuring on the basis of anticipation. This relocation of the key role of design blurs its specific nature and particularities. In the following section, we pinpoint the three specific orientations of designers and argue that designers have their designerly ways of practice.

5. Which social reality is engaged?

Bjogvinsson et al. (2012) have not been concerned with the recruitment methods to mobilise passionate subjects into the design process. In their experimental program, they went to existing cultural practices and organised activities to enhance their innovation practices. Clearly, they chose to get involved in the constellation of activists with disparate matters of concern. We are not sure about whether this is a good example to show the significance of designers’ involvement in infrastructuring as there was nothing about the criteria for selecting the ‘right’ indigenous practices for infrastructuring in some of the communities of Malmo. Nevertheless, we would argue that participants are not ‘naturally given’ to designers. The first challenge of our social-oriented design process is the formation of the public within which designers recruit potential users and participants. How do designers locate where the ‘public’ is? Whose reality should designers engage?

5.1 Defining public through design

We took the neighbourhoods where the Design Institute is located as the targeted community. We started with a common concern about how the residents there perceive happiness. We assumed that if design has the social mission to make a difference in order to enhance the well-being of people, making them happier is the simple aim of our design process. Student participants were then asked to make a one-second video, which shows happy moments in their lives. It was disappointing to see that more than half of the student participants returned clips from Youtube or some unknown websites but not from their own experiences during fieldtrips or everyday lives. It appears that the genuine moments of happiness of those people living in the targeted community could be replaced by any other person’s behavioral expression of happiness. After that, in the second round of the fieldtrip, they were asked to record down their observations and report to all people involved in the design lab. The results were less disappointing than that from the first fieldtrip, but the findings were too general to give themselves a concrete sense of people’s lifeworlds. The responses were related to the size of the living flats, the heavy household duties of the women, lack of dentists and recreational facilities, and the evaluation of the living environments of the public estates. The students found it difficult to relate these kinds of findings to their search for the moments of happiness.

Going into the third session of ‘collective mapping’, student participants were asked to present their findings through jotting down each point of observation on a piece of ‘post-it’ and then posting it on the window. It finally resulted in almost five hundreds ‘post-its’. This was the collective mapping of the social lives of the TKO people. Students started to figure out their decisions over their interested aspects of the social lives of the
local people and saw that they could do something about it. This tactic is significant to those students as this is a means to the formation of their object of study, a social reality about the TKO district. As a student commented, ‘the design part, I’d say it’s the ideas wall part (figure 2), it is really the most original inspiration of the whole project. Without making the ideas wall, we may just simply “decorating” the tricycle but not adding designated elements in it’ (Field note written by a student). Frankly, this is not a specific way of forming the ‘reality’ for design, as social scientists would use a similar way, like the grounded theory methodology, to portray the reality. Nevertheless, this method of collective mapping provides the first step for students to have an objectified reality in front of them; and, following this step is a specific way of forming a reality for designers.

While the Chinese New Year was approaching, the student participants knew that it was their mission to design something on the tricycles so as to create more moments of happiness for the community. Eventually, they were divided into five groups and designed five different tricycles with their specific themes. There was a parade (figure 3) around the public housing estates in the community three days before the Chinese New Year. The tricycles travelled around the estates and pulled over at some points in order to invite people to participate in their game-like activities. This was certainly at the phase of design-in-use. The design object of tricycles was put into practice. They tried their different recruiting tactics to get the residents involved. Once they had ushered into this phase, a specific relationship among potential users, namely the residents of the TKO district, the design object and the designers was constituted. One of the students reported that their ‘cooking-music’ tricycle became ‘a monster’ to some residents. Their tricycle has been decorated with different types of cooking utensils and supposed to be serving as a music percussion instrument. People were invited to beat the utensils to play a melody, which was supposed to be able to cheer up people. However, many residents closed their windows when they heard the ‘noise’ coming from the tricycle. The students found that some people in the community generally dislike ‘noise’. They avoided their tricycle even if it was painted red in color, the color representing happiness in Chinese New Year. But the really surprising discovery was the participation of some ethnic minorities. The students had no idea about the existence of Asians living in the community. Some student participants even said that it was the first time they had encountered ethnic minorities. Moreover, they found that the children of the ethnic minorities liked their design. Children played with beating the utensils with a lot of joy. The children also liked other designs within the other groups. In comparison, the local Hong Kong children took a ‘wait-and-see’ attitude. ‘They had little motivation to approach us. We have to be ‘hyper’ and get excited to attract the residents. The Chinese children were shy, looking at their mothers for instruction. They hesitated and motionless in front of the tricycle. The children were deeply self-restrained. We could see that the Hong Kong children were expected to go straight on in the direction of success and do no faults. Children should not care.

Figure 3. Parade to engage community
anything other than success. The education system here does not allow the children to commit a fault. One
mothers allowed her child to play, just because she wanted to ask us something about her child’s academic
future.’ (field note, Music Cooking group)

This group has formed a mental picture about the public in the community. There is a group of Hong Kong
Chinese families and a group of ethnic minorities. They are of different cultural orientation in respect of childhood
and appropriate activities for leisure. To the student participants, the Chinese families had less interest in their
game-like design, and even had adherence against children playing games on the streets. The tricycle was not
perceived as a playful design or an appropriate object for leisure. The parents would even take the tricycle as a
‘noisy’ thing alien to the community. The students found that they were not welcome to the Chinese family
community. On the contrary, the ethnic minority families were completely different. Their children welcomed the
tricycle and really enjoyed playing it.

Here comes the crux of the design process. How could designers decide with which group of the public they
are concerned? What is the rationale underpinning their choices? Is the rationale out of political concern or design
principles? Certainly, once designers expect to achieve changing people’s lifeworld and attain social sustainability
through design, the profession of design practice is no longer a discipline concerning only technical know-hows,
but also is involved in political domain.

5.2 Democratic design practice

Ehn et al. (2008) has not given any hints about how designers deal with the potential challenges coming from
competing social and political ideas among designers [17]. Perhaps, it is unnecessary since, in this framework
which is informed by Mouffe’s concept of agonistic democracy, the participants of the Thing would not be
concerned with consensus nor rational conflict resolution; in agonistic democracy the concern is on “a polyphony
of voices and mutually vigorous but tolerant disputes among groups united by passionate engagement” [18] (2010,
48). The key role of designers is to facilitate and support the constitution of agonistic democracy in democratic
innovation. As it has been concluded, “[T]he designer researcher role becomes one of infrastructuring agonistic
public spaces mainly by facilitating the building of arenas consisting of heterogeneous participants, legitimizing
those marginalized, maintaining network constellation, and leaving behind repertoires of how to organize socio-
materially when conducting innovative transformations” [19].

If we put it another way, infrastructuring appears to be equivalent to the ‘conditions of existence’ for a design
project and design processes. Without infrastructure, there is no ‘acceptable’ co-operation between and among
designers and participants. This seems to create a specific role for designers who monopolise the responsibility for
infrastructure building. Here we would witness a covert form of social exclusion in pre-design stage.
Participation is not considered necessary at this stage. As a matter, this result is not surprising as the theoretical
ideas of infrastructuring comes from Mouffe’s concept of agonistic pluralism which, in Mouffe’s framework,
relations of power are permissible as long as it is constitutive of the social. The significance of democracy is therefore
‘not how to eliminate power but how to constitute forms of power more compatible with democratic
values’ [20]. In other words, following this idea about designers’ role, we should allow Participatory Design to
witness social exclusion at a more fundamental level at which participants are possibly excluded. The ensuing
question is: what kinds of participants will be excluded? If we infer from Mouffe’s framework about who would
be excluded from the democratic process, they are those who are not passionate enough for democracy. As Biesta
pointed out, in Mouffe’s framework of agonistic democracy, the ‘democratic subject…is the one who is driven by a desire for democracy or, to be more precise, a desire for engagement with the ongoing experiment of democratic existence’ [21]. In the case of design, should we only recruit those passionate design subjects? Bjorgvionsson et al. have omitted that in Mouffe’s framework, there is a kind of exclusion in running the agonistic democracy. In our case of design, how could we determine who will be the appropriate participants in participatory research? This is the issue we should deal with in our case study.

In our design lab, we could see that the student designers just focused on those Chinese residents who were indifferent to their design. Their ‘unconscious’ knowledge worked in a way that those children of ethnic minority families had already enjoyed their design, and their purpose of attracting more residents seemed to be achieved in this respect. Their concern was about attracting the Chinese families. This moment was critical as the students could have decided to dig deeply into the lifeworlds of the ethnic minority and see if there was the possibility for the children to appropriate their ideas of ‘music-cooking tricycle’ into their daily lives. The student designers could also have determined to see what other social aspects of the children’s lives their designs could change in the direction of a better and more sustainable social life. The student participants turned their attention on the aloofness of the local Chinese people. This could be interpreted as the result of their indifference to the ethnic minority. It could also be interpreted as their concern with the popularity of their own design, and this inclination could be further interpreted as the consequence of the enshrinement of personal success, an ideology identified by the student participants themselves that had been influential on the personal development of Hong Kong people. No matter if the decision was influenced by their indifference to ethnic issues or the local ideology, designers could be affected by their political socialisation. Designers should be conscious of the political implications of their practice. We believe that agonistic democracy is not sufficient for ideal design methods and a political judgment-based practice of design should be highlighted.

5.3 Changing role(s) of designers - understand and change the social reality through the object of design

We have argued that designers would create a reality in which designers are engaged politically. But these presuppositions about design practice do not make clear its distinctiveness from other professional practice, say, social workers, urban planners, psychotherapists, etc. Designers must understand that they have a particular designedly way of practice.

Regarding our answer to the question of how to involve people’s participation either involve or participate – they’re the same in design, we have pinpointed the necessity of using solution-focused and abductive logic. The emergent nature of design practice is identified by Cross (2006) by referring to the fact that design must deal with ‘wicked problems’ which constitutes one of the major components of design. Because of this, he suggests the use of solution-focused strategies as long as ‘design problems are inherently ill-defined, and trying to define or comprehensively to understand the problem (the scientists’ approach) is quite likely to be fruitless in terms of generating an appropriate solution within a limited timescale’ [22]. Design research and designing, similar to the practice of solution-focused tactics, as informed by the action research method, must be regarded as a process and should be driven by the efforts of researchers and participants in putting forward ‘solutions’, trying them out, tracking their effects, and evaluating them [23]. Underlying solution-focused strategies is abductive logic, in the sense that while ‘…induction shows that something actually is operative… abduction merely suggests that
something may be… It is therefore the logic of conjecture’ [24]. In light of this view, we maintain that design does not follow the ‘positivistic’ procedure according to which we start with any propositional logic or scientific hypotheses then employ scientific methods to identify the ‘real’ nature of the problem, and finally put forward designers’ solutions. On the contrary, we start with a view put forward by Cross, which emphasises that ‘the role of the conjectured solution as a way of gaining understanding of the design problem, and the need, therefore, to generate a variety of solutions precisely as a means of problem-analysis’ [25]. Certainly, the design process in the form of solution-focused ways of knowing could be regarded as a kind of travelling experience towards an unknown domain. To us, it is also a kind of learning experience.

The student designers at first had no ideas about the nature of the neighbourhoods, the personal particulars of the residents, nor the properties of their lifeworlds. Through the collective mapping session, the students just obtained some bits and pieces of information about the local people. Based on limited findings, they figured out some issues with which they were concerned. One student reported the process, which was characterised by unorganized ideas:

‘After the ideas wall, we actually choose the idea of ‘cooking’, that's the core of our design. And then we picked out different elements for consideration, like ‘reading’, ‘making music with friends’, and ‘theme of Chinese New Year’. We considered a few ideas like the kid can cooperate with their parents, which the kid ride the tricycle and regenerate heat in order to provide fire for their parents to cook, but considering the possibility we simply eliminate this design. For "Making Music with friends", I thought about the Youtube clip about a remote control car hitting bottles to play a Mario song, we wanna use that idea to put on our tricycle. And "theme of Chinese new year", we were thinking to decorate the tricycle into Chinese new year style, with a big lucky draw wheels on it, let people pick a draw and simply having fun to get small gift. But considering the properties of two ideas, the "theme of Chinese new year" seems pointless and just simply an installation for Chinese new year, it has less interaction to the audience, so we eventually pick the "making music with friends" idea, combine with "cooking" for our finally decision… The Youtube clip was our original inspiration of how the mechanic works, it's the stick topped with soft cotton. When the stick is hitting the bottle, it makes a note, when bottle is filled with different volume of liquid, it makes different notes, so we were thinking to use this mechanics to make a song on the tricycle. Use the pedals part to replace the RC car hitting bottles to play a Mario song, we wanna use that idea to put on our tricycle. And "theme of Chinese new year", we were thinking to decorate the tricycle into Chinese new year style, with a big lucky draw wheels on it, let people pick a draw and simply having fun to get small gift. But considering the properties of two ideas, the "theme of Chinese new year" seems pointless and just simply an installation for Chinese new year, it has less interaction to the audience, so we eventually pick the "making music with friends" idea, combine with "cooking" for our finally decision… The Youtube clip was our original inspiration of how the mechanic works, it's the stick topped with soft cotton. When the stick is hitting the bottle, it makes a note, when bottle is filled with different volume of liquid, it makes different notes, so we were thinking to use this mechanics to make a song on the tricycle. Use the pedals part to replace the RC car hitting bottles to play a Mario song, we wanna use that idea to put on our tricycle. But eventually we gave up the idea of bottles, not only the tricycle doesn't have enough space to put tons of bottles, this idea won't have enough interaction between the audience and the tricycle itself… Then, we changed our strategies, we remember those times when we were small and we used to hit plates and bowls in restaurant by chopsticks to make some noise. So if we can use this "hitting plate" idea to put on our tricycle, it may be fun for our audience, and more interaction tool! After some brainstorming we actually ran to the market and buy some stainless steel plates, along with some cooking tools like wooden spoon and plastic spoon. We hit the plates and record the tone by smartphone apps, we were thinking different diameter of plates may generate different note of sound, but it turns out not in our expectation, it can't perfectly form a complete song. But we did having fun of trying to hit the plates for the experiment. Eventually we gave up "playing a complete song" idea, because if the audience doesn't know how to play music, it's pointless even if it's a perfectly tuned piano. "Making noise" is the source of fun, so we decided to hang the plates at the back of the tricycle and
let people hit it and make some noise. To support the whole structure, we were thinking to buy some pipes to build a pyramid or cage structure to hold those plates, but eventually we bought some hula loops and a wooden pipe for the main supporting structure, and hold those plates on the hula loops by plastic ropes’ (fieldnote written by a student).

This lengthy field note is interesting in itself as it reveals a lot of discursive practice of the student designers. It appears that they had a clear goal to be achieved and the means to achieve the goal should be something designed by designers. The goal was set by the organiser of the design lab in terms of happiness in the Chinese New Year. So, they are revolving around happiness arising from a number of themes; ‘making music with friends’, good parent-child relationships through children riding on the tricycle and the regeneration of heat in order to provide fire for their parents to cook’, ‘a big lucky draw…and having fun to get a small gift’. Finally, they decided that having ‘enough interaction between the audience and the tricycle itself’ was the first essential component of their design and ‘making noise’ the second component. The design was eventually the ‘cooking-music tricycle’. This design turned out to be the means by which they brought fun to the residents. In the parade, they learned that the tricycle was not attractive enough as people could not play a ‘perfect’ song by beating the cooking utensils, and, as has been mentioned, the cultural character of the Chinese residents was to shy away from playing music in public.

It is not easy to distinguish in which phase the tricycle, the object of design, was in. It seemed that the tricycle was in the design-before-use but in fact could be recognized as in the design-in-use. The people were really playing and making melodies with design elements on the tricycle. The students have carried out two major tasks: firstly, they practiced ‘design’ as a specific method, that is, using ‘solution-focused’ in combination with ‘abductive logic’, to process their object of design. This creates the essential component of designerly ways of knowing and changing the lifeworlds of the social world. Designers are not doing infrastructuring but designing something to interact with the social world. The student participants, as novice designers, form their ‘reality’ in which they engaged in order to attempt their ways of changing it; employ their object of design to explore the possible ‘good’ design to arrive at a better social state of affairs; and formulate their political judgments on the ‘good’ aspect of social world. Generally speaking, design practice involves the ability to learn through doing ‘intelligence’ which Berstein (1967) has given a very insightful description of Dewey’s concept:

‘[Intelligence] consists of keen observation, the ability to discount private practices in favour of a bias objectivity, the ability of envision ideals by which we can satisfactorily resolve situations in which conflicts arise, the ability to formulate relevant hypotheses, and a willingness to revise them in light of new experiences. The intelligent person is sensitive to the practical demands of situations and knows how far to carry out his deliberations. In those situations in which immediate action is demanded, the funded experience of the intelligent person guides his actions’ [26].

The idea of intelligence is important to our understanding of the concept of practice that has become a very important domain on which academic effort has spent a lot of effort. Unlike those scholars who are in the pursuit of truth and universal knowledge, theorists of practice just work on the knowledge, which could inform practitioners to achieve effective practices. Designers certainly are a group of practitioners who aim at using good design ‘to make the world around us better’. The mission of design is not only for infrastructuring but also using intelligence for design to make our world better. Designers should have a better designerly way of using
intelligence. To us, teaching novice designers to have design intelligence and solution-focused ways of designing is essential for engaging in social issues.

5. Conclusion

The idea of infrastructuring that arises from the distinction between the phases of design-before-use and design-in-use is interesting. In Bjogvinsson et al.’s papers, their success has been located in relating design infrastructuring to social innovation through the Malmo Living Lab projects. They also discovered more constellations to develop and more resource-weak grassroots organization that had been involved in design networks. However, this could not give many arguments to show the significance of design as a professional disciple and as a specific form of practice. We worry that this conception of design would miss the key disciplinary and practical components of design. Throughout our design labs, we demonstrated that the identification of missions and potential participants are not ‘given’. Our experimental workshop has revealed that in the process of turning designers into social change agency, designers would ‘spark’ a public into being, formulate a special relation with the potential users of their object of design, constitute their political ethics of design and practice the designerly ways of doing. All these components should be highlighted in the design process and in training novice design practitioners.

6. References


