

PREPARING WESTERN DESIGNERS FOR THE USE OF CONTEXTMAPPING TECHNIQUES IN NON-WESTERN SITUATIONS

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ABSTRACT

The aim of this study is to determine how to prepare design students for the use of contextmapping techniques in non-Western cultures. The skill is especially needed when designing for Base of the Pyramid projects (BoP), the majority of the world's population that earns less than 2\$ purchasing power parity (PPP) per day [1]. Six barriers were found and turned into six general guidelines. The guidelines are operational by linking them to three main aspects of contextmapping: (1) selection of participants, (2) design of topic, materials and sessions and (3) the roles and attitude of facilitators. For each aspect operational instructions are defined for design students preparing their BoP project.

Keywords: Culture, contextmapping techniques, base of the pyramid, design education, methods, tools

1 INTRODUCTION

Among design students there is great enthusiasm to do projects for target groups that are part of the Base of the Pyramid [1]. Most of these students have been trained to use user research methods to elicit needs and dreams of their intended users. However, these techniques are developed initially in Western situations and make use of social interactions, which do not easily fit other cultures [2,3]. Nor is it clear if or how these techniques can work effectively and efficiently in a BoP context. In this study barriers and possibilities mapped out for the application of CMTs in BoP projects by monitoring and reviewing design projects. On the basis of these reviews we come to a set of guidelines to support Western designers preparing their contextmapping sessions in non-Western situations.

2 THREE CONCEPTIONS

2.1 Base of the Pyramid projects

Most products are designed for the top of the world's economic pyramid and not appropriate for most of the people who belong to this BoP population [4]. In cooperation with local or international companies, institutes, NGO's and universities, we are doing 'BoP projects' or 'projects for emerging markets' [5]. Our aim is to design products and product service systems that are affordable, accessible, reliable, sustainable and also *culturally accepted* by our target population. Kandachar [5] proposes an integrated, holistic, multi-disciplinary design approach that stimulates local and international entrepreneurship.

2.2 Contextmapping techniques

Contextmapping techniques are generative research techniques, created to gain insights and rich understanding about the context of use of products by people in their everyday life. The goal of these techniques is to gather tacit and latent knowledge about people's everyday experiences, knowledge that even the people themselves would not come up with immediately. This knowledge is meant to provide inspiring information that will lead to good ideas for the conceptual phase of design and product development. Through a series of sessions with intended users designers gain insights into the knowledge, feelings and dreams of these users. Creative tools or self-documentation techniques help people reflect on their memories, feelings and motivations and create awareness about their experiences [6].

2.3 Cultural framework: D-L-L-D

Culture plays an important role in the acceptance of generative sessions by participants in BoP projects. For the definition (D) of culture we follow Hofstede [7]: ‘The system of shared beliefs, values, customs, behaviours, and artefacts that the members of a society use to cope with their world and with one another, and that are transmitted from generation to generation through learning’. Also the levels (L) of culture that he distinguishes are taken into account; people share different mental programmes in different groups where they want to belong to, grouped by e.g. nation, region, sex, generation, social class and profession. For the characterization of cultures the layers (L) of his onion-model (symbols, rituals, heroes, values) and the cultural dimensions (D) are used.

3 RESEARCH QUESTIONS AND RESEARCH METHOD

The questions cover solutions for design students that guide them in preparing contextmapping sessions in a BoP project.

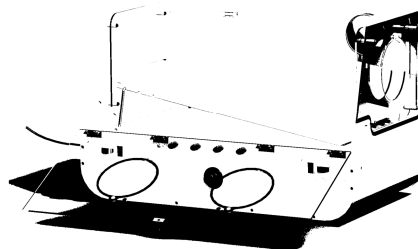
The central questions were:

1. What are barriers that students run into when applying CMTs in BoP projects and how can we understand these barriers from a cultural framework?
2. What possibilities do students come up with to improve the effectiveness of their CM sessions?
3. How can we better equip our students who prepare CMTs for their BoP projects?

Experience with several dozens of BoP projects were reviewed, each executed in about 5 months by 4 or 5 master students. In those projects students fulfil both the role as designer, researcher and facilitator. Five projects were selected, monitored and evaluated (see Figure 1).



1. Mobile academy for Kenyan villagers; accessible education for entrepreneurs living in rural areas.



2. Redesign of a baby incubator for rural hospitals in Kenya; an affordable, reliable and acceptable solution.



3. Female hygiene solutions for South-African women; affordable and acceptable pads for women living in townships

Figure 1. Three of the five monitored and evaluated BoP projects

The project reports, which include both design results and a description of the design process, were evaluated followed by a one-hour semi-structured interview with each design team. The interviews were recorded, transcribed and analysed. Besides, we reflected with twenty design students on findings from literature review and evaluated several dozens of academic and industrial design projects conducted with professional partners. The students had used a variety of contextual research techniques such as diaries, photo elicitation, brainstorm sessions, observations. The students used examples from their own design projects and discussed adjustments for CMTs when applying in other cultures based on their own experiences abroad. Ten of them were international students from outside Europe, which means that they had already experienced substantial cultural shifts when coming to our school.

4 LESSONS LEARNED

The barriers found were analysed, clustered in themes and translated into guidelines. Subsequently the guidelines were brought into connection with three key aspects for the preparation of CMTs; (1) participants, (2) topic, materials and sessions and (3) facilitators, causing a range of practical instructions. Besides tools were reported that students designed to overcome those barriers.

4.1 Barriers and guidelines

A number of barriers were found, analysed and clustered into six themes and translated into a guideline accordingly.

1. Participants did not feel safe to express themselves

In several sessions participants did not feel safe enough to share thoughts. In a Colombian CM session participants being neighbours in a village did not trust each other due to political conflicts. In an ice-breaker session participants were asked to cut pictures from magazines and put them on the forehead of a fellow participant. Each person was asked to guess who she/he was by asking questions alternately. This session turned out to be very political; pictures from cruel leaders were selected, which led to a tensed atmosphere. Also participants did not feel safe enough to express their thoughts when their position in hierarchy was lower than those of other participants. Participants with no or low drawing skills sometimes did not feel comfortable in a drawing session. Uncertainty led to a 'pleasing' attitude of participants, answering questions to please the facilitators without sharing real dreams and thoughts. In some high-context cultures [8] e.g. in China and South-Korea communication was difficult when assignments were too open formulated; leaving so many possibilities for good answers increases the risk to give wrong answers.

Guideline 1: Make sure that participants in CM sessions feel safe; build up **trust** among participants and between facilitators and participants.

2. Participants were not convinced that their contribution was relevant to them or useful.

Open-unstructured sessions were sometimes perceived as not prepared; in turn, participants did not feel respected by the facilitators. The participants did not see the relevance of the sessions and were not motivated to contribute. Usually CM sessions go beyond the main topic in order to avoid narrow views when it comes to the generation of solutions. Participants not always understood the usefulness of filling in workbooks and speak about topics that are not clear linked to their immediate problems to be solved. Men sometimes perceived the supporting material, such as workbooks and images for making collages, as too childish. The credibility of the session was low, which led to unmotivated participants.

Guideline 2: Ensure **credibility** of the sessions; participants should have confidence in the relevance of the interventions.

3. Participants and facilitators had difficulties to communicate with each other due to differences in language.

Facilitators often did not speak the local language and had difficulties with communication, especially with low educated participants. In translation through interpreters information got lost. Visual materials helped, but sometimes could not be understood because; (1) the participants were not familiar with the subject, (2) the visuals were too abstract for them to understand, (3) the context of the visual was missing. Typically in Western contexts, these materials would lead to valuable associative or metaphorical interpretations; here they did not function that way.

Guideline 3: Overcome **communication** problems; learn the local language if possible or otherwise select the appropriate interpreter and design appropriate session materials.

4. The participants' cultural values conflicted with the cultural values addressed by CMTs.

In some cultures specific topics were taboos, especially with strangers and people from the opposite sex. For some cultures, e.g. South Korea, expressing a personal opinion and making mistakes within a group often was valued negatively; the established opinion of a group in general is valued positively, harmony within the group should be protected. For a group session in China a Chinese student expected problems with the expression of personal opinions; the group of participants will prefer to show agreement rather than disagreement to protect the harmony in the group. Also for take home workbook assignments participants were afraid to make mistakes and asked for help from family members, which is a problem if individual information is needed. On the other hand in cultures where individualism is very high, discussion can be unproductive if dominated by one person. Cultures that score high on Uncertainty Avoidance [7] may not like ambiguous and unstructured situations and prefer to be in control, having clear rules and one truth. In some cultures women are supposed to keep quiet when men are present. CM facilitators in Kenya were surprised that women were cosily chatting only after the men had left the session. The designer sometimes used visual features from the other culture that were not appropriate; the connotation was for instance 'childish' and did not seem to be appropriate to communicate to male adults. For one culture words may have different connotations than for other cultures; for a Vietnamese group members in a 'meeting' you are supposed to listen politely, passively waiting for information and not, as expected by the facilitators, supposed to contribute by sharing own ideas.

Guideline 4: Tune with the local **culture** to strengthen the involvement of the local people; check the

local meaning of your topics, material and sessions.

5. CMTs facilitators as well as the participants suffered from biases.

Visual features from the other culture sometimes obsessed designers. They focussed too strong on cultural differences and therefore commonalities were underserved. E.g. in India a Turkish designer was inspired by *rangoli*, a decoration in front of people's houses, but surprisingly to him this was not highly valued by the intended users of his design. They also sometimes missed information due to subjective observations: blind spots. The facilitators often were not aware of their own biases and those of their participants. E.g. the members of a BoP design team that arrived late for an appointment were surprised that Kenyans were emphasizing that the team had promised to visit them within two weeks. They did not expect the Kenyans to be strict about an appointment, as they had heard that African culture is a polychronic culture [8]. The BoP team could not move in the position of the Kenyans and realize that their present would be valued differently and thus provoke another interaction than expected from cultural information.

Guideline 5: Identify your own **biases** and those of your participants; start from commonalities and discuss presumptions.

6. Participants had difficulty understanding materials and sessions due to low education.

In BoP projects intended users that participate in CM sessions often have little education and are often illiterate. Images were often understood very literally (size, details, context). In a workbook they were asked to draw their activities of a day at a time line, starting a day at the left side of the line and ending the day at the right side. This linear way of representing a day was not always understood. In another session participants were asked to draw the people they were closest with. 'Closest' was meant emotionally but was understood literally, choosing their neighbours. Participants sometimes had difficulties and felt uncomfortable with drawing.

Guideline 6: Tune with the **educational level** of your participants; check if topics, materials and sessions can be recognized and understood by your participants.

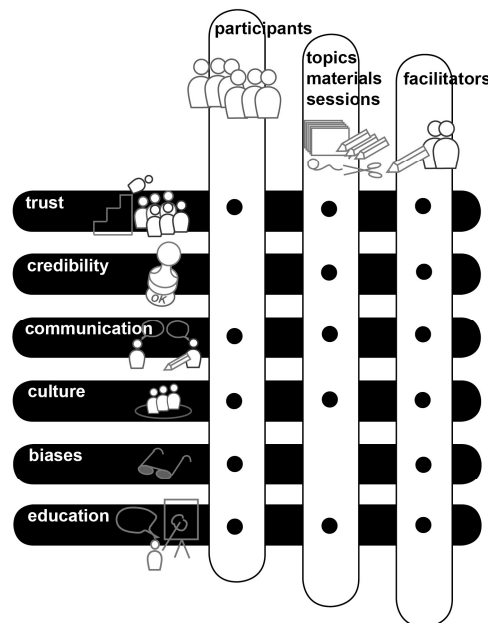


Figure 2. Six guidelines for the preparation of CMTs, clustered according to three key-aspects of CMTs; (1) participants, (2) topic, materials and sessions and (3) facilitators.

4.3 From guidelines to practical instructions

To better equip design students, practical instructions for the preparation of CMTs are derived from these guidelines. These 'do's' are categorized into three key-aspects of CMTs illustrated in figure 2. Because the list is too long for this paper a summary is presented.

1. Participants

These guidelines focus on the *selection* of participants. For the composition of groups culture should be taken into account, using the cultural dimensions [7] as a checklist: if people in the target society are sensitive to **hierarchy** then be aware that you select participants with the same position in

hierarchy; if they judge the **identity** of the group as more important than a personal one then select small groups or pairs; if the **aim** of the group focus more on achievement than on care gender roles may be divided so then select gender homogeneous groups; if participants are used to an absolute **truth** rather than a contextual one then select participants with the same position in hierarchy.

2. Topics, materials and sessions

The *topic* guidelines focus on the *selection* of the appropriate topics. For instance if the topic is a taboo then find indirect ways to talk about it and build up sessions carefully.

The *materials* guidelines focus on *understanding* and *meaning* of visualizations. To address cultural values check for instance the meaning of visualizations; men may perceive cute pictures childish in masculine societies where the **aim** focus on achievement rather than care. Use images that participants know, think of: low degree of abstraction, scales and proportions as in reality, in context, figures and symbols such as ☒☑, < and % that they may not know, meaning of colours, metaphors, archetypes.

The *sessions* guidelines focus on the *structure*, *timing* and *character* of the sessions. Design sessions should be linked in the culture of the participants; if they tend to see **truth** as something absolute participants may have problems with ambiguous situations. Then the sessions should be well structured and without asking too much *why* ('why fires'). If they judge the **identity** of the group as more important than a personal one then incorporate sessions where participants can express themselves indirect, e.g. via play-role sessions such as 'TV-frame', turn-giving-tool [2] and games.

3. Facilitators

The *facilitators* guidelines focus on the *selection*, *skills* and *knowledge* and *attitude* of the facilitators. The facilitators should start to manage their 'PRE' well to gain trust, see figure 3.

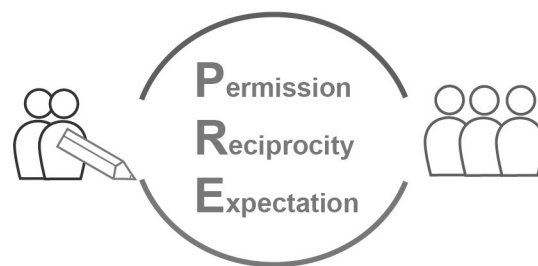


Figure 3. For a good PREparation manage: (1) Permission for organizing contextmapping sessions, (2) Reciprocity between facilitators (left) and the participants (right) and (3) Expectations of the participants about contribution and outcomes.

Permission (P) from for instance local authorities such as a village chief is often needed. Reciprocity (R) between participants and facilitators protects the balance between give and take, which motivates people to contribute. A gift or loan might be appropriate. Expectations (E) about the contribution of facilitators and participants between both parties should be clear in advance to gain trust and credibility. Facilitators should do their homework, learning about the background of participants in advance. The onion model and cultural dimensions of Hofstede [7] can be used as a checklist. If there is a local interpreter then use his/her cultural knowledge.

4.4 Some solutions to improve the effectiveness of CM sessions

From cases we learned new techniques to stimulate personal expression. In this paper three are presented; (1) Sensitizing booklets, (2) Preference booklets and (3) Topical card set.



<p>1. Sensitizing booklets and cards If participants are not familiar with 'homework' then use the booklets together in a session. Be careful with abstract visualizations and symbols and provide complete and precise examples such as timelines since participants may copy them literally. Design instructions that refer to what people know e.g. 'What would be your favourite slogan on your T-shirt'?</p>	<p>2. Preference booklets The booklets facilitate a discussion that provides insights in participant's preferences. The participant compares two visualized options and selects one followed by a discussion. A new option is presented and again one is selected and discussed. This method is a concrete way to stimulate discussion and learn about the participants' frame of reference.</p>	<p>3. Topical card set This card-set can be used (1) to manage topics in a design team and (2) to play with participants to elicit personal experiences. Each participant needs to collect four cards of the same topic. If the participant who asks and receives a specific sub-topic then in return (s)he shares a personal experience about it. The participant is in control about what (s)he wants to share.</p>
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Figure 4. Three techniques that support personal expression in contextmapping sessions.

5 DISCUSSION AND CONCLUSIONS

The aim of this study was to determine how to prepare Western design students for the use of CMTs in non-Western situations such as in BoP projects. Case studies, literature study and own experiences show that most insights are related to six concerns that we turned into six general guidelines and operational instructions for design students. Besides, a theoretical cultural framework has been used. We teach our students this framework, which seems to give sufficient hold on the learner and at the same time is flexible enough to function in the dynamic practice. However, a risk of teaching this cultural framework is that students see the users as stereotypes. Focus on culture may shift the designer's focus to differences, forgetting commonalities. Teachers should keep a careful watch on this stereotyping and help students to understand underlying universal mechanisms that explain human behaviour. In a BoP project the barriers are magnified barriers that we also observe in Western projects. Although in our own culture we have more possibilities to steer away from a problem our results can also be used for the preparation of CM sessions in Western situations. That means that our guidelines are universal applicable and not exclusively reserved for non-Western situations.

This paper is part of a larger research scope that aims to support designers to cope with culture in their design processes. A next paper [9] presents lessons from rural appraisal techniques. A tool for design teams, the Crossing Cultural Chasms card set, is being developed and will be tested in practice.

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