Designers coping with culture in an educational setting

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This paper presents the results of a qualitative study about how design students cope with culture in the i-do (international design opportunity) series of international design workshops in Hong Kong. We wanted to learn three things. (1) To what extent do the design students from different nations share common cultural values? (2) what difficulties do design students encounter in this type of workshops, and what techniques and strategies do they use to cope with (cultural) barriers? and (3) what opportunities (personal benefits) do they identify to attend this type of workshop? The results and conclusions are based on experiences of i-do students (70 in total) derived from questionnaires, semi-structured interviews and literature.

The study shows that students easily recognize barriers that can be explained by differences in cultural values, and that they come up with a variety of solutions. They need extra time to understand each other’s frame of reference and rethink the design approach, rules and norms for cooperation, the frame of reference they use to understand their intended users and the meaning their designs may evoke. They also need extra time for personal learning to adapt to their team members. We conclude that the discussion among students on the manifestation of the design is underexposed and that there are many opportunities for educators to provide them the tools and techniques that support them to cope with culture. Students see international design workshops as an investment in their careers.

Keywords : Culture; Design; Design Education; International Design Opportunity
Introduction

In the light of globalization we expect that in the near future designers will practice their profession in a cultural context that differs greatly from the one they are currently familiar with, or have been trained for. This trend is manifested by a growing number of students going abroad for their master studies. For instance, an increasing number of foreign students choose to follow a Bachelor- or Master program at Dutch institutes for higher education (Ministry of OCW, 2005). Furthermore, among designers there is a growing enthusiasm to do projects for and with intended users that are part of the world’s population at the base of the economical pyramid (Prahalad, 2005; Kandachar, 2008). Most of these intended users are living in a cultural context our designers are not familiar with.

In these international situations our design students encounter difficulties related to a variety of activities. The increasing heterogeneity regarding education and cultural background causes problems in education, such as study delay and poorly functioning international classrooms (Klaassen and van Oyen, 2001). In teamwork ethnical diverse teams have significant detriments on social interaction processes, such as group cohesion, performance expectations and positive attitude within the group (Watson and Kumar, 1992). Design tools and techniques that support designers to understand their intended users not always work well in other cultures (van Rijn, 2005; van Boeijen, 2011). Another difficulty is to define the appropriate designs (products and services) for cultures our designers are not familiar with, demonstrated by for instance the mismatches companies make between their products and the interaction with intended users such as described by Chavan et al. (2009) and studies that demonstrate the effectiveness of cultural adaptation of web design styles to make them more trustworthy and appealing (Snelders et al., 2011).

Some drawbacks fade away after time; Early and Mosakowski (2000) have found that teams that are highly diverse in nationalities, have an equal level of performance as homogeneous teams after some time. And also positive effects from cultural diversity arise; for instance, McLeod and Lobel (1992) have found that ethnically diverse student teams produce a higher quality of ideas at a brainstorming task than homogeneous groups. Furthermore, designers enjoy diversity as a source of inspiration for their designs.

The literature on cultural differences is substantial, and published in different fields. The psychologist Nisbett (2003) discussed differences in thinking styles in Western and Eastern cultures. Anthropologists such as Geertz (1973), Hall and Kluckhohn (1962) studied human behaviour in social settings. Hofstede (1997), Trompenaars (1998), House et al. (2004) developed models to characterize cultures in professional organizations, addressing implications for cooperation. Joy and Kolb (2008) used elements of culture in their theories of learning styles. And researchers such as Miller (1987), du Gay et al. (1997) and de Mooij (2004) focus on the manifestation of culture in our material world. But this variety of sources is as yet scattered, and explicit applications to design practice and design education have not yet been published. Our higher purpose is to learn from these different perspectives and translate them into meaningful ways for designers, developing design tools and techniques that support student designers to cope with culture.

For design education as well as for industry it is important to understand how cultural differences play a role when designing for, in and with other cultures and what the benefits and limitations are in order to be able to steer and improve both the design
process and the outcome. In this study we focus on cultural issues in the cooperation of international student design teams, regarding their teamwork, their understanding of the intended users, and their generation and evaluation of design results. The study is conducted in the i-do (international design opportunity) series of international design workshops in Hong Kong. From these workshops we wanted to learn what barriers the design students encounter, what opportunities they notice and what solutions they come up with to cope with culture.

The i.do workshop: what students do

The (i.do) international summer design workshop is organized and run annually by PolyU School of Design in collaboration with Delft University of Technology faculty of Industrial Design Engineering, and co-sponsored by the Hong Kong Design Institute. Since 2005 each year different institutions are invited worldwide to participate with 4 students plus staff. For 6 weeks, with one exception of 4 weeks in 2005, teams of 4 to 6 students, varying from 20 to 25 years old from different nations and schools, work together on a design assignment. Students have a lot of freedom to steer the process and the outcomes, but intermediate and final deliverables are clearly defined: concept designs of physical products and/or services, captured in 3D prototypes, mock-ups, posters, reports, 3 minutes video clips and visual presentation materials. Each i.do workshop starts with a one-week excursion to Mainland China to gain insights about local production, intended users and the user context. Some examples of assignments are: a public transport device for Kowloon district, design for ‘hospitality’ and design for ‘supporting aging’ in China. Local tutors and tutors from the participating students’ nations support i.do by lecturing and coaching. At the end of each week students are asked to present their intermediate results. Usually the i.do workshops take place in Hong Kong at the PolyU School of Design. In 2008 the last 3 weeks were located at the DUT faculty of Industrial Design Engineering as described by Bracht et al. (2008). Most i.do workshop results are published (i.do, 2005; i.do, 2008; i.do, 2009). The results, presented in this paper are based on a study of 4 out of 7 i.do workshops, see tabel 1.

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Questions and method

With the present study, we wanted to learn three things. (1) To what extent do the design students from different nations share common cultural values? (2) what difficulties do design students encounter in this type of workshops, and what techniques and strategies do they use to cope with (cultural) barriers? and (3) what opportunities (personal benefits) do they identify to attend this type of workshop?

For the definition of culture we follow Hofstede (1997): ‘Culture is 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 of culture 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 of his onion-model (symbols, rituals, heroes and values) and the cultural dimensions are used to explain possible cultural differences between design students. The five cultural dimensions of Hofstede that differentiate cultures are: (1) Power Distance (PDI), which stands for hierarchy within a group (the extend power is divided among group members), (2) Individualism (IDV), which stands for the identity of group members (the importance of individual versus collectivistic behaviour within a group), (3) Masculinity (MAS), which stands for the aim of a group (the extend group members strive for success versus care), (4) Uncertainty Avoidance (UAI), which stands for truth (the extend group members feel comfortable with clear rules versus ambiguous ones) and (5) Long Term Pragmatism (LTP), which stands for an attitude toward time (the extend to which group members prefer a pragmatic future oriented perspective versus a conventional short-term point of view.

Procedure

Table 1 shows an overview of the participating students in this study. One week before the last i.do week the first author presented a one-hour lecture about the concept of culture in order to sensitize the students for the topic. This session was planned late in the workshop to let them first experience and cope with cultural issues freely, without any guidance. The students were asked to fill in the Hofstede dimension questionnaire to define their cultural profiles and to compare the results with the average profiles of their own nation and with the profiles of their fellow students from the other nations. The questionnaire session served as a sensitizing session for the interviews and the outcomes are used to answer the question to what extent the design students from different nations share common cultural values. Studies show, for instance, that team performance is, more than other diversity characteristics, influenced by variances in cultural values (Kirkman and Shapiro, 2005). And also preferences in learning styles are influenced by culture (Joy and Kolb, 209). We want to know if barriers students experience can be explained by these differences in cultural values. In the last week, each group of students from the same school and nation was interviewed, 18 video taped interviews, including 70 students. The one-hour semi-structured interviews are characterized as informal group discussions, guided to address 6 topics. (i) An interview started with a general invitation to talk about experienced ‘expectations’ of the i.do workshop in advance and ‘surprises’ during the workshop. (ii) the students were then asked about the cooperation in their team, and (iii) about the design methods they used. Then they were asked to talk about (iv) the activities they undertook to understand the intended users, and (v) to reflect on the outcomes, the design results. The interviews ended with the students’ opinion about (vi) the final aim and their personal benefits of the i.do workshop. The interviewer (first author) explicitly asked about the students’ experienced barriers, opportunities and solutions. Furthermore, she asked them to illustrate their answers with examples and anecdotes.

Analysis

With the outcomes of the questionnaires cultural profiles were built for each group of students with the same nation. These profiles were compared with the cultural profiles of their own nation (Hofstede, 1997) and with the cultural profiles of their fellow students from the other nations.

All 18 interviews were transcribed, and analysed. This resulted in 364 quotes, interpreted, coded and clustered. The clusters largely coincided with the interview topics, but
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‘expectations’ and ‘surprises’ were rearranged, since they address the other topics. Results from each cluster were analysed and compared to related literature.

Results & Discussion

The questionnaires

The results of the questionnaires are used to answer the question to what extent the design students from different nations share common cultural values. Almost all students filled in the questionnaire, but unfortunately the i.do 2008 students did not hand in the results.

The diagrams in figure 1 and 2 clearly show that the student profiles are much more similar than those of their nation which are average results of a large number of people that share the same nationality (Hofstede 2010). This is expected, because being design students they share a common interest and train similar skills and knowledge, which influence their mind-set. For example on the dimension ‘individualism’ (IDV) they score high, but they are trained and selected to express their personal opinion, taking decisions and to convince others. Nevertheless, the right diagram shows that the cultural values do differ between our students (question 1). Still Western students score a bit higher than Asian students. We do see large differences on ‘power distance’ (PDI). Although lower than the average of their nation Asian students score higher than Western students, meaning that they are more comfortable with hierarchy within their social groups. All students score relatively high on ‘masculinity’ (MAS) and low on ‘long term pragmatism’ (LTP) compared with the score of their nation. This can be explained by the fact that they are relatively young and asked for their opinion in an educational context. The fact that
they are young and inexperienced may influence their sensitivity for rules and short term interests.

The interviews

The 5 main clusters are labelled ‘understanding intended users’, ‘designs’, ‘design process’, ‘teamwork’ and ‘i.do’. Results are presented and discussed per cluster in this chapter and illustrated with a figure.

Understanding intended users

Student designers experience that they have and use different frames of references of the intended users. They interpret information about the intended users different or find it difficult, because they are not sure if their own frame of reference is valid. Solutions students suggest are: (a) First, study similar intended users in home nation in order to be able to compare. (b) Share team member’s frame of reference by sketching, for instance, ‘a day of an intended user’ and discuss the results in the team. Another difficulty mentioned is the selection of intended users. Due to limited time ‘easy to reach participants’ are selected. They are, for instance, high-educated intended users who are not fully representing the people to design for. This lack of appropriate participants they solved by using their own reference, for instance, one foreign student who designed for elder people stated ‘I used information about what I know from my own grandmother’.

Furthermore, students encountered difficulties with the low expression of intended Chinese users during interviews. In order to understand needs and dreams of these intended users the students want them to talk freely. A Hong Kong student explained that unclear reasons behind questions and short assignments such as drawings make the participants feel unsafe. Especially, if other participants can notice mistakes participants hold back, even when it is close family and even when they usually like to do an activity such as drawing. A Hong Kong student found it difficult to convince her Western team members that the participants would not appreciate in depth questioning and that they first should focus on general aspects. According to a Western student some Hong Kong students say that they find it difficult to ask those in depth questions themselves.

Language is another aspect that causes a substantial barrier in communication with the participants. Hong Kong students often served as interpreters but do not always succeed in translating everything. Solutions that students mention to improve interviews are: (a) Study history of intended users first. (b) Start an interview slowly, with warming up activities that are of participants’ interest (some students attended a daily tai chi session of their participant). (c) Show personal pictures to participants to create empathy. (d) Explain goals and activities to the participants. (e) Ask questions with options to choose and use a physical object if possible. (f) Listen well, with open mind. (g) Work with local designers who can translate and explain intended users’ behaviour. (h) Videotape and take pictures in order to have back up information if translation is poor.

The cultural barriers for self-expression and the importance of feeling safe to gain rich and in depth insights from intended users, is also stressed in other research (van Rijn et
al., 2005). From other design projects we know that students need to carefully select and design their research topics, materials and sessions. And that they need to select participants carefully and adjust their attitude as a facilitator, especially when the participants are more familiar with hierarchy (PDI) and collectivism (IDV) than the students are (van Boeijen and Stappers 2010). Before students start an international workshop they could put extra effort in advance by explicitly discuss and record their frame of reference of the intended users or similar people in their home nation and bring that as input for a discussion in their team.

Design

![Diagram](image)

**Figure 3 DESIGN: teamwork leads to global designs (left), educational differences (middle), some quotes (right)**

The non Hong Kong students encounter difficulties to judge the importance of the meaning that specific designs, or interactions with the designs, elicit. For instance, according to a Hong Kong student, in a design project for elder people in Hong Kong, non Hong Kong students find it difficult to understand that serving many dishes to guests communicates and means that they are welcome to pick food. Carrying dishes one by one is valued as ‘good’ instead of creating efficient solutions to carry all bowls at a time. When discussing how universal or cultural specific their designs are students state that the designs mostly have their origin from a local need, such as limited space, but they often think that the result is a more global one, which means that the designs not typically refer to a specific culture. Although, in several projects for colours, patterns and symbols such as a logo the students try to refer to a local culture. Some non Hong Kong students rely on local students, but the local students also mention difficulties to understand the meaning of product properties such as colours, sizes, materials, patterns, materials and textures for the intended users, because intended users such as Chinese elder people are not familiar for them too. Next to differences in cultural backgrounds students also mention difficulties due to differences in design education (see figure 3), such as designing a product from inside out (inner structure) or outside in (outer form), focus on technology or form, searching for short-term/realistic solutions or long-term/futuristic ones, starting from abstract representations or concrete ones and designing solutions that are rather familiar, referring to established archetypes or creating new ones that are based on visionary beliefs.

A possible drawback is that this teamwork where designers’ background is very different leads to compromising and thus average designs, without a culture- and context specific meaning. Equal power in the team leads to equal arguments and because of the limited time that they work together no in depth insights and a common vision can be developed. These differences take time to learn to cope with in the team and therefore, there is little room for new and advanced solutions. On the other hand we know that diversity also stimulates creativity; insights from different cultures or disciplines lead to new combinations (McLeod and Lobel, 1992). The opposites listed in figure 2 can also be seen as complimentary and not as barriers.
Design process

Students mention different ways to reach their final goal, doing different activities at different moments and durations. Some students focus on a very structured process, with well-defined phases and intermediate activities and results and rational argumentation supported by research. Other students expressed the importance of individual freedom, listening to personal intuition and motivation. Some students experienced difficulties with team members who wanted to question every aspect related to their design. They have learned from their team members that by critical questioning one can gain deeper insights. For students who are used to give answers rather than to question everything this questioning causes difficulties. They state that they need time to think by themselves and cannot join the discussion the others want to evoke with the questions, while the others are disappointed that they cannot develop their insights through discussion.

These differences, listed in figure 4, are mainly caused by differences in design education, but partly also caused by cultural differences. Stimulating the development of an individual opinion and questioning is more likely to be educated in nations that score high on the cultural dimension ‘individualism’ and low on ‘power distance’ (Germany, Netherlands, Sweden, USA (Hofstede, 2010) than in nations that score high on ‘collectivism’ (Korea, Hong Kong (Hofstede, 2010). Furthermore, students mention that they use design methods such as brainstorming and mindmapping, not only to generate ideas, to understand intended users and other design related topics, but also to structure and communicate the design process and to stimulate teamwork. The opposites are discussed as difficulties but can also be seen as complementary and as opportunities for learning.

Teamwork

In the interviews students paid a lot of attention to aspects related to teamwork; the quality of the cooperation of the students within their groups. Published findings from i.do 2005 are included (van Boeijen and Badke-Schaub, 2007). The effectiveness and efficiency of teamwork are influenced by difficulties presented in the three other topics ‘understanding the intended user’, ‘design’ and ‘design process’ and therefore there is some overlap. Due to differences in education some students were more trained to work in teams rather then to work individual, or the others were more trained to develop
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Individuality was even manifested in language; a student expressed her irritation about a team member who did not use the word 'we' but 'I' when presenting their results. Several students complain about the low contribution of their teammates, which they think is sometimes caused by personal and educational differences and other times by cultural differences. Especially, Asian students express their need to learn to speak up and give their personal opinion. Western students indeed mention that they have difficulties when team members do not share their thoughts. Other behaviour within the team that students perceive as typical are the dominant and/or competitive attitude of some teammates and teammates that do not share their opinions. Another difference they mention is how team members deal with time. Some students complain about others coming late without announcement, which is according to their value system not polite and very annoying. One student first tried to solve this problem by indirect jokes about the other student's behaviour, but by only explicitly discussing about how to deal with time, setting new team norms, the problem could be solved.

Several students express the need to have informal activities, such as first week excursion to Mainland China and sharing feelings, friends and family to build the team. To stimulate creativity in the team students mentioned the importance to change their working environment to informal ones where they can play and learn about each other's capabilities and interests. For a good teamwork students stress the value of personal training during the i.do workshop such as patient to listen without judgment ('open ears'), to wait till someone speaks, to think fast to be able to react on ideas and to talk slower then they are used to. Furthermore, the importance to have common goals is mentioned; Weekly presentation is crucial to get the team to work. Goals are formed into intermediate criteria. Also they mention the importance to divide and switch roles. For instance, some teams chose a team member to manage the time and to motivate the team, checking difficulties within the design tasks. Furthermore, students mention several techniques they use to improve the effectiveness and efficiency of the teamwork, such as voting techniques to make decisions, splitting up the team for specific tasks, creating competition, brain writing and other creativity techniques to involve each team member in the ideation process.

The characteristics of behaviour, which cause problems between team members, are typically trained and embedded in a specific culture. Differences in the degree of communication are partly caused by a lack of common language and partly by culture. In one culture people learn that it is perceived as 'good' to hold back one's personal opinion and focus on a common one (Asian students) and in another culture people learn that it is perceived as 'good' to have and express one's personal opinion (Western students). For designers sharing ideas and personal opinions seems to be crucial and thus students who are not used to that have a backlog. In order to perform well as a team, the students are confronted with all of Tuckman's stages (1965); forming, storming, norming and performing. The in pre-defined and pre-planned deliverables force the students to go through all stages, even when they may need much more time to clearly set the team's norms.

**i.do - the international design opportunity**

About 15 per cent of the quotes from the interviews are about reasons for participating in the i.do workshop. Main reasons for attending the workshop, students mention, are to learn about other cultures and to learn to work in an international team. Other opportunities they recognize are learning about other nations, different design approaches and education styles, improving English and to prepare for an international career. In different ways students tell that the workshop taught them to understand their
own and someone else’s mind-set and perspective (‘open mind’, ‘other mind-sets’, ‘learn about yourself’). One student said; ‘One of the biggest side effects of the project is that you really have to define who you are and where you are coming from and the way you work, and also you have to be open for other’s input, methods and ways to run the project.’ Several students mention that the topic of the design assignment is of minor importance. It just serves as a vehicle to gain experience in working in an international design team.

**General discussion & conclusion**

In this paper we presented results of a qualitative study of the influence of student designers’ cultural background on their understanding of intended users, the design, the design process and their teamwork, including opportunities to attend this international design workshop.

From the study it is clear that design students, working in an international setting, experience barriers due to cultural differences, intertwined with personal and educational differences. The cultural differences can be explained with their different scores on the cultural dimensions. A happy conclusion is that students take the responsibility to find solutions themselves. They easily recognize cultural barriers when it comes to teamwork. However, they need extra time and effort to understand each other’s frame of reference, to rethink their design approach and rules for cooperation, to understand each other’s frame of reference of intended users and to understand the meaning that their designs evoke in the specific context they are designing for. They also need extra time for personal learning to adjust to their team members. Discussion on the cultural manifestation of the designs is limited, maybe because the students do not confront their final designs with the context, due to limited time, but also because they see the international cooperation as the main opportunity and the design assignment as a vehicle to experience this cooperation (from interviews). Nevertheless, in their design practice the outcome, the design, is the main reason why designers work together.

Thus, there are many opportunities for design educators to support design students to improve their capabilities to cope with culture, for instance by developing acculturation programs, by developing design tools and techniques and to offer cultural theories for reflection. These activities will help designers to understand and overcome cultural barriers more effectively and efficiently.

The open set up of the i.do workshop is useful since it leads to instructive confrontations and offers enough flexibility for students to find the design approach that fits the multicultural values in the team. These confrontations and personal experiences, shared in the interviews, are important steps in the learning process of designing in an international setting. We assume that design tutors should not try to solve the problems students encounter in advance, but carefully support them in their reflection process by offering them theory, solutions and asking relevant questions just after the students’ experiences. Insights from this study can be used to develop feedback sessions or other means to support the learning process. Assignments should be clear formulated and should not be too open, spending too much time on defining the intended users and the main context of use, to give students enough time to experience a variety of design activities, not underexposing the final results: designs that fit the cultural context and that people love to use.

This study is part of a broader research about how designers cope with culture with the aim to develop tools and techniques that support designers to cross cultural chasms.
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