

A reflection on cross-cultural study trips with large groups of industrial design students

Casper Boks

Jóhannes Sigurjónsson

Ida Nilstad Pettersen

*Norwegian University of Science and Technology (NTNU)
Faculty of Engineering Science and Technology
Department of Product Design
Kolbjørn Hejes vei 2b
NO-7491 Trondheim, Norway
casper.boks@ntnu.no*

Abstract

For two successive years now, students from NTNU's Department of Product Design (IPD) embark on month-long study trips to relatively unfamiliar parts of the world. In May 2007, students visited China, and in March 2008, the destinations were Costa Rica and Cuba. An important part of these study trips focuses on visiting fellow institutes for product design education; partners in these cases have been Xi'an University of Architecture and Technology in Central China, and Instituto Tecnológico de Costa Rica in Cartago, Costa Rica. These study trips, partly funded by the students themselves, provide a unique opportunity for relatively large-scale interaction between groups of product design students, on an equal basis. Interaction generally involves week long case studies and design projects, through which all students involved gain experience with working in a different international context, with student colleagues that are used to different working routines and attitudes. This paper aims to share experiences with setting up and carrying out such international design projects, using documentation on processes, presentation and reflection.

Keywords: *cross-cultural exchange, study trips, design education*

1 Introduction

Since a number of years, at the Department of Product Design (IPD) of the Norwegian University of Science and Technology (NTNU), students in the third year of the Industrial Design Engineering curriculum have the opportunity to organise a study trip as part of their sixth semester. The destinations for these trips are increasingly non-European countries. The department believes that such experiences greatly contribute to the development of industrial design students, by interacting and cooperating with foreign students, and by gaining a perspective of what industrial design means in a non-familiar context. After all, designers, as many professions, are increasingly part of a global community, both professionally and socially. Nevertheless, it is considered a good idea to structurally evaluate the perceived benefits of such study trips, as considerable funding and efforts are needed for organising these. In the small amount of scientific literature on cross-cultural exchanges in higher education, limited reflection

can be found, especially for design students, and especially in the context of relatively large groups of students. Hence, this paper reports on the experiences with organising IPD study trips, and aims to evaluate the benefits of this activity, from a departmental as well as a student perspective. The main research question is to evaluate to what extent an intensive month-long study trip, incorporating both educational and social activities, contributes to gaining cross cultural perspectives, particularly in the context of design students.

Section 2 aims to provide some background on the internationalisation of curricula. Section 3 explains about the organisation of the IPD study trips in the context of IPD's study curriculum. Section 4 analyses and discusses the outcomes of a questionnaire, in combination with observations from staff members that joined the study trips. Section 5 summarizes the main conclusions and provides an outlook on future study trips and cooperation with involved non-European universities.

2 Background

Internationalisation of study curricula is a topic that receives an increasing amount of attention. One aspect of internationalisation is offering cross-cultural experiences. Offering this to students is generally considered a worthwhile activity, given the fact that many of them will engage in a professional life in a global world. For industrial designers, this may be even more relevant, as many will end up working for multinational companies selling on a global market. Whereas globalisation as a contemporary issue has been critiqued because of its possibly negative socio-cultural effects on local and regional communities, finding an approach to moderate globalization in regional contexts is considered a major issue in areas such as sociology and management, and design as well. In this context, the concept of glocalisation has been brought forwards as an example of such a moderating approach. The term Glocal design, which is a combination of Global and Local, represents an attempt to find optimal and sustainable design solutions to local and/or regional problems in the era of globalization [1].

Willard-Holt [2] quotes Wilson when classifying the benefits to be realized from cross-cultural experiences, using four categories: *substantive knowledge* of other cultures, world issues and global dynamics; open-minded and empathetic *perceptual understanding* of people of other cultures without stereotypes; *personal growth* in areas such as self-confidence and independence; and the propensity to make *interpersonal connections* with people of other cultures, both in the host country and after returning home.

In the context of higher education, Leask proposes a useful typology of curricula, using definitions of Characteristics of Internationalized Curricula. These include for example curricula leading to double or joint degrees, curricula including explicit international studies, or providing training in international communication skills [3].

Hobson and Rodgers have stressed the importance of exploring cultural differences amongst a group of product design students [4]. Their research shows that, although hard to measure, their cultural roots influence their final design outcomes. It is then only a small step further to assume that exposure to other cultures will influence design students in a way that they are more likely to be able address or even adopt unfamiliar cultural aspects in their design work.

3. IPD Study trips

The Department of Product Design at the Norwegian University of Science and Technology offers both a 2-year and a 5-year curriculum towards a master degree in Integrated Product Design; Table 1 shows the 5 year master curriculum. Within IPD's curriculum (see Table 1), two

elements from Leask's typology are most relevant. First, the curriculum stimulates taking semesters or courses at academic institutes in other countries, and the department is active in student exchange programs. Course credits obtained abroad can be exchanged for IPD course credits. In the fourth year of the curriculum, the majority of the students study abroad in a variety of countries, including Germany, The Netherlands, United Kingdom, Italy and Spain, but also more distant countries like Hong Kong, Chile and Costa Rica. Second, the IPD curriculum contains courses in which the original subject area is broadened to include international perspectives. This is perhaps most prominent in the ecodesign course, where product design is addressed from a broad sustainability perspective, including ethical issues, globalisation, international case studies, and issues such as social justice, equity, human rights, and related social and economic issues.

Table 1. IPD's 5 year master curriculum

Year	Term	Module	Module	Module	Module
5	10	Master Thesis			
	9	Elective Topic	PD9 Specialization / Research		
4	8	Elective Topic	Experts in Team Interdisciplinary Project	Communication & Packaging Design	PD8 Design Strategies
	7	Elective Topic	Elective Topic	PD7 Industrial Assignment	
3	6	Management of Technology	Eco-Design	Applied Modeling (CAD)	PD6 Products and Systems
	5	Statistics	Human Computer Interaction	PD5 Mechatronics	
2	4	Physics	Materials Technology	Man Machine Interaction (Ergonomics)	PD4 Form and Function
	3	Mathematics 3	Mechanics 2	Form and Color 2 Design History	PD3 Form, Material, Production process
1	2	Mathematics 2	Mechanics 1	Form and Color 1	PD 2 Information Technology
	1	Mathematics 1	Ex.Phil.	Form and Color 1	PD 1 Introduction

In the engineering curricula at NTNU, one main excursion or study trip abroad is obligatory. This is normally placed in the 6th semester and organized and financed primarily by the students. Each student receives a fixed sum (1500 NOK) from the faculty administration. Travel expenses for one faculty member are also covered. These excursions normally last for 10-14 days, and the program consists of various activities of professional interest, like visits to companies and exhibitions.

This has also been the case for 3rd year students at IPD. In recent years the focus has been on visiting the design metropolises of the world, including Barcelona, Milan, New York and Amsterdam. From 2006, a change in students' preferences can be observed as trips were organised to more 'exotic' destinations.

In 2006 the students decided to visit Central America and went to Guatemala. The Norwegian programme "Design without borders" and a local university helped with planning the trip, but

this did not go as far as arranging project work. Most of students however felt that this type of study trip was meaningful and gave a new perspective on their design education.

In 2007, 15 students joined on a study trip to China. In 2008, 17 students joined on a study trip to, again, Central America, where this time the destinations were Costa Rica and Cuba. In the subsequent paragraphs, the 2007 and 2008 study trips are further discussed in detail.

2007 China

Research and education activities between NTNU and XUAT were established already in 1989. The Department of Product Design contributes since 2003 to this partnership with the course “Sustainable product and service design”. Until 2006, the cooperation has been mostly one-way, that is Norwegians travelling to China. In 2006 IPD received a project support from Norwegian Research Council under the BILAT (Bilateral cooperation) programme. The main intention of the project was to make the cooperation more balanced. The goal of the project was to establish a network where design professionals from IPD and the Industrial Design Department at Xi’an University of Architecture and Technology (XUAT) cooperate in the fields: design and production, management and cooperate identity, culture and design semantics, aesthetics and form giving.

As part of this project, a four week study trip to China was organised in spring 2007. The educational part of the study trip consisted of two parts. The main part involved a two week collaboration project, taking place in Xi’an from April 23rd to May 4th. The project involved 15 design students from NTNU and 30 students from XUAT. In Xi’an, two IPD professors joined the NTNU students. The assignments were formulated jointly by the Chinese and Norwegian teachers. The students were divided into four groups each one focusing on a local problem or design task.

The workshop in Xi’an was run as a concept design workshop where students worked in four groups and had to present one or more designs. The content of the workshop projects was such that they supported students’ progression in the two courses PD6 Product and Systems, and Applied Modelling (Table 1). The Chinese staff defined four problem (or product) areas to be examined, ranging from mobile cooking equipment for small shops in the Xi’an muslim district, to new hotel furniture in cooperation with a local producer (Figure 1). The four groups of students were mixed Chinese/Norwegian. The initial phase of the project, with field studies, gave the various student groups a good start. Not all of the Chinese students were able to communicate in English, which made the group process more complicated and lengthy, but on the other made it necessary to rely more on visual communication. The results from the project work lead to an exhibition in Xi’an in June 2007.



Figure 1. Two concepts for a mobile sales stand (kitchen)

Later during the trip, the same NTNU students visited Tsinghua University in Beijing and participated in an ecodesign workshop organised by a third NTNU professor in cooperation with two Tsinghua professors. In this workshop, the focus was on environmental redesign of (electronic) toys. Again, mixed groups of Chinese and Norwegian students received the task of mapping and tackling various redesign challenges, that led for example to interesting discussions on the functionality of toys, are they designed to be played with or are they designed to be bought? It should be noted that while XUAT in Xi'an focuses more on traditional Chinese culture and values, Tsinghua has a high international profile already, together giving a good example of the many faces of China. At Tsinghua, the students' ability to communicate in English was considerably better. Perhaps as a consequence of that, this revealed a number of other cultural differences; whereas Norwegian students tend to take a very loose, creative approach to design problems, the Chinese students were much more concerned with being able to back up decision with quantitative data. Another clear difference was in discussing 'unclear' subjects, like what should be the functional unit of an electronic Buzz Lightyear doll. Chinese students felt uncomfortable with tackling a question that even the Norwegian professor did not have a clear answer to.



Figure 2 above and below: Impressions of the design workshop at XUAT



2008 Central America

Between February 25 and March 25, 17 third year students from NTNU, including two exchange students from Glasgow, visited Central America. In the first week, various educational activities were organised in cooperation with the School of Industrial Design at the Instituto Tecnológico de Costa Rica in Cartago. For these activities, the NTNU students were joined by approximately 20 students from ITCR. The activities included a first day of getting to know each other – with presentations from each of the institutions and social activities for 'breaking the ice'. On the second day, ITCR arranged a bionics workshop in which a visit to a nearby tropical rainforest was organised, in order to study how vegetation provides natural solutions for 'design challenges'. Later, in groups, the students were encouraged to explore how nature's solutions could be translated into and provide inspiration for product design (Figure 3). Another day long workshop focused on cultural redesign. The students were split into teams of approximately five students, and asked to work as if they were an intercultural design agency. Their first task was to develop a name and logo for this agency (Figure 4). The teams were given a more or less typical Norwegian product (such as an electrical potato peeler or a chocolate fountain (see Figure 5), or a Costa Rican product (such as an electric showerhead or a chemical 'plug-in' insect repellent) that they were to 'culturally redesign' to fit each other's market or other criteria listed in design briefs the teams developed for each other. Both workshops fitted well within the educational goals of the Ecodesign course (Table 1).

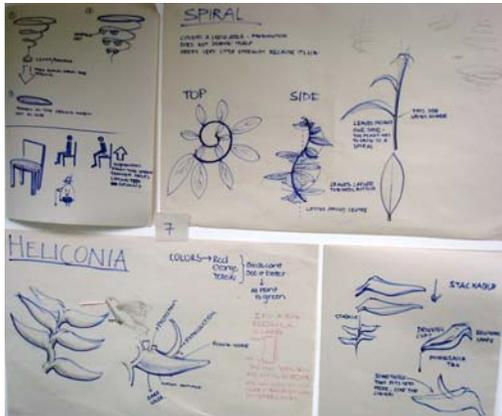


Figure 3. Impressions of the bionics workshop at ITCR



Figure 4. Logo examples



Figure 5. Impressions of the cultural redesign workshop at ITCR

The workshops were attended by a NTNU professor and a PhD student, in cooperation with several ITCR staff members. The ITCR design students' association organised various social activities throughout the week, including a lunch with traditional Costa Rican food and a football match between Costa Rica and Norway, which finished off the week in a social, informal way.

After two weeks in Costa Rica, the students were joined by another NTNU professor for a two weeks stay in Cuba. The stay in Cuba included a short visit to the Instituto Superior de Diseño in Havana.

On a teacher level, during both trips a variety of topics were discussed, including

- Research topics that can be relevant as cases for research and education in the future (furniture, common living facilities, material application and sustainability tourism products; differences of Norwegian and Chinese/Costa Rican traditions, history and life styles, influence of cultural perceptions on design).
- Similarities and differences in teaching practice (Teaching methods in China/Costa Rica and Norway, practical skills of students and their attitude towards their own competence).
- Opportunities for collaboration with local industry as part of the curriculum.
- Possibilities for exchange of graduate students' Master degree – short time or full time exchange program in cooperation with the international offices.
- Job opportunities for graduated students.

However, this paper aims to focus on the cross-cultural learning by the students. An analysis will be presented in the next section. It should be noted that as regards the educational perspective, the remainder of this paper will focus in particular on the period of time spent at Xi'an and ITCR respectively, as the bulk of interaction with local industrial design students took place here. Needless to say, the rest of the visits obviously also greatly contributed to the impressions and cross-cultural experiences of the NTNU students.

4. Questionnaire

To evaluate the study trips from a number of perspectives, a questionnaire was prepared and sent out to be filled in by the NTNU students from both study trips. The questionnaire contained a total of 37 statements, and the students were asked to rate the statements in the questionnaire on the following scale:

1. Do not agree at all 2. Do not really agree completely 3. Indifferent 4. Agree to some extent, 5. Agree completely

When discussing the results from the questionnaire below, a score of 4.0 (0.5) means that the students rated the statement with an average score of 4.0 (meaning that they on average agree to some extent), with an average deviation of 0.5, meaning that the students relatively agreed (the average of all average deviations being 0.65). The statements in the questionnaire build on a number of themes deemed relevant for researching the benefits of organising this type of study trip, including organisation, interaction and communication, culture and customs, and group size.

The remainder of this section will present an analysis and discussion of the results from the questionnaire, clustered according to the questionnaire themes.

Regarding organisation

When asked about the length of the study trip, the students that went to Costa Rica clearly disagree with the statement that it would have been beneficial to have a one or two weeks shorter study trip, scoring 1.5(0.7). The student that went to China are less clear (scoring 2.4(0.8)). This may be due to the perception that the trip to China was more 'hard work', both in terms of educational projects but also in being able to move around and organise social events. Surprisingly, the students that went to Costa Rica saw less benefit in making the trip longer compared to the China students, although in both cases the average deviation is considerable, indicating different opinions.

Students were asked about their opinion on who should be involved in the organisation of trips like these. For both trips, the opinions were similar: there was slightly more support for the statement that the organisation should be done by the students themselves in comparison to the department (3.5(0.7)/3.6(0.8) versus 3.3(0.8)/3.4(0.7)), although the scores being close to 3 indicate that the students are close to indifferent as to who is responsible for the organisation. The

reality was that for both trips the educational organisations were almost completely organised by involved staff members, whereas most of the social activities were organised by either the NTNU or the host students. Regarding the Costa Rica trip, students appear to disagree considerably about the amount of educational activities that were organised; although the score is a perfect 3.0, indicating complete indifference, the average deviation is 1.27, indicating that many students were of the opinion that either too many or too few educational activities had been organised. The China students leaned somewhat more towards satisfaction about a sufficient amount of educational activities having been organised, scoring 3.7(1.0), although disagreement was considerable here as well.

The students were also asked about their thought regarding educational activities during the trip being a possible compulsory part of the curriculum, and making up (part of) their grade. Regarding the first issue, students were pretty much in support of the idea, scoring 4.0(0.5) for Costa Rica versus 3.7(0.8) for China. Regarding grades however, students are less enthusiastic, although not negative, as they are on average largely indifferent, and show consensus about that as well. In practice, making the trip a compulsory part of the curriculum is not possible, as it is likely that there will always be students that cannot participate, because of obligations at home (like having to care for family members, because of visa problems, or because of medical reasons).

Students completely agree that the money the department spends on the study trips is well spent: scoring 4.8(0.3) for the Costa Rica trip, and 4.3(1.0) for the China trip, showing signs of lack of consensus in the latter case. Students do not think that the money should be spent on other ways to improve the curriculum, scoring 2.2(1.0) and 1.9(0.7), nor on other types of social activities (1.5(0.6) and 2.0(0.9)).

Regarding interaction and communication

On average, students were positive about room in the study trip programs to interact with the foreign students, scoring 3.8(1.1) and 3.9(0.8) for Costa Rica and China, though some lack of consensus can be noticed, in particular related to the Costa Rica trip. However, great differences exist between Costa Rica and China in terms of ease of communication. In Costa Rica, all students completely agreed that communication was easy (5.0(0.0)), for China, students were quite negative about ease of communication, scoring 1.4(0.5). This was obvious a language problem, as only one third of the Chinese (students and teachers) were able to communicate fluently in English. Therefore a lot of time and effort went into translation and explanations. This inspired the students to utilize other ways of communication like drawing, photos and computer modeling, although based on the questionnaire, the NTNU students experience the Chinese students to be relatively unfamiliar with the same or similar tools and methods for design like the ones they learn (2.7(0.9)), in particular when compared to the Costa Rica trip, where use is made of very similar tools and methods (4.6(0.5)). Although at both universities visited, the courses are taught under the name 'industrial design', it is clear that this does not necessarily imply a similar understanding of what industrial design is. Whereas in Costa Rica, the students experiences a quite similar understanding of industrial design (3.91(0.33)) and a shared universal design language (4.3(0.4)), in China, there is very little similarity in understanding the discipline 1.9(0.5). Clearly, in China the attitude towards design is different. In Scandinavia design is generally seen as the driver of innovation and new ideas, but in China, or at least in Xi'an, students tended more towards copying and adaptation.

Regarding culture and customs

The difference between Costa Rica and Norway on one hand, and China on the other hand, in terms of a shared understanding of what industrial design is all about, also become clear in terms of culture and customs related to what it implies to be an industrial designer. During the group processes, it was observed that the Chinese students emphasized their own efforts during the product development process while the Norwegian and Costa Rican students appeared more interested in collaboration and a common outcome. Being asked how they see themselves as future designers and the benefit of this profession the Chinese focused on the material and economic impact of being a designer, while the Costa Rican and Norwegian students appear to focus on interesting and varying design tasks and the overall life quality that the profession might contribute to. Hence, a preliminary conclusion is that the Chinese and Norwegian students have quite different expectations towards their future career and professional life.

In general, it is good to see that the NTNU students indicate that they got good impressions of how foreign students work (4.36(0.5) for Costa Rica and 4.0(0.3) for China). They took the opportunity to talk with the foreign students about comparing how it is to be a design student, and about cultural differences related to design, although more in Costa Rica (4.8(0.3) and 4.4(0.7) than in China (3.4(0.9)) and 3.3(0.9)). They talked even more about cultural differences related to life in general (4.9(0.2) for Costa Rica, 4.6(0.5) in China).

Based on their experiences, students indicated that the trips were well spent, primarily from a personal development perspective (4.8(0.3) for Costa Rica, 4.4(0.5) for China), but also from an educational perspective (3.5 (0.8) for Costa Rica, 3.3(1.0) for China) and from the perspective of being a future professional designer, scoring 3.7(0.5) and 3.1(0.8), the latter score for China being somewhat lower which may be explained by the fact that industrial design appears to have different meaning there.

Another effect of the study trips appears to be that to some extent, the NTNU students became more interested in design for other cultures (3.9(0.9) for Costa Rica, 3.3(0.6) for China), and may have stimulated them to address cultural aspects more often in their future work (4.1(0.5) and 4.3(0.4)). It also made them more confident about future traveling abroad related to their profession and study (4.5(0.5) and 4.4(0.5)). Finally, appears that they study trips made them more aware of the need for (global) sustainable development (4.0(0.6) and 4.0(0.9)), which may partly be explained by the fact that sustainability issues played an important role in several of the workshops during both study trips (see also Keitsch and Sigurjonsson [5]).

Regarding group size:

Finally, some questions regarding group size were included in the questionnaire. Group size has been noted as a parameter in measuring the effectiveness of personal development and intercultural learning in a student travel context. Gmelch points out that students who travelled in large groups 'often followed the herd rather than deciding themselves how they really wanted to spend their time'. According to his analyses, when students travel around in groups of 4-5 or more, it significantly limits contact with local people [6].

When asked whether being with a large group makes it easier to have one on one contacts with students from the host university, students indicated an average score of 3.3 (0.7) for Costa Rica, but a lower score of 2.6(0.9) for the China trip. When asked whether being with a large group makes it difficult to get into a personal conversation with foreign students, students indicated an average score of 2.5 (1.0) for the Costa Rica trip, but 3.3(0.7) for the China trip. Neither of these scores seems to indicate a strong support for the possible hypothesis that the group was too large

to interact on a personal level with the foreign students, although in the Chinese context clearly the large group size may have acted as a relative disadvantage to engage in personal contact.

Students seem to be fairly positive about participating, in a large group, in workshops and educational design activities as well as social activities. This seems to have worked out particularly well in the Costa Rica case, scoring 4.0(0.7) and 3.9(1.0), respectively. With respect to the China trip, the group size worked more in favour related to social activities (3.6(0.6) than in relation to workshops (2.9(1.0)). In relation to the workshops however, the relatively high deviation scores of 1.0 indicate that there were both students that completely agreed and completely disagreed that social activities with a large group work well. Finally, students seemed quite indifferent when asked whether there is enough room for individual initiatives related to educational activities when travelling in a large group, scoring 3.4 (0.8) for Costa Rica and 3.1(0.5) for China, but generally agreed that there is enough room for individual initiatives related to social activities, in particular related to Costa Rica (4.4(0.7)) in comparison to China (3.7(0.8)).

5 Conclusion and outlook

The results from the survey indicate that overall, the study trips have proven to be a meaningful investment in both increasing the cross-cultural perspective of the participating students as well as in strengthening the contacts with the involved institutions abroad. As such, this paper has been helpful to systematically reflect on the benefits of the study trips organised within the IPD curriculum.

With the university in Xian, there exists a valuable connection to NTNU, as we have built personal relationships and mutual understanding between staff members. With ITCR in Costa Rica, at the time of writing a joint research and education funding proposal is under preparation, aiming at exchange of students and cross-cultural design research.

We hope that the reflections on cross-cultural study trips with a relatively large group of students will be a meaningful contribution to the discussion on possibilities how to offer students cross-cultural perspectives. As such, it may support future decision making at academic institutes considering the organisation of this type of study trips within their (product design) curriculum.

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