IaSDR07
INTERNATIONAL ASSOC
IATION OF SOCIETIES OF
DESIGN RESEARCH THE
HONG KONG POLYTECH
NIC UNIVERSITY 12TH TO
15TH NOVEMBER 2007

DESIGN PLAY - AN INQUIRY INTO DESIGN EDUCATION PROCESSES IN HONG KONG'S MULTICULTURAL CONTEXTS

Rémi Leclerc[1] and Bruce Wan[1]

[1]School of Design, Core A, The Hong Kong Polytechnic University, Hung Hom, sdremi@polyu.edu.hk, sdbruce@polyu.edu.hk

ABSTRACT:

"A problem well defined is a problem half solved."

John Dewey

"Let my playing be my learning and my learning be my playing."

Johan Huizinga

Laying appropriate foundations for the development of a project is perceived and generally accepted in the design discipline as insurance for a successful outcome, a guarantee of success.

Or so it seems.

Through learning by doing, School of Design students at The Hong Kong Polytechnic University are acquiring the tools necessary for defining such foundational project components as a brief or a design process.

However, while they should be enjoying the process, many are struggling to produce outcomes that are relevant to these processes, hence failing to create appropriate learning and design value from their projects. This suggests there may be discontinuities in their network of ambitions and perspectives.

This paper presents initial findings from a project that probes into the reality of students' experience of the initial project development phases leading up to a formulation of a design statement and early specifications for a design concept. These findings provide insight into the critical process within student projects, the way they link developmental steps, and understand how disruptions in the initial stage of the project occur.

The opinions expressed in this paper reflect comments made to the investigators by academic staff of the School of Design, documenting teaching and learning experiences shared by many staff and students at the school. Generalisations are therefore possible within this context, but do not account for cases that undermine these notions.

THE CONTEXT

School of Design, The Hong Kong Polytechnic University – an international tertiary design education institution in an East Asian design hub

The only tertiary design education institution in Hong Kong, the Hong Kong Polytechnic University's (PolyU) School of Design (SD) offers a comprehensive range of design programmes, from sub-degree to doctoral studies. The programmes offered by SD in 2006 included a Diploma in Design Studies (Dip), a Higher Diploma in Multimedia Design Technologies (HDMDT), a Higher Diploma in Product Innovation Technologies (HDPIT), an Associate in Design (AD), a Bachelor in Design (BA), a Master in Advanced Design Practices (MDes), as well as the supervision of a cluster of MPhil and PhD candidates. With about a thousand students registered onto its programmes, SD provides local and international creative industries with a steady stream of design talent.

SD students are immersed in a unique cultural system that draws elements from multiple sources, due to its geopolitical situation and its dual Sino-British cultural heritage. An international institution whose profile was acknowledged in 2006 by Businessweek magazine as among the world's 40 best design schools, a significant proportion of the staff are from outside Hong Kong, from Europe, Central and Northern America and Mainland China.

Among its main objectives, SD stresses user-centred, humanistic, holistic approaches to design education, with a view to establishing an Asian perspective on globalised design practices.

As a consequence of these exceptional cultural circumstances, SD teaching and learning experiences oscillate between the so-called Confucian Heritage Culture (CHC) and Western educational approaches and standards.

THE STUDY

The reality of teaching and learning design at SD: observations

It is suggested that:

1. SD students' often stall at various stages of the design process; this leads to formulation of a concept that lacks an understanding of the importance of design's need to establish a web of interconnectedness linking various steps in this process. They ignore the relevant act of defining an appropriate design brief as an outcome of this interconnected system of information;

2. this lack of cultural perspective stems from their misunderstanding of the implications of the rich multicultural heritage at Hong Kong's core. Both local public and private secondary schools – institutions providing SD with students – have yet to significantly discuss or critically analyse the question of local cultural identity;

3. students are not well prepared to study a discipline that has cross-cultural implications and requires a holistic cultural perspective on a globalised economic and social environment;

4. a relevant humanistic approach to design education at the SD may emerge from inspiration from playful practices.

Research questions

How important are the links between the various steps in design project development?

How should SD students understand the relevance and limitations of their control over the creative process? How do teachers' view their students' understanding of the relevance of a cultural perspective in regards to design processes? How can educators better assist SD students to understand the relevance of integrating process and outcome in design's holistic cultural practice?

This research examines cognitive differences between East Asian and Western design practitioners, exploring SD students' understanding of the distinctions and relations between various tools and methods, and their perception of these as a matter of choice for review and assessment regarding the definition of appropriate design directions.

Study focus – SD Programmes, Staff, Students, and Subjects

SD Students - The majority of SD's flagship Bachelor in Design programme students are sub-degree holders (such as Higher Diploma, Diploma, or Associate Degree).

SD Teachers - Most SD academic staff teach simultaneously on several programmes, from undergraduate and sub-degree courses to postgraduate studies.

SD Subjects - The "Client Project" and the "Co-operative Workshop" are Work-Integrated Education (WIE) subjects aimed at developing students' understanding of real-life professional design practices. Typically, these subjects require students to develop professional-level design solutions while working in groups. The "Final Project" is a subject students are required to take individually, for which they will apply knowledge they have acquired during the course of their study.

The Design Play research project focuses on "Client Project", "Co-operative Workshop", and "Final Project" subjects taught in sub-degree and bachelor degree programmes, as they present students with the richest opportunities for exploring design processes and methodologies.

The two researchers have collectively taught a total of seven years at the SD at sub-degree, undergraduate, and postgraduate levels.

This paper relates initial findings from a pilot study inquiring into staff's teaching experience of the design developmental stages in sub-degree and undergraduate programmes. A second pilot study will focus on students' learning experience of the same stages.

Study outcomes

Insights gained from teachers' and students' responses will form the basis for an interactive tool that could foster enjoyable design development practices within the SD's multicultural context, in tune with its holistic and humanistic educational objectives.

STUDENTS' BACKGROUND AND EXPERIENCE

Confucian Heritage Culture (CHC) learners

SD students share in the main a common secondary school education background and are typical of what Watkins and Biggs (1996) have defined as the Chinese Learner in their study of the Chinese learner and Chinese teaching:

Confucian heritage culture (CHC) students - from China, Japan and Korea are notoriously known in the West for passively memorising large amounts of material in preparation for gruelling examinations in harsh, overcrowded classrooms. However CHC students often outshine Western students in international comparisons of academic achievement, in science and mathematics achievement especially. (Biggs, 1996)

"It is concluded that at the heart of this paradox are cross-cultural differences in the very processes of teaching and learning, particularly concerning the relationship between memorizing and understanding and the nature of motivation." (Watkins & Biggs, 2001)

It is also a fact that SD tends not to attract students who have performed best in their formative years. According to local secondary school education standards, design does not appear as an enticing option to Hong Kong parents who wish their offspring to study

more "serious" disciplines, such as medicine, law, accountancy, or engineering, as these are seen as more stable, lucrative career options.

Design tools and methods taught at SD

Many design tools and methods have been defined to unlock creative doors; however these are fragmented and lack the means to visually "string" together a creative path.

This fragmentation fails to address the cognitive diversity of HK's cross-cultural context in a manner that would help local design apprentices develop a holistic, humanistic design brief. This project's investigators feel there is a need for a reflective assessment of processes to be created by students with guidance from teachers.

Primary and secondary school experience: continuation into University

Watkins' and Biggs' insight into the reality of students and teachers in East Asian contexts provides us with some insight into the question posed in this research:

Two aspects to the paradox of the Chinese learner

1. Students from CHC such as China, Hong Kong, Taiwan, Singapore, Korea and Japan, are taught in classroom conditions that, according to Western standards, cannot be conducive to good learning: large classes, expository methods, relentless norm-referenced assessment, and harsh classroom climate. Yet CHC students out-perform Western students at least in science and mathematics, and have deeper, meaning-oriented approaches to learning.

2. A particular aspect of this paradox is the relationship between memorizing and understanding. CHC students are perceived as passive rote learners, yet show high levels of understanding.

Two aspects to the paradox of Chinese teaching[1]

1. Given that teachers in CHC operate under substandard classroom conditions in comparison with Western standards, and that CHC students perform so well, how do teachers achieve this result? How can teachers engage students in productive learning activities when they teach large numbers at a time, in an expository manner, in which students' role is essentially passive? So students learn in spite of, or because of, the way teachers operate in their classrooms?

2. A particular aspect of this paradox is "vernacular Confucianism" (Chang, 2000), those common beliefs about the nature of teaching and learning that are held by Chinese teachers, parents, and students. These include beliefs such as: "children are spoiled if praised", "scolding builds character", "failure is the result of laziness", and "no pain, no gain", all of which run counter to the type of optimal learning climate indicated by Western research and theory. (Watkins & Biggs, 2001, p.3-4)

Is this paradox of high academic performance and Confucius learning strategies also present in design education contexts, where the taught processes are meant to challenge norms and where creativity is applied for innovation? What kind of expectations do design students entertain about the nature of design teaching after so many years of exposure to this so called "vernacular Confucianism"?

Almost all students entering the SD are such students. Whereas they eventually perform well in science and technology design subjects such as visualisation software, engineering modelling, mechatronics, or manufacturing engineering, they are very often lost when immersed in the "humanities" side of design subjects. This is where they are required to articulate arguments and build up a case for innovation that is primarily concerned with social and cultural change, while exploring the effects technology might bring to these changes.

---

1 Chinese teaching comprises teachers operating in CHC contexts and may come from different parts of the world.

How important to the design process is technology, compared to social and cultural factors? According to John Thackara's two initial "Power Laws of Innovation" (2006), design is concerned with social and cultural change *before* it needs to consider technology:

Power Law 1: Don't think "new product" - think social value.

Power Law 2: Think social value before "tech".

RESEARCH METHODOLOGY

Interviews

This paper presents initial finding from a pilot study conducted at SD in the academic year 2006-07.

A cross-disciplinary sample of 14 academic staff, teaching at sub-degree, undergraduate and graduate level programmes were interviewed, while students from sub-degree, undergraduate, and graduate levels responded to a similar set of questions, mirroring teachers' responses but from a learner's perspective.

Teacher profiles	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
Education background															
local	✓	✓	✓	✓	✓		✓		✓				✓		57%
overseas	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	85.50%
Highest degree awarded															
Bachelor				✓							✓				15.00%
Master	✓	✓	✓		✓	✓	✓		✓			✓	✓	✓	72%
Doctor								✓		✓					15%
Design expertise															
visual communication	✓	✓		✓	✓	✓			✓				✓	✓	57%
industrial and product design			✓		✓		✓	✓		✓				✓	43%
environment and interior design								✓				✓			15%
advertising	✓					✓									15%
multimedia design		✓						✓			✓		✓		28.50%
Teaching															
Teaching Experience (years)															
3-6 years	✓	✓									✓	✓	✓	✓	43%
over 6 years			✓	✓	✓	✓	✓	✓	✓	✓					57%
Level taught															
sub-degree	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	93%
undergraduate	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	93%
post graduate			✓		✓		✓	✓	✓	✓	✓	✓		✓	65%

Table 1: Profile chart of the 14 teachers' interviewed

Table 1 charts a selection of responses from 14 School of Design (SD) teachers (out of a total of 67 SD teaching staff) who were interviewed about their experience teaching

students at SD during a series of semi-structured interviews held over the academic year 2006/07. A summary of main questions provided insight into the following issues:

A. A diagnosis by teachers of issues SD students are facing to introduce readers to the Hong Kong PolyU's tertiary educational context

B. An appreciation of students' understanding of the purpose of planning and vision for design projects

C. An overview of students' understanding of the social and cultural implications of the design profession

D. An assessment of the limitations students have understanding value creation

E. An attempt at identifying reasons behind students' reluctance to commit to their projects and their lack of professional conduct

The percentage shown at the end of each row represents the level of consensus reached by the sample of 14 teachers on a particular issue addressed during the interviews.

Interview cue cards

A deck of 30 cards (fig. 1) was designed to assist the investigators in their interviews with academic staff. The deck was laid on a table in front of interviewees. Each question was printed on a card, in a large font facing the interviewee, while a smaller print version of the question faced the interviewer. 10 additional cards laid on each side offered interviewees notes on specific definitions.

The card's rainbow-like colour scheme allowed interviewees to keep track of the interview process, which echoed common design processes:

Project initiation & brief

Planning

Identification of a design opportunity

Research & analysis

Specifications

Innovation

Evaluation

Figure 1. Design Play interview cue cards

Interview transcripts revealed insight into perceptions of CHC design education experiences, as the majority of academic staff interviewed were of Hong Kong Chinese ethnicity. Comments offered by non-Chinese staff shed a complementary light on these experiences and provided the investigators with confirmation that, to paraphrase Watkins and Biggs, "widely held Western stereotypes and misconceptions of Chinese *design* learners are shown to be largely without foundation."

FINDINGS: RESPONSE FROM TEACHERS

THE SCHOOL OF DESIGN LEARNER – A TEACHERS' DIAGNOSIS

One could easily be forgiven for reading in the teachers' diagnosis of their students' general learning experience a harsh judgement of their ability to develop on their own as adult individuals. This does not mean students perform poorly, that teachers resent their students' attitude, or that SD requirements are set too high. For detailed responses to the interviews, see Tables 2 to 6. What follows is a discursive presentation of findings.

	Teacher responses															
	Questions were asked in regards to:	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
A.	**The School of Design learner - a teachers' diagnosis**															
1	students are too young to study design				✓			✓							✓	21.50%
2	students could be more proactive in their learning	✓	✓				✓	✓		✓		✓	✓	✓		57%
3	students' level of motivation is uneven		✓	✓	✓											21.50%
4	students are often afraid to ask questions			✓	✓					✓		✓	✓	✓	✓	50%
5	students are not independent			✓			✓					✓	✓		✓	35.50%
6	students do not read & listen enough	✓	✓	✓	✓	✓				✓	✓		✓	✓	✓	71.50%
7	students have very limited life experience, which limits their cultural perspective	✓	✓	✓	✓	✓			✓	✓		✓	✓	✓	✓	78.50%
8	students often treat projects like assignments	✓		✓	✓	✓			✓				✓	✓	✓	57%
9	students lack a sense of responsibility	✓		✓	✓					✓		✓	✓		✓	50%
10	students have difficulty grasping the relevance of contextual studies	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	✓	78.50%
11	students are lazy!			✓	✓		✓									21.50%
12	students have difficulty looking beyond the tasks assigned	✓	✓	✓	✓	✓			✓		✓	✓	✓		✓	71.50%
13	students may not fully grasp the professional implications of design practice as many seem to confuse it with the stereotypical artist's lifestyle				✓	✓	✓	✓		✓			✓	✓	✓	57%
14	students are challenged in their ability to articulate their ideas and argue for their case	✓	✓				✓		✓	✓		✓	✓	✓	✓	65%
15	students are not prepared to an open-ended education philosophy				✓		✓	✓		✓	✓	✓	✓	✓	✓	65%
16	"Force feeding a duck" - like pedagogical traditions of HK secondary schools does not prepare HK students to study design	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%

Table 2: SD teachers' portrait of their students

Rather, the general consensus among teachers was that the difficult learning conditions students had experienced in local secondary schools did not prepare them for the requirements of a design school: an inquisitive mind, initiative, questioning the status quo, a sense of cultural perspective, the ability to structure and articulate a case for change – even if change did not sit well with authority.

These contrasted strongly with the CHC conditions that Watkins and Biggs described in their works and which Hong Kong cinematographer Tammy Cheung had depicted with poignancy in her 2003 documentary movie "Secondary School".

The cultural shock students experienced entering the SD after years spent being "force-fed" knowledge often left them unable to step outside their comfort zone to stretch their minds to broader contextualized studies, the outcome of which is applied and needs to bear contemporary cultural and social relevance.

The challenge is twofold: as the SD champions Outcome Based Evaluation (OBE), students are required to demonstrate ability in producing great projects – however these can only come to fruition if a well structured process has been developed.

Unfortunately these students' limited life experiences means they tend to entertain fuzzy notions of design's purpose and have blurry visions of their future as designers: many applicants to sub-degree or undergraduate programmes see design as a means to make their "dreams come true".

STUDENTS' ABILITY TO DEMONSTRATE VISION AND STRATEGY IN THEIR PROJECTS

	Questions were asked in regards to:	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
B.	**Student's ability to demonstrate vision and strategy in their projects**															
1	few students have vision & strategy in mind when analysing project briefs		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	93%
2	establishing vision when planning a project needs reflective thinking and experience		✓	✓			✓	✓				✓	✓	✓	✓	57%
3	students rush to a design solution before projecting vision or establishing a strategy	✓	✓			✓		✓		✓	✓		✓	✓	✓	65%
4	vision & strategy are not included in the scope of studies		✓		✓								✓			21.50%
5	students project vision that are not relevant to the design brief or the project context									✓	✓		✓	✓	✓	35.50%
6	students have difficulty collecting, categorising, summarising, and synthesizing data relevant to their projects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%
7	students are confused about the purpose of each project developmental step	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%
8	students lack an understanding of the need to articulate the various developmental steps in their design projects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%

Table 3: SD teachers' understanding of their students' ability to demonstrate vision and strategy in their projects

Fuzzy notions, blurry visions

As we see in Table 3, over half the interviewees believed that vision required reflective thinking and experience, and the majority of them found students were generally weak in

this area. This weakness was particularly apparent in project work where over 90% of interviewees found few students had vision and strategy in mind when analysing their project briefs. Some estimated that only 8% of students each year had any form of vision for their career as designers and less then half of the final year students had a sound knowledge of strategy development and project planning.

All interviewees agreed that students generally had difficulties collecting, categorizing, summarizing and synthesizing data relevant to their design projects. They were confused about the purpose of each developmental step and lacked an understanding of the need to articulate these various steps in their projects. Almost two-thirds of interviewees reported that students tended to rush into a design solution before they developed their vision or strategy. They simply followed process guidelines without being able to imagine the outcomes. Worst still, students had a tendency to regard projects as assignments and this mentality could kill off vision.

Some allowance was made for students' young age and limited life experiences, which the interviewees believed were contributory factors in students' inability to externalize their vision through their projects. The interviewees also accepted that knowledge was a result of accumulated observations over a long period of time and it might be unreasonable to ask students to articulate strategy or planning in their projects. Students should be free to develop their vision without being concerned about the "correct' angle from which to approach a project, which did not exist anyway. However, the role of the teacher remained important in providing inspiration to students and reminding them that their projects were more than merely assignments.

Stronger beginner guidelines, smoother transitional periods

Some interviewees suggested that to help students develop their vision and strategy, a well-planned subject brief or curriculum could provide them with a direction from which to study design. Students would be trained to question their reasons for carrying out their projects and what they wanted to gain or learn from it. For final year students, they would be expected to answer three questions regarding their choices, such as whether they could handle the projects within their abilities; what moved them; and their professional orientation.

STUDENTS' UNDERSTANDING OF CULTURAL AND SOCIAL RELEVANCE OF DESIGN

	Questions were asked in regards to:	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
C.	**Students' understanding of the cultural and social relevance of design**															
1	students should be taught design through humanistic based approaches					✓	✓	✓		✓	✓	✓	✓	✓	✓	65%
2	contextualization of design education is not our priority		✓		✓	✓										21.50%
3	courses are too short for contextualized studies (as opposed to skill-based studies)		✓		✓	✓	✓	✓			✓		✓		✓	57%
4	students are unable to extract relevant findings from research	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%
5	staff and students experience a cultural tug of war when exploring design practices						✓	✓	✓	✓	✓	✓	✓		✓	57%

Table 4: SD teachers' comments on their students' understanding of the cultural and social relevance of design

"Who should I be designing for? How?"

The cultural and social relevance of design is fundamental to understanding design. Table 4 shows that more than 60% of interviewees believed that students needed to appreciate that design was about the user, that it was a social construct, and that design should be taught through humanistic-based approaches. This meant students also needed to understand the user in context and that the final design solution should be beneficial to people.

Quick skills or long context?

Yet the interviewees also revealed that the extent to which students were able to explore cultural and social relevance was greatly influenced by their level of education and its corresponding curriculum structure. For example, Higher Diploma programmes were essentially vocational training that was skills-based and technical. This restrictive curriculum allowed little time for students to nurture their understanding of the contextual aspects of design, or to examine the causes and effects of design methods. In contrast, students in degree programmes were allowed much more time in their curricula for contextual studies.

A few interviewees contended that students should be taught practical skills before they were taught the context, as it was difficult enough to discuss the purpose of a project, but most commented that students should develop a holistic way of looking at the world.

All interviewees agreed that students were unable to extract relevant findings from research. Humanistic-based approaches should help students engage further into social or cultural dialogue, allow exposure to issues regarding social responsibilities and extract from their research relevant findings for the creation of design value.

More than a third of interviewees commented that both students and teachers were experiencing a cultural tug of war, as the design practices blended methods and processes from both the West and the East. One interviewee argued that social and cultural reference in Hong Kong should focus on the local culture, that is, the Chinese culture, and believed that humanistic design was not a logical and "dissecting", or fragmented concept, such as that of Cagan and Vogel (2002) system of innovation, or an information technology based model. Instead, the interviewee suggested it was about animations and fluidity, such as Chinese art, Chinese culture, and Chinese philosophy. A recurring theme during the interviews, the need for CHC design educational methodologies was emerging: one that would specifically address the needs and values of the developing Chinese consumer market.

STUDENTS' UNDERSTANDING OF THE PURPOSE OF VALUE CREATION

	Questions were asked in regards to:	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
D.	**Students' ability to understand the purpose of value creation**															
1	students are not ready to understand the meaning and purpose of value creation		✓		✓		✓				✓					28.50%
2	students should be trained in the acquisition of skills before being introduced to contextual design notions such as value creation	✓	✓		✓		✓									28.50%
3	students should understand contextual notions such as "values" in terms of "purpose", or "concept" as "ideas" related to "needs"						✓	✓		✓	✓				✓	35.50%
4	students should be introduced to humanistic based design educational approaches to understand the meaning of value creation			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	78.50%

Table 5: SD teachers' response to questions in regards to their students' understanding of the purpose of value creation

Value? – Danger!

Value creation is a critical element of the design process and students should understand how different aspects of design, such as economical, cultural, functional, social, aesthetic, technical, and historical, affect value creation. Yet teaching students to understand "values" and the purpose of "value creation" seems a challenging quest

within the current framework of design programmes. The interviewees reported that students generally found the concept of value difficult to comprehend and were often only able to grapple with it in the final phase of their study. This led one interviewee to comment that it was wrong, dangerous even, to use the word "value" if students had difficulties understanding it. It might be more relevant to talk about the purpose, rather than values, of a project.

The road to value is paved with good intentions

Over a quarter of interviewees found that students were not ready to understand the meaning and purpose of value creation. They believed that students should be trained in the acquisition of skills before being introduced to the contextual design notion, such as value creation. To help students, the interviewees employed different methods with the aim of getting students to define their project objectives at the outset. For example, some interviewees encouraged students to read their project briefs thoroughly, which often included the term value creation and was the key to guiding students' understanding of different aspects of design. Some interviewees avoided the focus on value creation altogether and assisted students in improving their visualization skills and reaching a level of awareness on the purpose of design in value creation.

One interviewee commented the current three-year academic programme did not offer sufficient time to teach value creation to students, particularly to local students who seemed to be younger mentally and less independent than their western counterparts. Time-pressured, teachers were tempted to be directive rather than work with students at their pace to nurture their creativity and support their inquiry. Unwittingly, they then found themselves teaching in a style known in Hong Kong as "force-feeding a duck". It describes a pedagogical style where students cram in information mainly for the purpose of passing assessments that allow them to progress through different stages of education. It is a vicious circle where the more the teachers force-feed knowledge into students to help them learn faster, the more the students wait to be fed and not take responsibility for their own learning.

Almost 40% of interviewees believed that students should understand contextual notions such as 'value' in terms of 'purpose', or 'concept' as 'ideas' related to 'needs'. They expressed frustrations with students who simply did not care about values and were

unclear on how they could create value. Students tended to set their own agendas for each project, or their own expected outcomes, without reading the project brief properly, or misaligning the project brief expectation. The only exception to this was found in mature students and particularly those with work experience or had attended vocational education courses. These students could adapt their skills into a well structured design process with clear design objectives.

Value creation is a humanistic, holistic act

Almost 80% of interviewees suggested that students should be introduced to humanistic based design educational approaches to understand the meaning of value creation. One interviewee believed a humanistic based design approach would help define the role of designers and cultivate a personal commitment to value definition.

Another interviewee suggested that people were "value animals" and value was embedded in all human activities. However, students were too young to appreciate how the design process could be used to understand as well as reflect the juxtaposition of different human needs and values. Hence, he chose not to initiate discussions on culture or value and preferred to use the 5C analysis (consumer, content, context, company, and competitor) to encourage students to probe into issues. These might involve asking students to be aware of their project's stakeholders, to ascertain whether the content of their projects related to business or technology, or to address particular ergonomic or user problems. If in this probing process the students encountered theories on value and decided to follow a particular direction, such as that of Cagan & Vogel (2002), it would be acceptable as long as they knew what they were doing.

STUDENTS' ATTITUDE TO LEARNING DESIGN AND THEIR LEVEL OF PROFESSIONALISM AND COMMITMENT

	Questions were asked in regards to:	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
E.	**Students' attitude to learning design and their level of professionalism and commitment**															
1	teachers find it difficult to motivate students to commit to their projects				✓	✓	✓	✓	✓		✓	✓		✓	✓	65%
2	students are limiting their learning experience by choosing to work harder on subjects with higher credit weighting	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	93%
3	students are not committed to their project because school projects are not anchored in real professional environments	✓	✓	✓			✓							✓	✓	43%
4	students do not adopt professional conduct because the cultural context in HK does not consider it as a serious career in a similar fashion to say, engineering, law, or medicine							✓		✓	✓	✓	✓	✓	✓	50%
5	students are not given enough time over their 2 to 3 year course to understand the ethical implications of design practice		✓		✓	✓	✓						✓			35.50%
6	students' study pattern does not allow individual teachers to mentor their development on a continuous basis							✓					✓	✓	✓	28.50%

Table 6: SD teachers' diagnosis on their students' attitude to learning design and their level of professionalism and commitment

Switching from a closed-ended system to an open-ended journey

The interviewees observed that most students did not demonstrate professionalism or commitment towards their chosen discipline. Over 70% of interviewees found it difficult to motivate students to commit to their projects and that students had a tardy attitude to learning design. They believed that this attitude to learning was shaped by their experience of education from a young age, where they expected teachers to give information and answers. They learned what was necessary for passing examinations and progressing onto the next stages, and this often meant a superficial understanding of their studies. This utilitarian approach continued in university and 93% of interviewees reported that students allocated their studying and mental effort according to the number of credits for each subject. In so doing, students were also limiting their learning experiences at the same time.

One interviewee remarked that the students' approach to education was akin to shopping in a supermarket. They chose subjects and teachers without thinking through the reasons for it and were not committed to their projects. Over the period of a three-year course, they were unable to develop an in-depth appreciation of their education or the professionalism and commitment.

Students were detached from reality and only realised their difficulties when they had to present in front of people. The difficulties were two-fold: difficulties in using language to express their ideas and, more fundamentally, having a very superficial sense of

observation and not being able to incorporate their experience into design in a deep way. Students thus appeared unprofessional for they could not see the web of connectedness between their experiences, the elements of daily lives and their design. They had no understanding of their design or its possible depth. As one interviewee put it, a professional designer should be able to explain why certain things had happened in the design process for different reasons and they needed certain self-awareness of this process. Professionals also needed to bear professional consequences for finance, life cycle or social impact of the product.

Cognition and creativity

One interviewee suggested that student's difficulties might also lie in the great cognitive leap they were required to take as they switched from an educational system that valued expository teaching and rote learning of established parameters, such as science, mathematics, or even language based knowledge, to an environment where knowledge was changing as it accrued, and learners were immersed in open-ended educational scenarios.

CHC education emphasised the understanding of systems of relationships, with focus on efficiency within a specific knowledge domain: students became fast processors of information and synthesized problems within a definite range.

From networking knowledge to networking a familiar set of social parameters, the step was easily walked: students trained in CHC contexts were ready to map their knowledge of specific domain systems onto clearly established social systems. Hence, for CHC learners, thinking "outside the box" might appear a scary prospect. On the other hand, Western students were encouraged to develop independent modes of thinking, allowing deeper reflection and a more proactive sense of agency.

One type of learner may be at ease mapping closed-ended specific knowledge systems of relationships while others may be required to rely on their own belief in control over the world and to "push the envelope" in the name of progress.

Seriously playing at being creative professionals

With client projects, one interviewee opined that students were sometimes under the false impression that they were giving something new to clients. In reality, the clients

were not simply commercial partners but also coaches. The working relationship was not one-way and client projects should be more accurately viewed as a combined educational/professional "joint ventures". These ventures were opportunities for students to learn to present and explain their ideas to clients.

Some interviewees cited other examples of students' lack of professionalism and commitment: frequent lateness in attending class; absence from project briefing sessions, not reading project briefs properly or at all, reluctance to attend guest lectures, and a general lack of respect for their studies. If students did not feel confident about a subject or that the subject did not match their personal preference, their interest decreased correspondingly.

This lack of discipline seemed innocuous but should not conceal the fact that this went hand-in-hand with a poor understanding of the social premise of design ambitions: projects were poorly developed and poorly presented with very little consideration given to fundamental social, cultural, or sustainable issues. Some interviewees tried to be supportive but around 20% found that the study pattern of students did not allow individual teachers to mentor their development on a continuous basis. For example, a teacher might only teach two subjects to the same students over a period of two years and had limited time to spend on mentoring them.

Social mission and value creation

Half the interviewees believed that students generally did not adopt a professional approach to design as a result of the cultural context of Hong Kong, which did not consider design to be a serious career when compared with, say, engineering, law, or medicine. They also believed that students were not committed to their projects as these were not anchored in real professional environments.

Around 35% of interviewees found that students were not given enough time in their two or three year courses to understand the ethical implications of design practice.

TOWARDS A PLAYFUL DESIGN TOOL

Most interviewees at the SD reported the need to spend time with students, but the many teaching hours assigned to teachers on different subjects with different students left them with little time to tutor individual students.

Spending time – a lot of it – and repeating experiments until students understand the value of following a process; "read the book a hundred times and the meaning appears" becomes "do the process a hundred times and its relevance appears."

While this may be an attractive proposition for some students, it is not for teachers, who are often managing heavy work schedules, spending long hours on administration, research, or consultancy in addition to the time spent on teaching.

A majority of teachers agree on the need for students to understand, through a hands-on approach, the relevance of developing holistic cultural perspectives in regard to design processes. Here the development of tools that would assist students foster the ability to link the various steps in design development appears necessary in order to improve their sense of control over the creative process.

Bridging cognitive gaps

Confronted with a complex, dual cultural heritage, Hong Kong design practitioners and apprentices oscillate between two cognitive models when formulating answers to design briefs and developing project rationales.

In spite of SD's internationally documented achievements in the field of creativity and entrepreneurship and its emerging international profile, academics and students there often express perplexity when asked to relate their teaching and learning experiences in establishing processes that bear relevant outcomes.

Experiencing local, cultural and professional realities while adopting practices established in other cultural contexts, teachers relate accounts of students' confusion about the relevance of design processes to valuable outcomes.

It is not surprising then that a significant proportion of staff is disconcerted when asked to agree on design terms, concepts or methodologies, reflecting John Heskett's

humorous observations on the many interpretations of the word "design" in the English language: "Design is to design a design to produce a design" (Heskett, 2002). One sees how even native speakers of the language may puzzle over the semantic intricacies of the term defining the profession.

Similarly, educators at SD differ on the appropriate usage of the word "concept", preferring instead the term "need", or "idea". Staffs also hold divergent views over understanding various visual tools, such as brainstorming, mind mapping, or maps and matrices charting different product or brand-specific identities. It seems almost logical to find that many students too are unable to grasp the relevance of the concept of a process to value creation as the fundamental basis for the generation of appropriate outcomes.

With the multi-disciplinary, multicultural reality of the SD's academic staff on the one hand, and its stated mission of providing students with a holistic, humanistic understanding of the design practice on the other, there is a need to offer staff and students alike the means to embrace cultural diversity in the context of design education.

How to address the ever changing, organic nature of design's variable geometry within the context of these shifting geographies of thought?

Best of both worlds "represented but transformed"

Richard E. Nisbett, in his book "The Geography of Thought", suggests that today's profound perceptual and cognitive differences between East Asian and Western Cultures find their origins in the ancient Greek notion of "personal agency – the sense that one is in charge of one's own life and free to act as one chooses" - and the ancient Chinese notion of "harmony" – the understanding that the individual "was first and foremost a member of a collective, or rather several collectives – the clan, the village, and especially the family".

While these differences may sound familiar to many of those living in multicultural contexts and enjoying the reality of both cultural realms, he explains how these differences may converge in a "Third Way" - a view shared with hope and great anticipation by many SD staff, eager to enjoy the best of both worlds with a new perspective on design practices:

"…a third view should be considered, which is that the world may be in for convergence rather than continued divergence, but a convergence based not purely on Westernisation but also on Easternisation and on new cognitive forms based on the blending of social systems and values." (Nisbett, 2003, pg 224)

The author further concedes that there are signs all around that would support his proposition:

"While Easterners learn to emphasize debate in education, Westerners experiment with logical systems that do not require that a proposition be true or false…. If social practices, values, beliefs, and scientific themes are to converge, then we can expect that changes in thought processes would begin to evaporate.

There is in fact evidence that changes in social practices, and even changes in temporary states of social orientations, can change the way people perceive and think." (Nisbett, 2003, pg 225-226)

German social commentator Friedrich Schiller in his 1794 publication *Letters Upon The Aesthetic Education of Man* contends that play is "The only opportunity for humans to fully develop their humanity by setting free the two aspects of its double nature: sensation and thought." (Letter 15)

Playful modularity

Results of this pilot study are suggestive for further development. Responses from a second pilot study of students' responses will provide alongside insights from teachers the basis for the development of a possible playful tool that will assist students establish relevant design processes and project outcomes.

How to reconcile a creative "wicked" problem with a logical "tame" (Rittel & Webber, 1973) one? How to bridge cognitive differences and reconcile cultural tensions within the context of an international design school? Are there universal cultural commonalities to be found in play practices that could be used for the development of a tool that diverse, multicultural design players can adopt for value creation and the production of outcomes relevant to contemporary cultural contexts?

Design projects are generally understood as following a 5-step structure towards an outcome:

- Research,

- Analysis,

- Concept,

- Development, and

- Execution/Production;

Projects are chronological processes, featuring milestones, timelines, a deadline, and are therefore planned as linear structures. A very common illustration of this understanding is the wide usage of GANTT charts by designers which display a horizontal time line and a vertical listing of tasks.

However, in spite of the apparently irreversible and linear nature of its development; the design process has a playful ubiquitous modular dimension: at any given stage of a design process, designers may need to jump backward (say, for further research or to original intentions) or forward (for example, to carry out usability tests).

Nevertheless, design projects are often seen as journeys, or narratives that reveal their plot to readers similar to the ways games unfold to participants. In "Aesthetics of Play", Celia Pierce offers a comprehensive overview of the commonalities shared by most games. According to her extensive survey made of games, most are made of:

1. Parameterized play consisting of rules

2. A goal

3. Obstacles

4. Resources

5. Consequences

6. Information

(Pierce, 2006, pg. 69)

As generators of meaning, designers experience a process akin to play: in his 1938 opus, Johan Huizinga contends that culture is the outcome of play. A cross-cultural, humanistic approach to design education, to which most SD teachers adhere, may lie in its inspiration from play and game practices. Taking cues from the way play has been integrated into arts and design educational programmes, this project intends to explore possibilities to enhance creativity for Hong Kong design students through a playful modular toolkit. The aim of such a tool is to allow design practitioners to string a multiplicity of value-driven design processes intended to develop outcomes relevant to the contemporary cultural contexts.

As we see in the answers of the majority of teachers to questions on their students' levels of motivation, there appears to be a need for educational methods that could help maintain students' enthusiasm for design. In order to assist SD students maintain healthy levels of motivation when developing personal design practices, design education needs to sustain a sense of creative enjoyment – play, game, flow – in order to self-actualise and transcend the perceived limits of their realm.

Flow and enjoyment are feelings very much experienced when we are immersed in play. Katie Salen & Eric Zimmerman lay out the "interactive, representational, social and cultural aspects (of play) as simultaneously contributing to the experience of play." Here, "games are complex forms of designed culture to be understood from multiple perspectives" (Salen & Zimmerman, 2003). This form of meaningful interaction bears similarities with the teaching and learning activities commonly practiced in design, as demonstrated in the table below:

	Play	**Design**
	(Rules of Play)	(Design Play)
	Simplicity	Affordance
	Uniqueness	Open-endedness
	Elegance in representation	Aesthetic delight
	Social interaction	Teamwork & user-centeredness
	Fun	Creative flow
	"Cool"-ness	Shaping the things to come
	(Salen & Zimmerman)	(Leclerc & Wan)

This project's second part will compare student response to teacher response to see where they converge or diverge. From this we will attempt to visualise an interactive tool that could foster play-like design development practices within the SD's multicultural context, in tune with its educational objectives.

An effective cultural shift, blending the multiple perceptual and cognitive realities of SD design students and teachers, is seen possible with a possible development of this tool, verifying Albert Einstein's proposition that "problems cannot be solved at the same level of awareness that created them."

June 2007

REFERENCES:

Cagan, Jonathan, Vogel, Craig M., Creating Breakthrough Products: Innovation from Product Planning to Program Approval, FT Press, 2002

Chang, W.C., In Search of the Chinese in all the Wrong Places!, Journal of Psychology in Chinese Societies, 2000

Cheung, Tammy, Secondary School, Hong Kong Reality Film Production, 2003

Cross, Nigel, Developments in Design Methodology, John Wiley & Sons, 1984

Csikszentmihalyi, Mihalyi, Flow: the Psychology of Optimal Experience, Harper & Row, New York 1990

Heskett, John, Toothpicks and Logos – Design in Everyday Life, Oxford Press, New York, 2002

Huizinga, Johan, Homo Ludens: a Study of the Play Element in Human Culture, Boston, MA: Beacon Press, 1938

Nisbett, Richard E, The Geography of Thought – How Asians and Westerners Think Differently… and Why, Free Press, Simon & Schuster, New York, 2003

Pierce, Celia, Aesthetics of Play, Visible Language, special issue #40.1, part 2, Rhode Island School of Design, 2006

Rittel, H., and M. Webber; "Dilemmas in a General Theory of Planning" pp 155-169, Policy Sciences, Vol. 4, Elsevier Scientific Publishing Company, Inc., Amsterdam, 1973

Salen, Katie, & Zimmerman, Eric, Rules of Play – Game Design Fundamentals, MIT Press, 2003

Schiller, Friedrich, Letters Upon The Aesthetic Education of Man, Letter 15, 1794, Kessinger Publishing, 2004 reedition

Thackara, John, 10 Power Laws of Innovation, retrieved March 2nd, 2007, from http://www.doorsofperception.com/archives/2006/07/power_laws_of_i.php

Watkins David A. & Biggs John B., The Chinese Learner: Cultural, Psychological and Contextual Influences, HKU Press, 1996

Watkins David A. & Biggs John B., The Paradox of the Chinese Learner and Beyond, CERC, HKU 2001

APPENDIX:

Design Play School of Design teacher interview analytical table

Design Play	An Inquiry into Education Design Processes in Hong Kong's Multicultural Contexts										Teacher interview analysis				2006 2007
Teacher profiles	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
Education background															
local	✓	✓	✓	✓	✓		✓		✓				✓		57%
overseas	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	85.50%
Highest degree awarded															
Bachelor				✓							✓				15.00%
Master	✓	✓	✓		✓	✓	✓		✓			✓	✓	✓	72%
Doctor								✓		✓					15%
Design expertise															
visual communication	✓	✓		✓	✓	✓			✓				✓	✓	57%
industrial and product design			✓		✓		✓	✓		✓				✓	43%
environment and interior design								✓				✓			15%
advertising	✓				✓										15%
multimedia design		✓						✓			✓		✓		28.50%
Teaching															
Teaching Experience (years)															
3-6 years	✓	✓									✓	✓	✓	✓	43%
over 6 years			✓	✓	✓	✓	✓	✓	✓	✓					57%
Level taught															
sub-degree	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	93%
undergraduate	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	93%
post graduate			✓		✓		✓	✓	✓	✓	✓	✓		✓	65%

Teacher responses															
Questions were asked in regards to:	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
A. The School of Design learner - a teachers' diagnosis															
1 students are too young to study design			✓				✓							✓	21.50%
2 students could be more proactive in their learning	✓	✓				✓	✓		✓		✓	✓	✓		57%
3 students' level of motivation is uneven		✓	✓	✓											21.50%
4 students are often afraid to ask questions			✓	✓				✓		✓	✓	✓	✓		50%
5 students are not independent		✓				✓					✓	✓		✓	35.50%
6 students do not read & listen enough	✓	✓	✓	✓				✓	✓		✓	✓	✓		71.50%
7 students have very limited life experience, which limits their cultural perspective	✓	✓	✓	✓	✓			✓	✓		✓	✓	✓	✓	78.50%
8 students often treat projects like assignments	✓		✓	✓	✓			✓				✓	✓	✓	57%
9 students lack a sense of responsibility	✓		✓	✓					✓		✓	✓		✓	50%
10 students have difficulty grasping the relevance of contextual studies	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	✓	78.50%
11 students are lazy!			✓	✓		✓									21.50%
12 students have difficulty looking beyond the tasks assigned	✓	✓	✓	✓	✓			✓		✓	✓	✓	✓		71.50%
13 students may not fully grasp the professional implications of design practice as many seem to confuse it with the stereotypical artist's lifestyle				✓	✓	✓	✓		✓			✓	✓	✓	57%
14 students are challenged in their ability to articulate their ideas and argue for their case	✓	✓				✓		✓	✓		✓	✓	✓		65%
15 students are not prepared to an open-ended education philosophy			✓		✓		✓	✓	✓	✓	✓	✓	✓		65%
16 "Force feeding a duck" - like pedagogical traditions of HK secondary schools does not prepare HK students to study design	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%
B. Student's ability to demonstrate vision and strategy in their projects															
1 few students have vision & strategy in mind when analysing project briefs		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	93%
2 establishing vision when planning a project needs reflective thinking and experience		✓	✓			✓	✓				✓	✓	✓	✓	57%
3 students rush to a design solution before projecting vision or establishing a strategy	✓	✓			✓		✓				✓	✓	✓	✓	65%
4 vision & strategy are not included in the scope of studies		✓		✓							✓				21.50%
5 students project vision that are not relevant to the design brief or the project context								✓	✓		✓	✓	✓		35.50%
6 students have difficulty collecting, categorising, summarising, and synthesizing data relevant to their projects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%
7 students are confused about the purpose of each project developmental step	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%
8 students lack an understanding of the need to articulate the various developmental steps in their design projects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%
C. Students' understanding of the cultural and social relevance of design															
1 students should be taught design through humanistic based approaches					✓	✓	✓			✓	✓	✓	✓	✓	65%
2 contextualization of design education is not our priority		✓		✓		✓									21.50%
3 courses are too short for contextualized studies (as opposed to skill-based studies)		✓		✓	✓	✓	✓			✓		✓		✓	57%
4 students are unable to extract relevant findings from research	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100%
5 staff and students experience a cultural tug of war when exploring design practices						✓	✓	✓	✓	✓	✓	✓		✓	57%
D. Students' ability to understand the purpose of value creation															
1 students are not ready to understand the meaning and purpose of value creation		✓		✓		✓				✓					28.50%
2 students should be trained in the acquisition of skills before being introduced to contextual design notions such as value creation	✓	✓		✓		✓									28.50%
3 students should understand contextual notions such as "values" in terms of "purpose", or "concept" as "ideas" related to "needs"						✓	✓		✓	✓				✓	35.50%
4 students should be introduced to humanistic based design educational approaches to understand the meaning of value creation		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	78.50%
E. Students' attitude to learning design and their level of professionalism and commitment															
1 teachers find it difficult to motivate students to commit to their projects				✓	✓	✓	✓	✓		✓	✓		✓	✓	65%
2 students are limiting their learning experience by choosing to work harder on subjects with higher credit weighting	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	93%
3 students are not committed to their project because school projects are not anchored in real professional environments	✓	✓	✓			✓							✓	✓	43%
4 students do not adopt professional conduct because the cultural context in HK does not consider it as a serious career in a similar fashion to say, engineering, law, or medicine								✓		✓	✓	✓	✓	✓	50%
5 students are not given enough time over their 2 to 3 year course to understand the ethical implications of design practice		✓		✓	✓	✓						✓			35.50%
6 students' study pattern does not allow individual teachers to mentor their development on a continuous basis							✓					✓	✓	✓	28.50%

This table charts a selection of responses from 14 School of Design (SD) teachers (out of a total of 67 SD teaching staff) who were interviewed about their experience teaching students at SD during a series of semi-structured interviews held over the academic year 2006/07. A summary of main questions provided insight into the following issues:
A. A diagnosis by teachers of issues SD students are facing to introduce readers to the Hong Kong PolyU's tertiary educational context
B. An appreciation of students' understanding of the purpose of planning and vision for design projects
C. An overview of students' understanding of the social and cultural implications of the design profession
D. An assessment of the limitations students have understanding value creation
E. An attempt at identifying reasons behind students' reluctance to commit to their projects and their lack of professional conduct

*The percentage shown at the end of each row represents the level of consensus reached by the sample of 14 teachers on a particular issue addressed during the interviews.