DesignEd Asia Conference 2007

Sustaining Cultures through Design Education

CONFERENCE PROCEEDINGS

Edited by

Lorraine Justice
School of Design
The Hong Kong Polytechnic University

&

Yan Yan Lam
Department of Design
Hong Kong Design Institute

The Hong Kong Polytechnic University
香港理工大學
School of Design

Preface

The Hong Kong Polytechnic University School of Design and the Hong Kong Design Institute are proud to host the 3rd annual DesignEd Asia Conference as a feature event of the highly successful Business of Design Week.

Design education has attracted much attention and recognition of importance among professions involved in design and innovation in the past 3 years. As a unique platform focusing on design education, the goal of DesignEd is to promote design education and research in the region, and to share teaching experiences in different cultures and geographies.

The theme of the 2007 conference is Sustaining Culture through Design Education. Past audiences have indicated that they wish to have more active participation in the conference, and as such we have decided to invite paper presentations this year. The conference committee received a good number of papers from around the world including China, Columbia, India, Italy, Korea, Pakistan, Taiwan, USA, and United Kingdom. Among these submissions we have selected the best 18 to present their views at the conference.

We are pleased to share the presented papers with you here, which are categorized into these themes:

Teaching across cultures

Cultural awareness for design students

Curriculum development and E-learning

Finally, we would like to give special thanks to Mr Victor Lo, Mr Freeman Lau, and everyone at the Hong Kong Design Centre for their help in every way to make this conference a success.

Lorraine Justice
Director and Swire Chair Professor
School of Design
The Hong Kong Polytechnic University

Yan Yan Lam
Principal Lecturer and Academic Leader
Department of Design
Hong Kong Design Institute

CONTENTS

Regional Case Studies

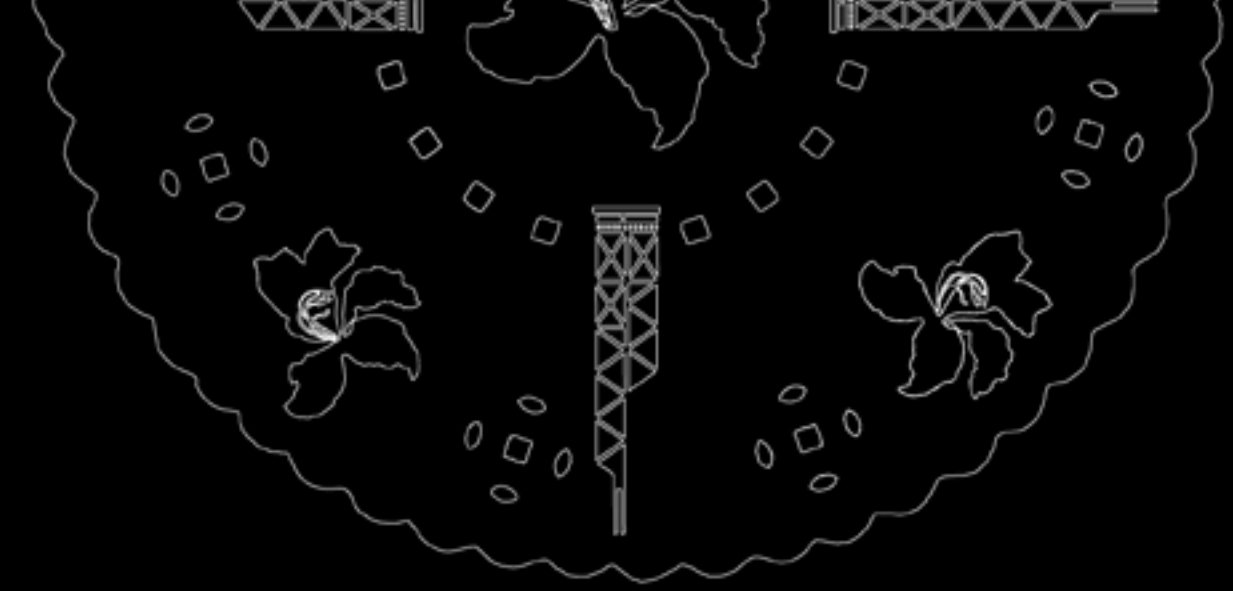
Teaching Across Cultures

Culture

Cultural Awareness for Design Students

Curriculum Development

Regional Case Studies



How Design and Birds of Prey Came Together in Mongolia

John M. Francis

Art Department, Boise State University, Boise, Idaho, U.S.A., jfrancis@boisestate.edu

ABSTRACT

This case study is both a cross-disciplinary and cross-cultural collaborative effort undertaken by a biology graduate student from Mongolia and an American graphic design professor at Boise State University. This project grew out of the birds of prey conservation and research efforts of the Mongolian graduate student, Nyambayar Batbayar. The purpose of the project was to educate and inform Mongolian livestock herders about the function that birds of prey (raptors) serve in the Mongolian environment. Raptors are not "murderers and thieves" but serve an extremely important role in the environment by controlling rodent populations and sustaining the ecosystem. The desired project outcome was not solely an educational effort but also was meant to actively enlist the aid of the herders in the identification and conservation of raptors; a public awareness campaign with a purpose.

Keywords: case study, cross–disciplinary, cross–cultural: Mongolia

INTRODUCTION

Batbayar's primary research area of interest is the Cinereous Vulture of Mongolia (Figure 1). While in Europe the Cinerous Vulture population has been decimated through deliberate poisoning of their food supply and loss of habitat, Central Mongolia has the highest population concentration for this raptor species in the world (Batbayar 2004:2). There are two significant conditions found in central Mongolia that may account for this. First the Cinereous Vulture builds its nests in hilly country where there are rocks and cliffs and secondly the nests are found not far from livestock herds where dead animals can be found for the bird to feed their young. The herders locate in this area because the area has good pasturelands and is near sources of water like springs and wells. Protected lands without livestock herds have lower nesting numbers, success in egg hatching, and survival of the fledglings (Fuller 2007).

Figure 1: Cinereous Vulture

Mongolians are one of the few people in the world who do not regularly persecute these birds; however there are misperceptions about the role of the raptors in the environment. There is a minority of herders who mistakenly think that the Cinereous Vulture and other raptors kill livestock, while the most likely predator of the herd is the gray wolf or a wild dog. The Cinereous Vulture depends on an intermediary like the gray wolf to supply the food source to scavenge.

It requires a predator the size of the gray wolf to bring down a sheep or goat and therefore the survival of the Cinereous Vulture is dependent in many ways on the continued survival of the gray wolf. Not only do the raptors not kill livestock but also they scavenge on dead animals thereby preventing disease and control numbers in the rodent population (Batbayar 2003).

BACKGROUND

Batbayar began his research of the Cinereous Vulture with a six-month visit in 2002 to central Mongolia (Figure 2). During this period he introduced himself to the nomad herders and spoke with them regarding nature and the environment. He informally surveyed the herders on their knowledge of raptors by showing them photographs of different kinds of the birds to see if they could identify and distinguish between the different types. While they could distinguish an owl from a vulture, he found their specific knowledge about the types of raptors and their general knowledge about their environment was low (Batbayar 2003a).

After his initial field research showing herders photographs of raptors, Batbayar conceived the calendar idea as an educational tool for his raptor research. Batbayar had grown up in a herder family during the Soviet era when compulsory education contributed to a high degree of literacy within the Mongolian population. He knew the herders were capable of reading about raptors. Batbayar also knew from living the life of a herder that almost every *ger* (dwelling) had a calendar to keep track of the seasons and additionally the herders were fond of photographs. Batbayar felt a calendar would be well received by the herders into their dwellings for its practicality and aesthetic qualities as well as serve his purposes as an educational instrument (Ibid.). If the herders were given a book or other bound publications as a research tool it would mostly likely end up buried somewhere where it was not visible on a daily basis (Fuller, Ibid.).

Figure 2: Nomadic Herders and Batbayar (top right)

Upon his return to the United States for graduate study, Batbayar submitted a Natural Resources Conservation Education Proposal to the Raptor Research Center at Boise State University's Biology Department. His proposal included using the calendar as a research tool. His justification for the project was based on his observations and the talks with nomadic herders during the six months he had spent in Mongolia. Batbayar proposed that he would distribute the calendar to 50 families of nomadic herders and at the same time conduct data collection based on a series of questions he would develop to assess the level of knowledge about "raptors and their ecology, and the importance of their conservation". It was his intent to return after 2–4 months and survey the nomadic herders again and compare the pre and post data results (Batbayar 2003a).

DESIGN SELECTION

Batbayar indicated in his Natural Resources Education Proposal that along with the advice of Dr. Mark Fuller his graduate professor he would enlist the guidance of an environmental education professor and an "art" professor (Ibid.). Batbayar, through Dr. Fuller contacted the Art Department chair in early 2003 to enquire if any of the

department's professors would be interested in contributing their expertise to the project. There were two of us from the graphic design area who indicated an interest in the project and each of us met with Batbayar and Dr. Fuller to discuss the project.

The project was extremely interesting not only from a content perspective but for the opportunity it presented to collaborate on a cross-cultural project involving design. It was also clear the Batbayar came to the art department with the enlightened notion that a graphic designer could not only provide the technical and aesthetic expertise the project required but that as visual communicators and educators we might bring even more to the project as an instructional tool.

After the initial interviews both of us in the graphic design area indicated we were interested in the project, but felt that it was a one-person design project. We were then asked by Batbayar to make a proposal to determine who would establish the design direction for the project.

My design proposal was based on the pedagogical premise that the more the herders could be involved in the raptor observation and information gathering process the greater their sense of investment in raptor conservation would be. In my proposal I made some suggestions to the calendar concept that I felt promoted more interaction by the herders in their observation of the raptors. In addition to the calendar design I made a suggestion that cards could be printed that would fit in a herder's pocket and would have images and information about raptors for identification purposes. The cards would be a portable component the herders could use while working. My calendar design proposal was chosen by Batbayar and became the basis for the design.

DESIGN PROCESS

After preliminary discussions with Batbayar about the calendar concept and how the calendar would function as an educational

instrument I began the design process. I developed a compound modular/column grid after analyzing the various components that were needed for the design. The grid design needed to be flexible to accommodate the variety of elements; a calendar section, column-structure for the informational text, and provide flexibility in use of image sizes. The overall emphasis in the design process for the calendar was to communicate the information it contained as clearly as possible.

The calendar was to be hung in the herders' ger where space was limited so the calendar's size was a factor. Additionally calendar size was a cost consideration given the modest budget that the graduate student had for the project. The study group that was to be given calendars was composed of 50 families so the number of copies to be printed of the calendar was relatively small (Batbayar 2003b). At the time of the calendar's design the best combination of quality and cost effectiveness for printing was to use a high quality color copier. The calendar's design was further constrained by the paper size that could be accommodated by the color copier.

One important parameter to take into account in the calendar's design was the alphabet for the written language. Although the Latin alphabet is used to a limited extent in Mongolia, Cyrillic Mongolian is the everyday written language of Mongolia and is used on the Internet in that country. Batbayar felt that Cyrillic Mongolian would be the most appropriate alphabet for use on the calendar because of its familiarity.

The contemporary Mongolian alphabet is a modified Russian Cyrillic alphabet plus the addition of two letters. This modified Cyrillic was introduced into Mongolia during the soviet era in 1941 replacing the previous writing system that was based on the script of the Uigurs from the 13th century. The Uigurs were a people who established a kingdom in west China during the mid–9th century that existed until they were conquered by the Mongol empire (Katzner 1975).

Cyrillic like the Latin alphabet has both roman and italic variants. The normal upright Cyrillic is essentially a small caps alphabet, with the

exception of "a," "e," "p," "y," which was adopted from Western lowercase forms. However unlike Latin typography where there is a long history of the upright and italic forms being designed in tandem, Cyrillic italic has been a separate design. Similar to Latin italic designs, Cyrillic italic is based on cursive written forms (Bringhurst 1999).

The first problem I encountered in my calendar design using Cyrillic Mongolian was that the language fonts did not appear to be available at that time for use on the Mac operating system. The complexity of the project design seemed appropriate to the use of a page layout program like QuarkXpress to take full advantage of the application's text and image manipulation capabilities. Batbayar had generated the text for the project in Cyrillic Mongolian for the calendar in the program Microsoft Word on the Windows platform, so I knew Cyrillic Mongolian was available on that platform. Even though I could not place and format text in Cyrillic Mongolian because if its unavailability for the Mac platform in QurakXpress, I could print the Microsoft Word text to paper from a Windows PC, scan it as bitmapped images and place it into picture boxes in the page layout program.

I was able to get around this first obstacle by loading the Mongolian keyboard layout for Windows 2000/NT into a Windows computer that was available in the department's office and was able to access the Cyrillic Mongolian font Arial through Microsoft Word. To establish point size for the informational text on each raptor I took Batbayar's word process document and based on the grid worked out how much space the largest quantity of text would require and still fit within the allotted space. To get acceptable quality from the paper printouts of the Microsoft Word text I enlarge the text's point size and column width proportionally to the final grid's dimensions. This method was used for all of the text that appeared in Cyrillic Mongolian on the calendar, the heads, weekdays and the larger "hint" text that appeared directly above the calendar dates.

The Cyrillic Mongolian font is a version of Arial that has a regular and bold weight so I had some flexibility with use of weight and size in the design. In addition I was able to use a Latin alphabet version of Arial

for the months names and some other information that appears on the calendar.

There were other design considerations as well that impacted on the calendar's design and its information/communicative function. In addition to the color black the earth colors brown and green were selected for the design. A green bar of color appears behind the large type for the name of the raptor and brown is used at the top of the calendar section and also below where the raptor silhouettes are always visible. The calendar was designed in three parts or sections, two of which change according to the month shown while the other calendar part is always visible during any month shown.

TOP SECTION

For each month of the calendar a particular raptor was shown (Figure 3). At the top portion of the calendar is a photograph of the raptor, the raptor's name in large text in black against a bar of green color, text information on the bird, and a silhouette of the bird. The text describes the bird of prey and gives information regarding that particular image. In the example of a nesting Cinereous Vulture the copy describes the bird's coloring, the wingspan, when eggs are laid, the incubation period for the eggs and the important role that the

Figure 3: Calendar top

raptor plays in the environment. The vulture by feeding on dead animals helps prevent the spread of disease. A smaller image is in the lower left corner of the page of the raptor in silhouette during flight or perched is included for each bird for identification purposes.

BOTTOM SECTION

The bottom portion of the calendar has a band of brown color with the month designated numerically in large text with Cyrillic Mongolian (Figure 4). Next to the month indicated is a question or clue that relates to the text information found in the top portion of the calendar. Including a clue for each month was a suggestion that I made as an effort to encourage the herders to interact with the information that was supplied in the calendar.

For instance the herders might be asked when during the month might eggs appear in nests or when might eggs be expected to hatch or fledglings be seen. It might be the answer appears on this month's calendar but the answer could also be written in a later month's space during the time when it actually occurs. The calendar started with the month of July because that was when Batbayar had planned on distributing the calendars to the herders. Boxes were made for each day with space large enough to write their observations. As

Figure 4: Calendar bottom

mentioned previously size was an important consideration in the calendar's design, however having boxes large enough for the herders to write comments in was also important to the project. Although it was tempting to put additional raptor information in the boxes designated for the dates it was decided against doing so. We felt it more important to devote the space to the herders for writing their observations on the raptors.

CALENDAR BASE

Figure 5: Calendar base

At the bottom of the calendar is a large brown color band that is always visible on the calendar (Figure 5). The silhouette and name for each of the raptors featured in the calendar appears in this area. This repetition of the image and name presents a constantly accessible visual guide to all of the raptors that the herders might observe and is meant to reinforcement the silhouette as a mnemonic device.

CONCLUSION

This project offered some obvious and some not so obvious challenges. An obvious challenge for me the designer was working with a written language I was unfamiliar with, Mongolian Cyrillic. A not so obvious challenge was that the content expert Batbayar was in Mongolia doing fieldwork during much of the actual production time of the calendar.

Figure 6: Nomadic herders in *ger* with calendar

Batbayar was not as successful as he would have like to have been in conducting the posttest on his study and collecting follow-up data from the calendars. This was mainly due to the nature of the lives of the nomadic herders who were involved in the study. They sometimes could not be where they said they would be to meet with him to do the follow-up. But ultimately the calendar was an extremely rewarding project when it was completed. It was rewarding not only as a cross-cultural collaboration with Batbayar but through him the Mongolian herders as well. It was an opportunity as a graphic designer to use my design skills, conceptual abilities and educational insights to have a positive impact in the world. Batbayar has indicated that the calendar was well received and that in subsequent years he distributed similar calendars throughout Mongolia (Fuller, Ibid.).

REFERENCES:

Batbayar, N. (2003) Peregrine Fund Mongolian Project Updates—Notes from the Field. Retrieved August 30, 2007, from http://peregrinefund.org/notes_category.asp?category =Mongolia%20Project%20Updates.

Batbayar (2003a) Natural Resources Conservation Education Proposal. Boise: Boise State University.

Batbayar (2004) Nesting ecology and breeding success of cinereous vultures (Aegypius monachus) in central Mongolia. Master's thesis, Boise State University.

Bringhurst, R. (1999) The Elements of Typographic Style (2nd ed.) Point Roberts, WA: Hartley and Marks, Publishers.

Fuller, M. R. (2007) Personal communications with Dr. Mark Fuller of USGS, Forest and Rangeland Ecosystem Science Center, Snake River Field Station, and Boise State University-Raptor Research Center on November 19, 2007.

Katzner, K. (1975) Languages of the World. New York: Funk & Wagnalls.

Globalization Urges Evaluation on Tertiary Design Education: Discourse on the Strategic Planning and Curriculum Reviews in the Higher Education in Hong Kong

Yan-yan Lam[1] and Kung-wong Robert Lau[2]

[1]Department of Design, Hong Kong Institute of Vocational Education, yanyan@vtc.edu.hk

[2]School of Design, the Hong Kong Polytechnic University, sdrobert@polyu.edu.hk

ABSTRACT

Globalization raises new issues, insights and directions on some old issues (McBurnie 2002) and creates new cultural and economic zones within and across the existing nations (Gibbens 1999). In view of education, McBurnie (2002) pays a particular attention to higher education in globalized world that urges necessary changes, share problems and collaborations among global educational communities. The globalization of economics creates opportunities for the mobility of knowledge-workers and knowledge-seekers across the world (Uvali'c-Trumbi'c 2002). According to Uvali'c-Trumbi'c (2000), the ultimate goal of higher educational communities is able to produce knowledge workers who can reconfigure and reshape knowledge in order to serve for regional and global purposes. Regarding the design education in Hong Kong, Professor John Heskett (2005), the

chair professor in School of Design, The Hong Kong Polytechnic University, reminds design educators to pay particular attention in design profession and design study in the future. Heskett foresees that there are THREE main areas of changes in design study in the nearly future, they are (1) what changes are necessary to position design as a practice; (2) what changes are taking place in the context of business; and (3) what changes are functional as potential means of human fulfillment and social improvement. Echo to Heskett, this paper is aiming to explore the fundamental challenges of tertiary design education in the globalized world, with its focus on strategic planning, curriculum development, staff development and academic articulation. Emphasis is given to discuss the (1) impact of 'Globalization' in tertiary design education in Hong Kong; (2) strategic planning of pedagogy in tertiary design education; (3) issues of academic structure and curriculum reforms in Hong Kong; and (4) the needs of multidisciplinary and interdisciplinary approaches to academic structure in design education. This study brought the merit of globalization in education to the fore and considers the challenges that it presents to multiculturalism; the diversity of curricula and national identities remain part of a continuing dialogue in the context of the global community. Researchers believe that the aforesaid issues could trigger the re-consideration on how design education might be restructured in order to promote intercultural cooperation in design profession in globalized world.

Keywords: globalization, design education, multicuralism multidiscplinary & interdisciplinary curriculum design

1. RESHAPING EDUCATION SYSTEMS IN KNOWLEDGE–DRIVEN COMMUNITY

Globalization is the buzzword of the decade, it has reached into every corner of a given society, and it is a generic term. Burbules et al (2000) remarks that 'globalization' is interpreted in many different ways, situations and for different purposes, thus it is not easy to ascertain what is at stake in the globalization issue, what function the

term actually serves, and what consequences it has for contemporary theory, policy, and pedagogy. McBurnie (2002) suggests that globalization raises new issues and throws a new light on some old issues. He indicates the necessity of changes in how the higher education community thinks of itself in the global context and in how it shares problems and collaborates in the search for solutions. In this light, two of the key goals identified by the September 2001 meeting of experts under the auspices of UNESCO are 'to promote education as public good ', and 'to promote quality assurance beyond national borders'.

According to Giddens (1999), he states that globalization brings with it a global awareness of the planetary perspective and enlarges our senses of time and space, which implies a greater sense of community within this global environment. However, Burbules et al (2000) defines globalization as means a certain loss of nation-state sovereignty, or at least the erosion of national autonomy, and, correspondingly, a weakening of the notion of the 'citizen' as a unified and unifying concept, a concept that can be characterized by precise roles, rights, obligations and status. From the above research, theorists find that globalization has involved a fundamental restructuring and reorganization of the world economy and policy in a complex context. They believe that people live in new order of world structure in which communication and collaboration opportunities are expanded among countries.

Gnanam (2002) states in the 'Globalization and Its Impact on Quality Assurance, Accreditation and the Recognition of Qualifications: A View from Asia and the Pacific' (Uvali'c-Trumbi'c 2002) that the globalization of economics creates opportunities for the mobility of knowledge–workers and knowledge-seekers across the world in volumes unprecedented in history. If a particular country has difficulties finding certain professions inland, globalization means that it has increasing opportunities to search for potential candidates wherever they might be available; and if professionals are unable to find a suitable job locally, there are increasingly in a position to look for opportunities internationally. With this enhancement of employment mobility, a major concern will be the quality and standards of the

qualifications offered by educational institutions. In this light, it is crucial to rethink the academic structures, quality assurance, and the diversity of programs of higher education in order to meet the standards internationally.

According to the above discussion, there is a growing challenge of education system in the knowledge-driven community, particular policies for evaluation, financing, assessment, standards, professional training and curriculum design. In confronting these pressures, many studies and research of educational policy and planning are highly demanding among nations, national and international. Thus, in view of these situations, the rapid establishment and development of transnational education is vital in a knowledge-driven world.

2. CHALLENGES OF TRANSNATIONAL EDUCATION IN LOCAL EDUCATION MARKET

UNESCO/Council of Europe (2000) defines transnational education as all types of higher education study programmes or education services that including those of distance education, in which the learners are located in a country different from where the awarding institution is based. Uvali'c-Trumbi'c (2000) states that according to McBurnie's paper (2002), 'Transnational Education, Quality and the Public Good: Case Studies from South-East Asia', the transnational education encapsulates the essential facets of the impact of globalization on higher education. The paper provides the flexibility of globally mobile programmes, operating as tradable services in higher education among countries, facilitated effectively by information and communications technology, innovative delivery modes and partnerships, with demand fuelled by the exigencies of the knowledge-driven economy and the establishment of lifelong learning. McBurnie (2002) believes that in the light of partnerships between institutions globally, transnational education results from merging the interests of both sending and receiving institution. Thus, transnational education is always a positive response to the programs that may not be able to be established nationally, for whatever reason

that might be. Whenever the following conditions apply there are opportunities for transnational education.

Mala Singh (2002) states that, apart from the burgeoning demand of younger people for opportunities in higher education, the up-and-coming demand of older learners for more higher education possibilities is obviously likewise expanding. For instance, mature citizens' expect to enhance their professional knowledge and skills in able to meet the growing demands of the 'knowledge-driven' job market, which consequently has created a huge demands in quality higher education. Accordantly, these education demands are throwing up entrepreneurial initiatives to meet new challenges for lifelong learning within and beyond national borders.

This new market of transnational education is expanding owing to certain developing countries in which their current education and training systems are inadequate to satisfy the local demands of quality higher education especially in the areas of developing new, globally valued knowledge and skills. Therefore, the import of transnational education is conducted within a framework of a conscious choice by local governments with planned regulatory arrangements. Consequently, the transnational education invades the local education systems by providing and expanding the education capacity beyond national borders and the constraints of the state system.

3. CHALLENGES OF EDUCATION REFORMS IN HONG KONG

In view of Hong Kong, the Hong Kong Government addressed that Hong Kong students must seize not only a high level of language proficiency, IT skills, critical and lateral thinking, but also developing their intellectual curiosity to pursue lifelong learning, strength of character to hold up the vagaries of life, and the ability to work within multi-cultural settings in order to enhance their competency in the globalized knowledge-based economy of the 21st century. In response to these challenges and needs of the global market, there

is an urgency to reform the education system in Hong Kong, as announced in the blueprint for education entitled ' Learning for life, Learning through Life', published in October, 2000.

The 2001 Policy Address of the Chief Executive of the SAR outlined THREE goals for empowering the education systems of Hong Kong. The first goal is to upgrade the general standards of academic performances of both primary and secondary students through the current education reforms in order to equip students with the positive attitudes of which learning is unequivocally enjoyable as well as developing their courage to accept responsibility. The second goal is to increase the opportunity of post-secondary study, enabling up to 60% of senior secondary school-leavers to continue studying. Meanwhile, the university system needs to offer more opportunities for outstanding post-secondary graduates. In response to this policy, educational providers from both government and non-government settings have launched many market-free courses to answer this call. The third goal is to reinforce the existing settings of lifelong learning and encourage Hong Kong students actively enhancing and upgrading their knowledge and skills towards the market demands and the tremendous development of the knowledge-driven economy. Professional development and lifelong learning have drawn a far more enthusiastic response from professionals and mature citizens than ever before. In this case, the Higher education system of Hong Kong must offer an optimum range of opportunities in order to upgrade the human capital and increase competitiveness in the global world.

Sutherland (2002) depicts that the Education Commission's proposes to change the present '5+2' secondary school system to a '3+3' system, and alter the present three-year university degree structure to a four-year program in order to achieve the goals for education reform. This structural change of education system implies that the function, content, focus and modes of learning and teaching of the university and professional education will be restructured tremendously. Consequently, the curriculum focus will be put on foundation and generic skills, means the additional first year of study in university.

Regarding the blueprint of the said education reforms, the Education Commission has focused on SEVEN key areas as a starting-point for the reform which includes: curriculum reform, language education, and support for schools, professional development, admission systems, assessment mechanisms and increase offers of post-secondary education opportunities. Our concern here is with curriculum reform, quality assurance, professional development, and increased post-secondary opportunities in tertiary design education.

4. INCREASING THE UNIVERSITY AND POST–SECONDARY EDUCATION OPPORTUNITIES

Hayhoe (2001) indicates that the Hong Kong leaders evince some dismay at the contrast between enrolment rates in higher education in Hong Kong and other Asian cities; For instance, Shanghai and Singapore have nearly 60 percent of young people entering some forms of university and post-secondary education. In view of Hong Kong, we have only 18 percent of same age cohort entering university, and another 12 percent of students are in some forms of short-cycle higher education. Obviously, Hong Kong is lagging behind in the provision of offering learning opportunities in university and post-secondary levels. Dismayed at the contrast and driven by the desire to increase competitiveness, the Education Commission is increasing the opportunities for secondary-school students by providing all secondary students in third level with a place in public funded schools; those who have the ability and desire to pursue their studies further will be afforded the chance to study with subsidized senior secondary school or training placements. To support the progressive increase in post-secondary opportunities, the Hong Kong Government is going to increase by 60 percent the number of planned places for senior secondary leavers whose can access in post-secondary education by academic year 2010–11.

Facilitating the task of increasing the take-up of post-secondary education, the Education and Manpower Bureau is planned a 3-year academic structure for senior secondary school. The newly introduced

academic structure will provide more space for more secondary schools to have their own characteristics and offer diversified curricula, such as creative design, communication, IT, computer software, finance and management.

5. CHALLENGES IN LOCAL DESIGN EDUCATION

In response to these new challenges in reforming curriculum and other academic planning, university and design institutions in Hong Kong, as in many other countries, have to concentrate on evolving a system that is broad-based and quality-oriented in order to merge into the global economy. We believe that the curriculum reviews ought to expand the scope of learning content by introducing integrated and collaborative projects with international industry and other knowledge bodies; developing some new modules to cope expressly with the demands of the global market and reinforce our regional characteristics; and empowering the local cultural studies and Potunghua to match the need of commercial market in China's Mainland.

Following these changes, enhancement is providing choices to students thus enabling us to cater the needs and interests of individuals, at the same time as best meeting the expectations of global industry. Less assured is course continuity of study, the quality of teaching and the specialty of staff. In this case, we reckon that education is not a short-term investment but a long-term quality enhancement in teaching and learning by continuously evaluating the appropriateness of course content towards global market and knowledge-based community. A well-balanced curriculum of generic skills and technology-based training has become a critical issue in design education. From the generic skills perspective, such as research skills and scientific analysis are recommended, particularly essential for foundation studies. From the technology perspective, technology-based skills are highly encouraged not only equip design students with skills in handling professional design application,

but also develop students' senses and curiosity of cutting-edge technologies in various domains.

Additionally, in light of flexible pathways for design studies, a concern for curriculum planning is also consequent upon the phenomenal growth of knowledge and the emergence of many multidisciplinary subject areas. The scope of design education supply has also increased substantially. Computers and computer-related information technology show the domain of new knowledge emerging as a key sector of education. Courses such as computer graphics and design studies, digital imaging and photography, exhibition graphics and environment design, packaging design and 3-D rendering and the like are all examples of inter- and multidisciplinary areas within design studies. In the course of globalization, an education without frontiers will be implemented among developing and developed countries, with the opportunity for an interdisciplinary and multidisciplinary approach to form a new trend in education and the certain consequence that education policy and planning for design education will be affected both locally and internationally.

6. CONCLUSION

This study was rounded off by an account of our experience as senior design educators in order to examine critically how globalization actually influences the education policy making and planning in design education in order to form the knowledge-based economy in Hong Kong.

We are inspired by the fact that the continual rise in excellence in teaching should be a goal shared by universities, institutions, society, stakeholders and the public, as well as governments in this global world. It will remain a subject of debate and discourse within the whole global community. Research into these issues could influence the thinking on how design education might be re-structured in order to satisfy our hopes and desires for an ideal future of the creative industries in the knowledge-driven

world. One of the issues highlighted is that it is a time for design educators, course leaders, policy makers and senior management staff to evaluate the existing school structures, curriculum plans and pedagogies upon these new challenges.

REFERENCES:

Education Reform Report 1 (2001) Education Commission, Hong Kong
Retrieved from (2004/1/2) http://www.e-c.edu.hk/eng/reform/report/forward.html.

Education Reform Report 2 (2003) Education Commission, Hong Kong
Retrieved from (2004/1/2) http://www.e-c.edu.hk/eng/reform/report/forward.html.

Giddens (1999) Globalization. Lecture 1 of BBC Reith Lectures BBC News Online Network homepage 1–6.

Hayhoe (2001) Educational Reform and Higher Education in Hong Kong, International Higher Education, Spring 2001 Retrieved from (2004/3/10) (http://www.bc.edu/bc_org/avp/soe/cihe/newsletter/News23/text011.htm).

Burbules and Torres (2000), Globalization and Education: Critical Perspectives, New York, Routledge.

Uvalic' – Trumbic' (2002) Globalization and The Market In Higher Education: Quality, Accreditation and Qualifications, Paris, France, UNESCO Publishing.

Uvalic' – Trumbic' (2002) Globalization and The Market In Higher Education: Quality, Accreditation and Qualifications, Paris, France, UNESCO Publishing. Chapter 8: Arumugan Gnanam, Globalization and Its Impact on Quality Assurance, Accreditation and the Recognition of Qualifications: A View from Asia and the Pacific.

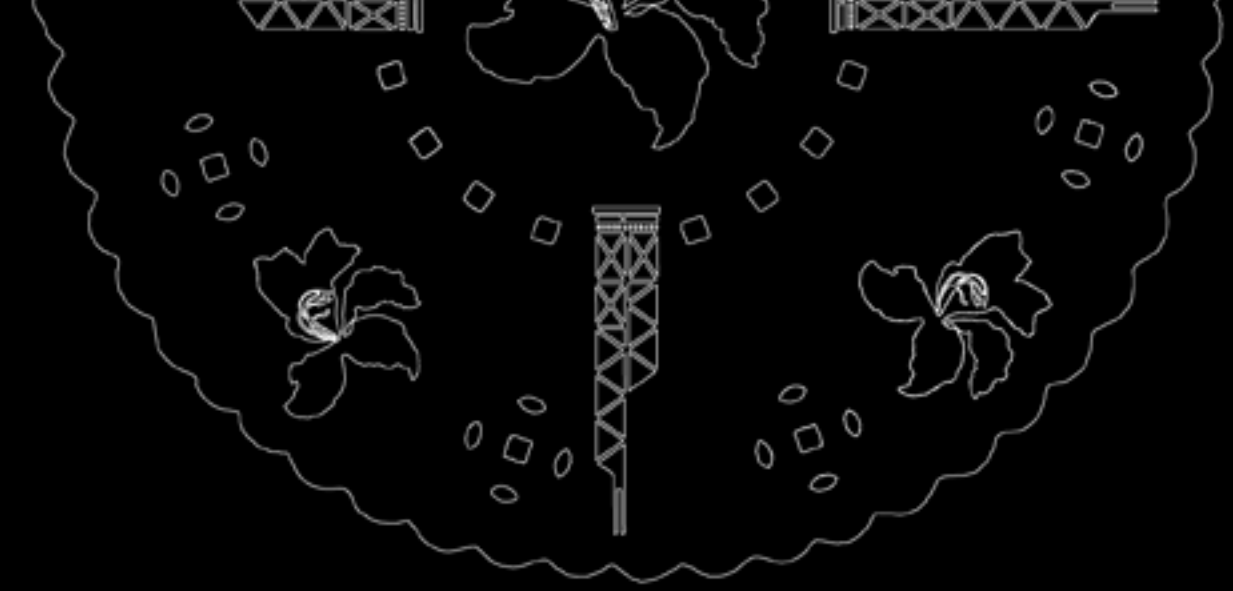
Uvalic' – Trumbic' (2002) Globalization and The Market In Higher Education: Quality, Accreditation and Qualifications, Paris, France, UNESCO Publishing. Chapter 14: Grant McBurnie, Transnational Education, Quality and the Public Good: Case Studies from South-East Asia.

Uvalic' – Trumbic' (2002) Globalization and The Market In Higher Education: Quality, Accreditation and Qualifications, Paris, France, UNESCO Publishing. Chapter 15: Mala Singh, International Quality Assurance, Ethics and the Market: A View from Developing Countries1.

Sutherland (2002) Higher Education in Hong Kong: Report of the University Grants Committee, commissioned by the Secretary for Education and Manpower. Retrieved from (2004/1/2) http://www.e-c.edu.hk/eng/reform/report/forward.html.

Vocational Training Council, Strategic Plan 2003–04 to 2010–11
Retrieved from (2004/1/6) http://intra.vtc.edu.hk/strategic-planning/8-Year/english/home.htm.

Teaching Across Cultures



A Case Study: Teaching Graphic Design Students about Designing a Bilingual Brochure

Sauman Chu, Ph.D.

College of Design, University of Minnesota, U.S.A., schu@umn.edu

ABSTRACT

The primary focus of this project is to address teaching and learning about the design process of creating a bilingual brochure for the Hmong population in Minnesota, USA. Minnesota has one of the highest rates of refugee and new immigrant resettlement. However, most designers have limited experience designing for ethnic groups other than their own. Most design students have not been taught, nor provided the opportunity, to work with audiences from different cultural groups. There is a need for our design students, to learn about the design process of designing information for different cultural groups.

This case study addresses the design of a bilingual brochure for the Community School of Excellence that primarily serves the Hmong population. Through an extensive research phrase, including clients' visits and critiques, students learn about another culture that they had heard a lot about, but that was unfamiliar to them. Ultimately, the students produce a bilingual brochure that serves the community's needs.

Keywords: bilingual design, service-learning, Hmong

INTRODUCTION

The United States Census Bureau shows that more than one million immigrants were granted legal residence in 2006, and over two million between 2004–2005. Many of these immigrants include refugees from different countries around the world. These new immigrants experience many difficulties adjusting to their lives in a new country. In particular, they face language barriers, cultural differences, and religious differences. There is an increasing need for communications that include at least one other language in addition to English. For instance, verbal translation services are provided in many U.S. health clinics for patients who have limited proficiency in English.

During the past ten years, I have worked with different colleagues on research projects that address the issue of bilingual design in printed and on-line publications. These projects primarily target immigrants with limited proficiency in English. One objective is to increase awareness about the importance of providing information in several different languages. Another objective is to increase immigrants' accessibility to information such as health services, housing, nutrition, and education. By using focus groups comprised of Hmong and Somali people who live in Minnesota, we examined preferred and culturally appropriate design elements such as typeface, color, images, and layout (Chu, Martinson, McNaughton, and Lawton, 2000; Chu, Arango, and Yust, 2006). Additionally, we strived to establish effective processes that other designers could utilize when working on multilingual projects.

One of my strategies for integrating research into teaching and outreach efforts is to work frequently with community organizations on service-learning projects. For example, one case study involved working with Ms. Mo Chang, as a community partner, to create a bilingual (Hmong and English) brochure for the Community School of Excellence (Kindergarten through 8th grade). The primary audience for the school's brochure is Hmong families. The brochure is used to advertise the school and it is sent to families in the St. Paul area (where mostly Hmong reside).

HMONG RESETTLEMENT IN THE UNITED STATES

In May of 1975, the Hmong started settling in the United States. According to the U.S. Census Bureau, in the year 2000, there were 183,265 Hmong refugees in the U.S. Those Hmong have settled primarily in Wisconsin, Minnesota, and California. Hmong is the name by which they refer to themselves, but they are called "Miao" in China and "Meo" in Thailand. The U.S. Census Bureau's statistic has been criticized for seriously undercounting the Hmong population, which has been estimated at somewhere between 250,000 and 300,000 people.

HISTORY

Hmong means "free people".

Hmong ancestors lived in China for more than two thousand years where they went through a long history of struggles, wars, and rebellions against invaders and foreign domination. At the beginning of the 19th century, the Hmong migrated into French Indochina, which consisted of Vietnam, Cambodia and Laos. They lived high in the mountains, raising crops and livestock.

In the early 1960s, the U.S. Central Intelligence Agency (CIA) began to recruit the Hmong people in Laos to join in fighting the Vietnam War. More than 80% of the Hmong men were recruited in Laos by the CIA and they joined the U.S. troops in the front lines of the War in Laos (Hamilton-Merritt, 1993). After the U.S troops withdrew from the Vietnam War in 1975, the communists took over the Lao kingdom and the Hmong people became targets of revenge. Abandoned by the United States, fearful of being attacked and losing their lives, thousands of Hmong started to move into Thailand. This marked the beginning of massive migration of the Hmong from Laos. Most of the Hmong refugees settled in the United Nations Refugee camps before resettling in the U.S.

HMONG IN MINNESOTA

Every year, Minnesota accepts thousands of immigrants and refugees from all over the world. Many Hmong refugees have settled in St. Paul, Minnesota, giving it the largest urban Hmong population in the world. According to the census count, about 60,000 Hmong are currently living in Minnesota, and more than 60% live below the poverty line (Yang, 2001). However, Valeeng Cha, director of the Hmong National Organization in St. Paul, believes that the Hmong population in Minnesota is closer to 80,000. Although efforts have been made to educate Hmong residents about the census, many are suspicious of government forms. Also, Cha believes that many Hmong may have missed the census in the mail due to the language barrier (Hughes, 2001).

HMONG LANGUAGE

There was no written text in the Hmong history until the mid–1900s. Many of their stories were passed from generation to generation orally or through images that were hand-stitched on cloth or clothing items. The two most common dialects spoken by Hmong Americans are known as White Hmong and Green Mong. The Romanized Popular Alphabet (RPA) is the most widely used written script; it was developed in Laos between 1951–1953 by three Western missionaries with the help of Hmong people (Chan, 1994).

SERVICE-LEARNING AND DESIGN

Service-learning is an important component of my teaching. For the past ten years, students in my classes have worked with more than 30 non-profit organizations to design various printed or online projects.

Service-learning combines service objectives with learning objectives. It provides a forum of exchange that benefits both the recipient

and the provider through the advancement of values, skills, and knowledge (National Service Learning Clearinghouse, www.servicelearning.org).

As a result of the service-learning approach, approximately 60 student designs from various classes have been published and are being used by various community organizations. Service-learning experiences create a collaborative partnership between students and the surrounding community. Such experiences allow students to understand how design issues can affect individuals or diverse communities in their entirety.

BILINGUAL BROCHURE FOR THE COMMUNITY SCHOOL OF EXCELLENCE

I met Ms. Mo Chang, a Hmong American and a state educator, at a college event that addressed the issue of recruiting minority students to higher education. Because of this opportunity, she learned about my research focus and I learned about her need to create a bilingual brochure for a new school that would open in the fall of 2007. The new school, Community School of Excellence, is a Charter school that serves students from Kindergarten through Grade 8.

BACKGROUND OF THE SCHOOL

Community School of Excellence (http://www.communityschoolofexcellence.org/) is a Hmong language and culture charter school that was founded by educators and community members. The school provides a community-based approach to education that emphasizes high academic standards, integrates Hmong language and culture into its curriculum, and promotes parent and community ownership of the school. One of the distinguishing characteristics of this school is that it fosters global studies by utilizing technology to connect its students to the Hmong in Thailand, Laos and China.

DESIGN PROCESS FOR CREATING THE BROCHURE

The assignment was conducted in DHA Digital Compositions for Design in fall, 2005. The class was comprised of 20 students (17 Caucasians, one Hmong, and two Vietnamese). Most of the students were in their second year in the graphic design program. The project was introduced at the beginning of the semester to allow students – most of whom were unfamiliar with Hmong culture – time to learn about Hmong people and the Hmong community. Ms. Chang and some Hmong students participated in the design process which included informational meetings with students, a field trip, and critique sessions.

I explained to students the rationale for a service-learning project: 1) help students gain service-learning experience; 2) strengthen students' experience of working with diverse clients; 3) promote a partnership between the University and surrounding communities; and 4) help organizations obtain a professional design which they might not otherwise have been able to achieve due to financial constraints.

LECTURE ON BILINGUAL DESIGN RESEARCH

One focus of my research is to examine cross-cultural perceptions of visual elements. In particular, my colleagues and I have conducted studies with the Hmong and Somali populations on their design preferences.

One study focused on a printed publication with Hmong and Somali populations as the primary audience. We conducted several focus group discussions with the Hmong and Somali (in separate groups) and concluded that these new immigrants prefer bilingual printed publications (English and Hmong or English and Somali). We also concluded that font legibility and good contrast between letterforms and background were essential. Regarding the use

of images, we found that image content should be respectful of cultural expectations. In particular, Hmong participants responded unfavorably to images of Hmong immigrants in native dress; such images are commonly found in publications targeted at the Hmong populations. However, the Somali participants responded very favorably to images of Somali immigrants in native dress (Chu, Martinson, McNaughton, and Lawton, 2000).

A second study focused on designing a bilingual resource website for Somali immigrants (http://somaliresource.net). The design process for creating the website (Chu, Arango, and Yust, 2006) provided useful information about how we work with people from cultures that are different from the mainstream culture.

Lectures on the above studies were given to students. The lectures provided necessary background information which enabled students to design a bilingual brochure for a culture that was unfamiliar to them. As an educator, I believe that we need to increase our students' awareness of cultural differences, and provide opportunities for our students to learn about our communities and cultures that contribute to society as a whole.

CLIENTS VISIT

Ms. Mo Chang was introduced to the class early in the semester. She explained her role as the charter school liaison for St. Paul public schools, and a board member of the Community School of Excellence. She then discussed the mission and vision of the Community School of Excellence. She discussed why the school had been formed, and why the school was different from other Hmong-centric charter schools in the area. Ms. Chang also discussed the message she hoped the brochure would deliver. She also provided an electronic document with content (in both English and Hmong) for the brochure.

Since the school was scheduled to open in 2007, there were no existing publications about the school that the students could

reference. Ms. Chang was asked to identify any elements that should be included in the brochure, and to specify the impression that the audience should have when they saw the brochure. The impression that the school will educate students about Hmong cultures and languages was a key element that Chang believed should be included in the brochure. Images of Hmong students should also be included (although, not necessarily in traditional Hmong clothing). It was suggested that key words such as warmth, community-based, and cooperation should be portrayed visually in the brochure. Ms. Chang answered questions from students about Hmong culture and how the layout could convey Hmong's culture by using appropriate color schemes and art motifs. It was also determined that the brochure would be bilingual with Hmong on one side and English on the other. This preferred layout was a finding from my previous research.

The class also met with Ms. Phoua Yang, a member of the board of the Community School of Excellence, who is responsible for the school's curriculum. The entire class period was dedicated to a conversation with Ms. Yang. She talked about the various arts of the Hmong people, as well as traditional objects, dress and language. She showed examples of clothing, embroidery, and books. Ms. Yang also discussed her experience as a Hmong immigrant in the United States. She answered numerous questions that the students asked, including questions about Hmong culture, family and education. She also answered questions more specific to design, such as: popular colors, the meanings of colors, patterns, symbols, and the integration of these elements into Hmong life.

FIELD TRIP TO A HMONG SCHOOL

To further our understanding of the culture of a Hmong school that has students from Kindergarten through 8th grade, we toured a local Hmong elementary charter school. We obtained permission from the school to

take photographs of students and Hmong art motifs that were displayed throughout the school. We also took photographs of the classrooms, hallways (for color inspiration), and Hmong artwork and jewelry.

CRITIQUES

After the field trip, students began the brainstorming stage of the design process. Each student was required to create 10 different rough design concepts for the brochure. During this process, the students solicited feedback from other students in the class, their instructor, and their peers outside of the class. During critique sessions, two different directions were selected for each student. The selected directions were then further developed and refined. As a result, each student had two solutions that they felt represented the school, its goals, ideals, and people.

Students then met with Ms. Chang and Singying Lee (a Hmong undergraduate student at the University of Minnesota) to critique the work. Each student presented the clients with two different solutions for the bilingual brochure. Mo and Singying critiqued each student's work by providing constructive feedback on how to improve the design. After the critique, each student had one piece that he/she needed to work on and revise as the final solution.

FINAL SELECTION

Two weeks after their critique session with Ms. Chang, the students turned in their final brochures. Ms. Chang met with the students again for the final phrase, and provided comments on the overall experience of the project. Ms. Chang, and the Board Members of the school, reviewed the 20 brochures and selected one of them. There was no compensation for the students, because this project was a service-learning experience. Although the decision came after the end of the semester, the student who created the selected design was very willing to provide any requested revisions to the brochure. The

selected brochure was then refined, and its being produced in 2007.

CONCLUSION AND DISCUSSION

Although multicultural and international education have been incorporated into some of the major disciplines at colleges and universities, most design students have not been taught, nor provided opportunities, to work with audiences from different cultural groups.

I believe that this project provides guidance for our design students, about the creative process of designing publications for cultures that are different from their own. In addition, the project provides an opportunity for students to learn, at the early stage of their academic study, about the importance of the research component in design. Thus, it provides a fundamental understanding of the research process for students as they continue their studies through the coming years.

There were essential skills that students learned during the project. They learned how to work within limitations set by the client, and they gained feedback from non-designers. This was significant due to the fact that most people in the audience were not design students. Students gained knowledge by creating design works targeted at multicultural populations. Also, students learned how to avoid the use of stereotypical images.

Client involvement throughout the design process was important to the success of the project. I found it helpful to involve clients in the critique sessions, as well as provide clients with an overall understanding of the design process. As one student wrote in the teaching evaluation, "I really liked that we worked with clients who also came in and reviewed our work".

STUDENTS' COMMENT AND EVALUATION

The students learned a number of things from this assignment. The students all agreed that they enjoyed the assignment, because it

allowed them to learn about another culture that they had heard a lot about, but that was unfamiliar to them. This is fairly indicative of the brochure design process. Quite often, the designer does not know much about the product or the company when starting a project. However, the designer must become an expert on the company and its products (in this case, the school and its mission) in order to create a design that accurately represents the company.

The students also agreed that they learned a lot by working with an actual client who does not have a design background. This disparity can produce difficulties in communication, and the experience helped the students realize that they cannot talk to clients like they talk to graphic designers. Inquiries and statements need to be phrased differently to ensure that both parties have the same understanding of what is being said. As a result of this experience, the students will be better able to communicate and work with their future clients.

COMMENTS FROM THE COMMUNITY SCHOOL OF EXCELLENCE

Ms. Chang concluded that the overall experience was very positive and exciting. She was grateful that such an opportunity exists at the University. She now has a better understanding of the connection between the University and the community, and how faculty disseminates work that serves the community. Ms. Chang believes that it is important for people in Minnesota to learn about the Hmong culture, because the Hmong community comprises significant population in this state.

REFERENCES:

Chan, S. (1994). Hmong Means Free: Life in Laos and America. Philadelphia: Temple University Press.

Chu, Arango, and Yust (2006) A case study: Creating and designing a bilingual resource website for Somali immigrants. Advances in Universal Web Design and Evaluation: Research, Trends and Opportunities. Pennsylvania: Idea Group Inc.

Chu, Martinson, McNaughton, and Lawton (2000) Designing multilingual communications. Journal of Applied Communications, 84(2), 7–28.

Hamilton-Merritt (1993) Tragic Mountains: The Hmong, the Americans, and the Secret Wars for Laos, 1942–1992. Bloomington: Indiana University Press.

Hughes (2001) Hmong population rises dramatically. Minnesota Public Radio. Retrieved November 6, 2007, from http://news.minnesota.publicradio.org/features/200108/01_hughesa_censushmong/.

National Service-Learning Clearinghouse. (2007). Retrieved November 6, 2007, from http://www.servicelearning.org/.

U.S. Census Bureau. (2000). Retrieved November 2, 2007 from U.S. Census Bureau http://www.census.gov/main/www/cen2000.html.

Yang (2001) The Hmong in America: Twenty-five years after the U.S. Secret War in Laos. Journal of Asian American Studies, 4 (2), 165–174.

Teaching Cross–cultural Design in North America

Wendy Wong

Department of Design, York University, Toronto, Canada, wsywong@yorku.ca

Keywords: globalization, cross–cultural design, visual communication

ABSTRACT

Over the past couple of decades, North Americans have founhd themselves living in an increasingly culturally and ethnically diverse society. In response to this explosive growth in diversity, communication and creative industries must become more sensitive to their target audiences. Henry Steiner and Ken Haas's book Cross-cultural Design: Communicating in the Global Marketplace, published in 1995, is one of the earliest graphic design books to address the topic of cross-cultural issues in visual communication.

This paper carries on the spirit of "cross-cultural design" by exploring its applications in teaching at the university level. Using case studies of York University design students' coursework and a workshop for graphic designers, "Design and Cultural Roots," held at the University and College Designers Association (UCDA) Annual Conference in Toronto in October 2007, this study examines the issues of teaching cross-cultural design in North America. Analysis will be made to compare the work by York's students with the exercise done by Caucasian-American participants in the workshop. This study

contributes to the understanding of teaching cultural roots in visual communication design.

What we now term "globalization" or "internationalization" has predominately been a development in one direction, from the developed Western countries to the rest of the world. Not until recent decades have we begun to see this one-way flow of communication begin to change in North America. Asian cultures (e.g.: Japanese, Chinese, Thai, and Vietnamese) are becoming more visible through various channels ranging from restaurants to movies, and among them, the Chinese culture has generated the most attention because of the economic opportunities that China now offers the rest of the world.

With North American societies becoming increasingly diverse, images and representations of ethnic minorities are appearing in all venues and walks of life, especially in the big cities such as New York City, Los Angeles, San Francisco, Vancouver and Toronto. In a culturally diverse environment, the communication and creative industries must become more sensitive to their target audiences. In the visual communication field, the organization American Institute of Graphic Arts (AIGA) began a "cross-cultural design" thread on their website a couple of years ago. Thread topics range from increasing graphic designers' cultural awareness to the pedagogical issues involved in teaching cross-cultural design (AIGA 2007). Henry Steiner and Ken Haas's (1995) book, entitled Cross-cultural Design: Communicating in the Global Marketplace, published in 1995, is one of the earliest graphic design books to address the topic of culture in visual communication in an East/West context.

In their book, Steiner and Haas (1995) gave an outline of tools and methods used in creating "cross-cultural design" for visual messages by mixing and integrating contents and elements from different cultures. Henry Steiner graduated from Art and Architecture School of Yale University with an MFA in Graphic Design in 1957. He worked in Paris and New York on various graphic design jobs before arriving in Hong Kong in 1961 and setting up his company, Graphic Communication

Limited, in 1964. Steiner is the first designer based in Hong Kong to receive international attention and recognition, and is known as the Father of Graphic Design in Hong Kong (Steiner, 1997). In his book, Steiner shared his more than three decades of experience working in Hong Kong, a society founded upon traditional Chinese heritage and yet never short of external influence from overseas, including British, European, American and Japanese.

Steiner's contributions to graphic design history and development cannot be understated and, even more importantly, he has added a new dimension of visual languages in modern Chinese design history after the 1930's Shanghai style. His impact is not limited to modern Chinese design history, but is also part of the "cross-cultural design" creative approach in the global context.

By examining issues of teaching "cross-cultural design" in North America, this paper would like to continue down this same path toward the development of cross-cultural design pedagogy. It examines student coursework containing cultural themes, analyzing the students' interpretations of cultural symbols and reflections on their understanding of the culture that they have depicted in their work. Also, a case study is included of the design for the workshop "Design and Cultural Roots," held at the University and College Designers Association (UCDA) Annual Conference in Toronto in October 2007, in which a majority of the participants were Caucasian-American (UCDA, 2007). This paper will report on the response and summary of this work.

Further study will be undertaken to compare the work by York's students with the exercise done by Caucasian-American participants in the UCDA workshop. By making a conscious effort to integrate different cultural materials into design education, this study contributes to the understanding of teaching cultural roots in visual communication design.

Canada has a strong tradition of embracing cultural diversity, with two official languages (English and French) and special preserved regions all over the country honouring the culture of the First Nation

Aboriginals. Toronto is a city renowned for its cultural diversity, with the 2001 Census reporting that there are 64 first languages being spoken in the city. This diversity provides a perfect environment to study the needs of cross-cultural design. In addition, York University boasts a very ethnically diverse campus and design program, and the University's policy is to honor and encourage diversity through events including its "celebrate diversity" campaign. A four-day event, Multicultural Week, is held annually in the first week of February, and every year about 60 different student associations, ranging from the Aboriginal Students Association, the Sri-Lankan Student Alliance to the Russian Students Federation, take part in the event. This event is an enduring symbol of York's celebration of multiculturalism (York University, 2007).

Within the environment of York University, the Bachelor Honours Degree in Design (BDes Hons) program, offered jointly by York's Department of Design and Sheridan College's School of Animation, is able to attract and accommodate students of diverse ethnic background. The 443 students enrolled full-time for the school year 2007/08 reflect the cultural diversity of both the University and Toronto.

Being aware of the cultural diversity of the student body, the university and the city, course directors in the BDes Hons program are careful to facilitate students with different cultural interests by providing options in course projects. For example, a 1000–level course, Typography 2, includes a project which offers several options on the topic of ancient civilizations, including Native American pictographs, Mayan hieroglyphics, Chinese ideograms, Roman capitals, Arabic calligraphy, early Hebrew calligraphic forms, and Gothic textura. Students are required to summarize their findings in a survey report of approximately 250 words and should use the text in their poster designs.

In Communication Design 2, a course at the 3000 level, one major project requires students to design a promotional campaign for a festival. The project must incorporate English and at least one other language in the design, and students are free to choose their

themes from an existing festival in Toronto or to create their own. Festival themes reflecting a wide variety of tastes have been chosen, including DigiFest, Jazz Festival, Toronto International Festival, Canada Hip Hop Festival, Ottawa International Animation Festival, and so on. Interestingly, students with Asian ancestry are generally more interested than non-Asian students in selecting a festival with an Asian theme, such as Toronto KiteFest for the Korean community, Dragon Boat Festival, Chinese Lantern Festival, and Powell Street Festival (Japanese). It's understandable that students with Asian ancestry links might see this assignment as an opportunity to learn more about their cultural heritage. At the same time, other students can also learn about cultures that they are not familiar with.

The creative directions of cross-cultural design, as shown by Henry Steiner (1995) in his book, include iconography, typography, symbolism, ideography and split image. It is quite rare to find either instructors or students who are aware of this broad range of possibilities in cross-cultural design. The design directions taken by the students in this study are mainly at the level of using cultural themes and icons in their creations, rather than thinking at a deeper level about the environment that they are living in and grew up with.

Most of the students, as seen in the Chinese Lantern Festival by Michelle Lee and Lillian Lau, and Jessica Lee's Dragon Boat Festival, interpreted the theme of their festival in a literal way. Although Toronto is never short on visual inspiration for Chinese cultures, and those students with Chinese ethnic backgrounds do know a bit about their culture of origin, it is very difficult for them to have cultural insight and understanding equivalent to those students who grew up in the Chinese-speaking region. Not surprisingly, their cultural and visual understanding often remained at the surface level.

Other examples, such as Tony Hsu's Powell Street Festival and Ashley Lee's Toronto KiteFest, are trying to take the next step. Powell Street Festival is an annual event held in Vancouver to celebrate the arts and culture of Japanese Canadians and Asian Canadians; compared to the two previous examples, Hsu has made his best effort to study

traditional graphic arts and has successfully mimicked a design with Japanese cultural flavor. Ashley Lee's work for the Korean community in Toronto took a rather different approach. Instead of attempting to make the design look "Korean", she took a different approach by making the event non-cultural, but added a touch of Korean flavor with the inclusion of Korean language.

To employ a cross-cultural design approach, a designer frequently must have very good knowledge of both cultures. Obviously, without conscious guidance, it is very difficult for students to be able to understand the creative strategy of a cross-cultural design. In addition, studies of cross-cultural design issues are very limited and examples of good design using cultural elements are not easy to come by in North America. Materials on teaching the use of cultural elements in the arts and design are also very difficult to find.

The author (Wong 2000) published a conference paper on the investigation of Chinese graphic design theory and pedagogy in 2000. In that paper, I generalized six common creative approaches seen in the graphic design work found in the Greater China region. They are: Re-invention of Chinese Typography; Integration of Bilingual Typography; Formulizing the Mixture of Eastern and Western Images; Rethinking Chinese Calligraphy and Shiumo Painting; Inspiration of Folk Arts and Popular Arts from the Past; and Appropriation of Contemporary Everyday Life Objects. This study provided the possibility of further exploration on cross-cultural design theory and teaching that theory in the classroom context in North America.

In this paper, although it is difficult to see students in Toronto who are fully able to use mature approaches in creating messages for a culturally diverse audience, we can determine the basic foundation that is required for the teaching of cross-cultural design in the global context. First, it is not only required that each student have a thorough understanding of his or her own cultural heritage and the surrounding culture, but it's also necessary to learn intercultural communication skills. The teaching of intercultural communication in the North American context has a famous six-step process, including

Break Assumptions, Empathize, Involve, Discourage Herd Mentality, Shun Insensitive Behavior, and Be Wise. These steps may seem to require only common sense to appreciate, but indeed they are an important first step for the majority of people living in North America.

Although in the past few decades North Americans have found themselves living in an increasingly ethnically diverse society, much of this diversity is still found in the big cities, and the majority of people still live in environments where they lack day-to-day interactions with people of different cultural heritage. This phenomenon is particularly common in the United States. With the following example, I would like to illustrate that cross–cultural design is still in its infancy stage, even though Steiner and Hass's book first published the concept more than a decade ago. I would also like to articulate, for the general public in North America, the importance of learning about cultures outside their country.

In October 2007, I conducted a workshop, entitled Design and Cultural Roots, at the University and College Designers Association Annual Conference held in Toronto. It had about 30 participants, a majority of which were Caucasian American; only three of the attendees were male. In the workshop, I introduced the participants to the relationship between graphic design and culture and followed the teaching up with a short group exercise. Participants were given the name of a country, such as Japan, China, Mexico, Thailand, India and Vietnam, and were then asked to make a list of descriptive words that they associate with the country name given. This task was followed with a question asking where the participants got their knowledge of the given country. Participants were then asked to create washroom signs (men's and women's) for a restaurant in the country whose name they were given. Due to time constraints, these washroom signs could only be presented in the idea sketches stages at the end of the workshop.

When asked about the words that participants associated with each country, each group came up with a list of at least ten words. When asked about their sources of information about that country, participants identified news stories, books, school, mass media and

friends. Many of them had never had a friend with a non-Western ethnic background. The ideas for washroom signs that they came up with can be best explained as the most common images of that given country represented in the United States.

As many of you may have personal experience with American friends, you might share my view that Asians living in Asia definitely have more knowledge on the United States, from history to Hollywood movies. Indeed, we are still living in a world where the flow of "globalization" has always been in one direction. Although we are seeing the possible future changes in the balance of influence and power, led by Japan and China, it will be difficult to break away from the global marketing and distribution infrastructure and network controlled by the United States. Thus, in order to start balancing the cultural influences in globalization, it is important for the Asian countries to be able to make use of the current world communication system and to influence the representations of Asian cultures in the United States. This will involve some very complicated issues and processes.

In the case of York's design students and the participants in the Design and Cultural Roots workshop for UCAD, it is safe to say the York students have the advantage of living in an environment where access to other cultural traditions is not challenging, while some of the workshop participants lack ready exposure to other cultures or simply have not felt the need to learn more about them.

This paper summarized two case studies on teaching cross-cultural design in Toronto. Given that the culturally and ethnically diverse environment is still in its infancy stage in North America, it will take decades for the population in that part of the world to catch up with the amount of cultural knowledge Asian people already have. Design educators could be a part of this effort by promoting cross-cultural design as a required course for students living in a globalized world.

This paper is not yet able to establish any basic framework and tools for teaching cross-cultural design due to a lack of examples and the small sample of students. However, it is possible to start by

encouraging individual students to pursue their independent projects at the senior level. The example that I have here is an independent project by a student who emigrated to Toronto when she was 13 years old. She has competency in reading Chinese. In this project, she wants to create a series of flashcards for non-Chinese readers to learn how to read and write Chinese. The project's creative direction is to integrate English and Chinese in a mixed message to communicate to a non-Chinese reader.

The study of cross-cultural design theory and pedagogy has great potential and urgently needs development. A conscious effort to embrace cross-cultural design theory can contribute to a long-term balance in the flow of globalization. This is particularly important for design students and design programs in Asia, since they are setting an example for the rest of the world to follow.

REFERENCES:

AIGA, Cross-cultural Design: Professional Resources: AIGA. http://www.aiga.org/content.cfm/cross-cultural-design (Accessed November 14, 2007).

Steiner, Henry. (1997). "Thoughts on Paul Rand" in Essays on Design 1: AGI's Designers of Influence. Marsacjm Robyn (ed.), pp. 45–50. London: Booth-Clibborn.

University College Designers Association. UCDA Design Conference: 2007 Design and Cultural Roots Workshop http://ucda.com/workshop_b07.lasso (Accessed November 14, 2007).

Wong, Wendy Siuyi. (2000). Exploring Chinese Graphic Design Theory and Pedagogy. Re-inventing Design Education in the University Conference Proceedings (pp. 395–400). Perth: Curtin University of Technology.

York University. http://www.yorku.ca/yorkisu/new_web/en/events/list/multicultural_week/ (Accessed November 14, 2007).

A Teaching Approach to Support and Develop Student Ownership of Learning in the Design Curriculum

Anthony Williams, Graham Brewer and Ning Gu

School of Architecture and Built Environment, The University of Newcastle, Australia,
tony.williams@newcastle.edu.au

ABSTRACT

There are a number of sources of pressure on professional educators from the design domain to individualise the range of pedagogical and general instructional techniques employed to engage students. This trend has led to a shift from teacher-centred approaches to more student-centred approaches. The applications of strategies to achieve "student centredness" include Problem Based Learning and Project Centred Learning, especially when applied to a "blended learning" context. This is evident in many aspects of teaching e.g. the types of activities in which students engage in the classroom, and the methods of assessment used to assess their learning. This concept of subject individualisation and the encouragement of autonomous learning have for a considerable time been encouraged.

Tendering and entering into binding contracts has been a part of our society for a considerable time. This arrangement may be adapted to pedagogic environments as classroom situations create the potential for entering into contracts. This paper describes a strategy

for lecturers to negotiate learning contracts with students, and was implemented to individualise student learning within a design project whilst at the same time maintaining a focus on the core skill of "design for the environment". Negotiations were based on a supplied pro forma. Students were advised to examine their professional development profiling areas and to select areas in which they would like to acquire more expertise. Over time students develop strategies to fulfill their contract and to meet the specific assessment criteria they selected.

A number of educational systems are moving toward variations of outcomes-based curriculum design and assessment. As students are assessed in terms of outcomes, the assessment conducted is essentially individualized, as students in any one class perform at different levels. The impact of an outcomes orientation on curriculum design and specific student classroom activity is that activities will be designed to assist students in progressing toward the next level of outcome attainment. This level may be different for each student. This implies that each student may be working on different activities, or a different level of the same activity in any class. So the incentive is to design activities, structure curricula, and assess students individually. The learning contract strategy described in this paper represents one of the first formal studies for addressing these emerging educational challenges.

INTRODUCTION

There are a number of sources of pressure on professional educators from the technological domain, including Engineering, to individualise the range of pedagogical and general instructional techniques employed to engage students. This trend has led to a shift from teacher-centred approaches to more student-centred approaches. The applications of strategies to achieve "student centredness" include Problem Based Learning and Project Centred Learning, especially when applied to a "blended learning" context. This is evident in many aspects of teaching e.g. the types of activities in which students

engage in the classroom, and the methods of assessment used to assess their learning. This concept of subject individualisation and the encouragement of autonomous learning have for a considerable time been encouraged, as evidenced in the National Foundation for Education Research (1991), statement:

"The shift in focus implies a shift in teaching and learning strategies away from the traditional transmissive mode of formal lectures towards an emphasis on students' responsibility for their own learning…students would construct knowledge rather than receive it; would do so with greater independence and opportunity to work in small groups and be assessed by procedures which acknowledged the nature and context of their learning".

A number of educational systems are moving toward variations of outcomes–based curriculum design and assessment. As students are assessed in terms of outcomes, the assessment conducted is essentially individualized, as students in any one class perform at different levels. The impact of an outcomes orientation on curriculum design and specific student classroom activity is that activities will be designed to assist students in progressing toward the next level of outcome attainment. This level may be different for each student. This implies that each student may be working on different activities, or a different level of the same activity in any class. So the incentive is to design activities, structure curricula, and assess students individually. Figure 1 provides a conceptual framework for this showing the progression of development as students progress through each of the phases of planning, negotiating, implementing, demonstrating and reflecting on the process.

Research in pedagogy has been encouraging the use of student-centred learning in the classroom. However because of strong didactic teaching traditions in professional education domains, change has been slow despite the opportunities information technology provides.

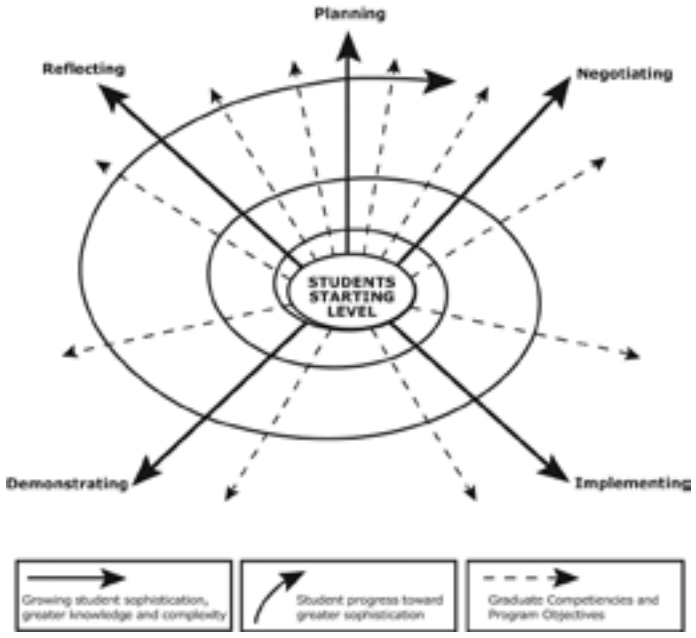


Figure 1: The Learning Contracts Capability Spiral (concept based upon Laycock and Stephens (1994) work

PROBLEM CONTEXT

At the University of Newcastle, a university wide restructure of programmes, as a major rationalisation process, has created a situation where the development and delivery of a course entitled "Design and the Environment" is delivered to a multidisciplinary cohort of students. A wide range of students from the Engineering and Built Environment Faculty enroll in this course. The cohort consists of full-time on-campus students and distance learners who are located at diverse, remote locations (some of which are international). The course is increasingly selected as an elective by students from a range of disciplines including Construction Management, Engineering and Architecture.

The course redesign was underpinned by a number of key principles including:

- The role of a designer should be pivotal in shaping not only the

instant appeal or otherwise of an artifact but also the long-term costs and consequences of owning and operating it, both for the owner/user and for the wider community.

• It should be possible for a student from a particular discipline to define boundaries appropriate to the context of their discipline. This should include:

a) the nature of the environmental impacts,

b) their assessment,

c) the generation of design alternatives that will minimise them.

• The accepted norms for one discipline can reasonably be expected to differ somewhat from those of another discipline.

The last issue posed a challenge to the course designers. Historically the students who took the course as an elective were expected to adopt the norms of the group for whom it was a core element of their programme. However the increasing acceptance of holistic approaches to problem-solving within science and society suggests that the development of a generic, trans-disciplinary understanding of sustainable design is desirable.

Challenges associated with developing a generic template for sustainable design for the multiple disciplines within the cohort included:

- the attitudes and expectations of clients for their services,
- the availability and nature of decision support tools to assist them during the design process,
- the acceptance by the end users (who might be different from their clients) of their designs and the consequences of their design decisions,
- the extent to which it is cost-effective or indeed even feasible to conduct an accurate assessment of the life-cycle costs. This depends to a considerable extent upon the availability of published data regarding the materials being used. This in turn reflects the relative maturity of research being conducted in each of the disciplines, and
- the differences in the nature of the artifacts generated by the

students in the assessment process. Product designers might wish to concentrate on producing a full-size model or even a working prototype, whereas those working in the built environment tend to prefer to generate a documented, graphic model of a built environment.

In summary, the new course has produced environmental generalists who share a common understanding of what it means to be an environmentally aware designer, whilst continuing to address the context of the range of discipline-specific constraints represented by the group. It was quickly recognised that forcing the entire cohort to study a compromise range of material and to undertake an assessment that was tailored to no specific group's needs would be sub-optimal. Such an approach would be both frustrating and disheartening for the students, who might question the relevance of much that they were studying. It is important to note that the student cohort for which the course is a core requirement of study is now the numerical minority.

ASSESSMENT DRIVING LEARNING: THE CASE FOR LEARNING CONTRACTS

It has become axiomatic to say that assessment drives learning (Hedberg and Corrent-Agostinho, 2000), and this is reflected in the design of undergraduate programmes in the School of Architecture and Built Environment at the University of Newcastle in Australia. Here Problem Based Learning is widely used across the disciplines of architecture, construction management and industrial design. Whilst each programme uses unique assessment strategies they all embrace constructivist theory, encouraging each student to create their own knowledge as they solve complex problems (Savery and Duffy, 1994), thus empowering the students to take charge of their own learning.

However, students from other Faculties are more often used to a traditional programme structure where individual courses are based upon content delivery, placing the course lecturer in the position

of "knowledge director", thereby assuming responsibility for the students' learning (Knowles, 1986). In a course where the majority of the students are used to this model of delivery and yet the deliverers are firmly constructivist, the challenge becomes one of finding an assessment mechanism that drives student learning and knowledge creation, whilst concurrently telegraphing its professional relevance.

It was realised that by using careful course design, particularly in relation to assessment mechanisms, it would be possible to accommodate a wide range of different students needs, fulfill the course aims and outcomes, and provide a strong motivation for the students to engage with the subject matter and take ownership of their learning.

Learning contracts have long been recognised as a mechanism by which students can be empowered to take command of their own learning, negotiating a range of matters including topics to be covered, criteria for assessment, and the nature of their assessment product (Knowles, 1986). Yet the strong didactic teaching tradition within professional education has dampened their adoption despite the obvious multi-disciplinarity of the technological domain. Consequently the use of Learning Contracts in the context of professional education has tended to be limited to postgraduate courses and self-directed Continuous Professional Development (Williams and Williams, 1999).

This School had considerable experience of using learning contracts in design courses. Their introduction was in response to student feedback, and their use met with an enthusiastic response (Williams and Williams, 1999). The learning contracts were based upon the principles set out by Knowles (1986) and involved students negotiating:

- their learning goals
- the nature of the evidence to be generated by them
- the means and standards by which their work would be assessed

Such a mechanism was proposed for the course "Design and the Environment".

THE NEGOTIATED LEARNING CONTRACTS

Although the concept of learning contracts is not a new one, it has only been applied in a small number of situations. In recent times the potential of this methodology has been recognised at the tertiary level, though predominantly in the post-graduate domain. In defining a learning contract one has to adapt legal concepts of 'offer' and 'acceptance'. A learning contract is the end result of an ongoing process of negotiation between a teacher and a student with the purpose of developing a learning program that meets both the learning and the teaching agendas. Nevertheless, in the final version of the contract students agree to deliver assessment products that are in principle acceptable to the assessor as appropriate evidence of the achievement of mutually agreed learning outcomes. The contracts typically involve:

"Students negotiating their learning goals, the methods by which those goals will be met, the means by which the achievement of the goals can be assessed, and at what level. "

This process has a strong relationship to the instructional activity of project planning and major project work consistent with the final years of design programmes. Learning contracts, if applied during the early years of a student's experience, provide a framework to support such major project development activities. Benefits are achieved by continuously revisiting learning outcomes or goals, and relating progress to them, which subsequently reinforces learning experiences. This looping process is demonstrated in Figure 1. The diagram not only illustrates the phases of the methodology but extends the concept to demonstrate "growth" of learners in these phases as they participate in this learning process.

THE COURSE CONTENT

The course content was conceived using a systemic perspective of

the design process. This formed the basis for both content selection and course structure. This approach was driven by the idea that the designer was subject to a variety of influences that often competed with each other for attention and predominance, and that (s)he was constantly making decisions that balanced one with another. When drawn as a Venn diagram (Figure 2) it is possible to see that the eventual solution to the design problem lay in a decision space at the intersection of all the influence domains (shaded black). These influences were made explicit in the course outline, and reflected in the course outcomes.

However the novelty of this course lay in the fact that students designed their own learning experiences, including the criteria against which their work was to be assessed. Figure 2 describes a situation where all of the influences are given equal prominence. However the fact that they are set in the context of a learning contract environment indicates that they in turn are influenced by the learning experience. In practical terms this meant that the student was at liberty to choose to assign different weightings to each influence, and to articulate them in their learning contract. Furthermore, the range of issues contained within "each influence" group could themselves be subject to relative weightings. The role of the "Assessment Rubrics" are critical to this phase of the process as they both guide the students in the development of their design as well as assisting them to frame their item specifications to align with the assessment requirements. The first page of the learning contract provides the venue for the students to articulate their intentions through their item specifications and the assessment weightings assigned to each, and this is done through the variable scales with defined parameters to retain the integrity of the course learning outcomes. A completed first page of the learning contract can be seen in Table 1: this was an initial example completed in week 3 by the lecturer to illustrate the principles involved. Later in the course it was used as the point of departure to discuss the ways in which the issues articulated in it could be refined to best reflect the student's research and experiences, and thereby maximise their assessment outcomes.

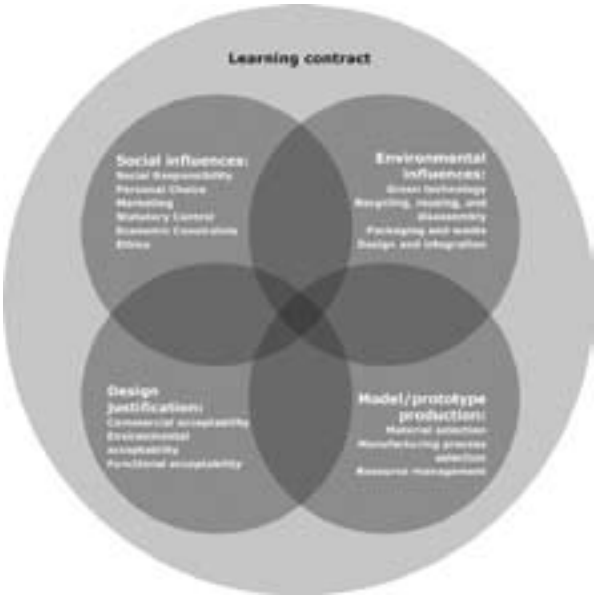


Figure 2: Influences on the Course Design

Naturally, the negotiations concerning the individual learning contract would be conducted with the course coordinator. However it was felt that presentations in a group situation could provide powerful feedback for individuals, and therefore it was decided that a group seminar would be undertaken in the early weeks of the course. Group feedback would help the students understand whether their strategies to achieve learning outcomes were clear, understandable, and achievable. It would also help surface alternative strategies and techniques, both in terms of the learning contract and the assessment product (Knowles, 1986).

The eventual outcome of the students' learning experience, agreed upon with the lecturer, and enshrined in their individual learning contract would look more complex and "messy", reflecting the inherent complexity and "messiness" of real world problem-solving. Above all, each student's solution would be unique, representing their understanding of the issues and the relative importance of each to the generation of a holistic design solution. This would eventually be reflected in the mix of assessment items and weightings nominated by the student in their learning contract.

Once a student had documented what (s)he intended to achieve it was possible for them to propose strategies to make this happen. Due consideration would need to be given to resourcing these outcomes, in terms of human and material resources, tools and techniques, as well as time. The use of project planning techniques, such as Gantt charts and method statements were recognised to be both helpful and appropriate. These would include performance specifications that allowed both the student and the assessor to gauge the extent to which the evidence presented met with the agreed performance specifications.

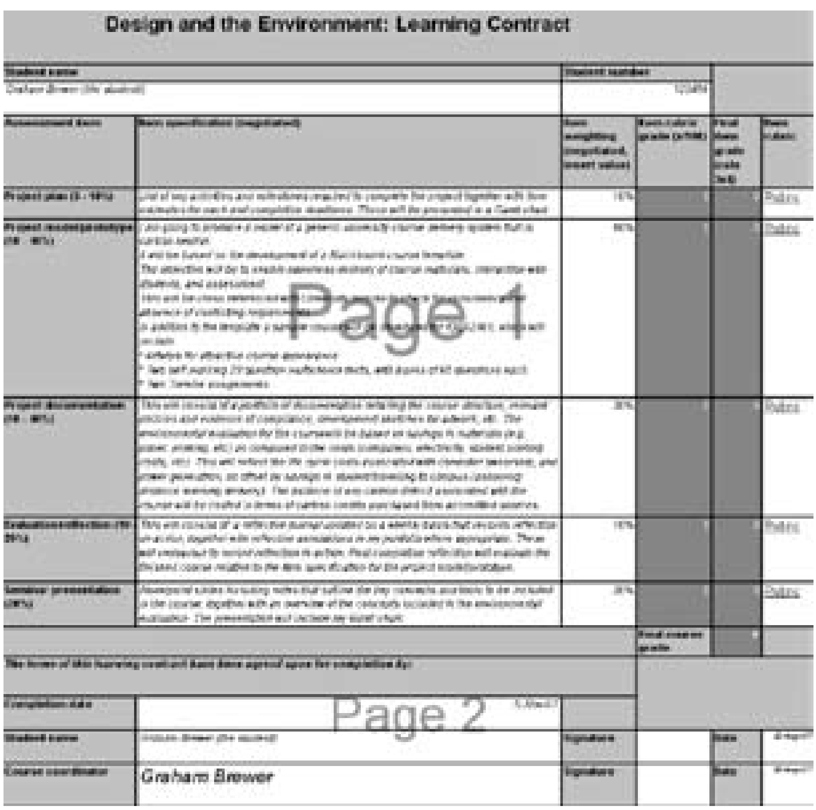


Table 1: Front page of a completed Learning Contract

EVALUATION

This course brought together two novel ideas, namely the development of students' understanding of design and the environment within a multi/trans-disciplinary context, and the use of learning contracts to facilitate their learning and the assessment of its effectiveness. Both of these initiatives have previously been examined for their effectiveness using a combination of student evaluation questionnaires and focus groups (Brewer et al, 2007). Learning contracts were explored in terms of addressing students learning needs, the flexibility they provided confidence to explore new areas, awareness of learning accomplishments, and preferred learning methodology. Trans-disciplinarity was explored in terms of its effectiveness in promoting student understanding of life-cycle analysis as applied to a broad range of manufactured products/built artifacts, and the environmental impact their design decisions. In all cases the students expressed satisfaction with, and approval of the initiatives.

The current course cohort is to be similarly sampled with a pre-exit questionnaire towards the end of October 2007. However, preliminary feedback has been obtained during tutorial discussions as to the effectiveness of the course in triggering student learning and awareness of environmental life-cycle consequences of their design decisions. Noted comments taken at recent tutorials, on the approach to environmental consequences include:

"Oh yes, keep these lectures coming – they're why I took this course – to be exposed to wider issues outside my experience" (industrial design student, on the usefulness of broad ranging topics).

"I didn't realise what there was to it…I mean you hear about Kyoto and its familiar, but what does it really mean? The stuff on the impact of restaurants and food well I mean……I will be teaching that to my kids" (food tech teacher, relating course content to future teaching practice).

"Never mind that, my flatmates are wondering who keeps switching the lights off all the time!" (architect, commenting on behavior change as a result of the course content).

And in terms of the learning contracts:

"It was strange at first but then you get the hang of it. It forces you to think about what you are trying to do" (technology teacher).

"Yes once you understand your way around it, it is quite simple and it lets you know where you are going and what you've got to do" (food tech teacher).

"I think the freedom is the thing I like most about this. Normally we get told what we are going to do and it's all the same" (industrial design student).

From a course coordination perspective the high degree of secondary structure contained in the marking rubrics introduced a high degree of transparency in assessment outcomes. For the students this introduces a degree of certainty and instills confidence in the assessment process.

By way of example it is useful to consider the way in which a prototype car washer that harvests and uses grey water, and a computer generated model of a carbon neutral dwelling may be assessed. In the first instance each student will produce a design brief, define the boundaries to their environmental assessment, identify appropriate environmental assessment metrics, and state what their deliverables will achieve in terms of functionality, quality, purpose, etc. These will be articulated on the front page of their contract, but these statements will have been informed by the performance attributes given to them in the marking rubrics on subsequent pages of the contract (see Table 2 for example). In the case of the car washer the student might simply wish to demonstrate that the idea works, with little regard to aesthetics, or the eventual design of a production version. By contrast the building design will be articulated in a near professional standard computer model that could be used to drive construction of the real building. Once each student has clearly specified what it is that they intend to produce, and obtained staff sign-off on it, they know exactly what it is that they have to do in order to reach a stated performance band. Lecturer approval reflects both

the proposed quality and degree of difficulty involved in the project model/prototype, and will be considered together with the project documentation, which includes the environmental impact analysis for the project. Some students will opt to focus on one area more than the other, and indeed some projects will demand this as can be seen in the earlier examples. In all cases students will be counseled to play to their strengths

Table 2: Example rubric

As a result of student feedback and staff experiences a number of minor changes are likely to be made to the learning contracts for next year. The first involves a reduction in the number of assessable items, achieved by rolling into one both the project plan and seminar presentation, and the project documentation and reflection/ evaluation. The second requires a rewording of the project model/ prototype rubric to remove references to 'production-ready' as this implies that high levels of performance are conditional upon achieving this – something that concept prototypes will never achieve.

CONCLUSION

The use of the learning contracts in this course has proved effective in raising student awareness of the learning outcomes and what is required in their planning to achieve the outcome. Students' initial response is one of concern but by the end of the semester they have responded well to it. It appears that the factor that most influenced the students' acceptance of the learning process was the highly structured assessment rubric. The ability to be able to set different

assessment parameters and see the difference the changes made to their overall assessment profile provided them with a better insight into managing their planning. The concept of the learning contract has provided the flexibility to make a course, which consists of predominantly elective students, both relevant to their context as well as maintaining the integrity of the environmental design content.

REFERENCES:

Brewer, G., Gajendran, T., Landorf, C. & Williams, A. (2007) Educating for urban sustainability: a transdisciplinary approach. International Conference on Whole Life Urban Sustainability and its Assessment Horner, M., Hardcastle, C., Price, A. & Bebbington, J. (Eds) Glasgow, 2007.

Laycock, M. & Stephenson, J. (1994) Using Learning Contracts in Higher Education. London: Kogan Page.

National Foundation for Educational Research (1991) Enterprise in Higher Education, Final Report. Windsor: NFER.

Hedberg, J. and Corrent-Agostinho, S. (2000) Creating a Postgraduate Virtual Community: Assessment Drives Learning. Educational Media International. Routledge. Volume 37, Number 2, June.

Savery, J. R. and Duffy, T. M. (1994) Problem Based Learning: an instructional model and it's constructivist framework. In Wilson, B. (ed) Constructivist learning environments: case studies in instructional design. Educational technology publications. Englewood Cliffs, NJ.

Knowles, M.S. (1986) Using Learning Contracts. San Francisco, CA: Jossey-Bass Publishers.

Williams, A. P. and Williams, P. J. (1999) The Effects of the Use of Learning Contracts on Student Performance in Technology Teacher Training. Research in Science & Technological Education, Vol. 17, No. 2, 1999 193.

Teaching Across Cultures: Developing Team–based Approaches to Promote Creative and Co–operative Learning in Post–graduate Design Courses in the UK

Dr Allan Lawrence[1] and Dr Jo Heeley[2]

[1]Walsall College, United Kingdom, alawrence@walsallcollege.ac.uk
[2]University of Salford, United Kingdom, j.heeley@clara.co.uk

INTRODUCTION

This paper examines the impact of innovative group working within UK design courses at post-graduate level involving students from the UK, Europe and the Far East. The authors propose imaginative new practices in design education which focus on the transversal skills of social learning and cross-cultural communication.

Over the past 10 years the authors have worked together testing and refining a wide range of creativity techniques and experiential learning methods across education, business and the community. This paper explores the innovative learning approaches they have developed as Course Co-ordinators of the Creative Research Methods module within the School of Art and Design at the University of Salford, UK.

The effectiveness of the methods, learning outcomes and benefits are described and discussed in this paper in the form of a qualitative and quantitative analysis from the point of view of the participating

learners. The student responses to the approach taken in delivering this course are discussed with a view to providing future direction for developing transversal skills through creativity and interaction.

FUTURE SKILLS REQUIREMENTS FOR THE KNOWLEDGE SOCIETY

The knowledge society is one where intensified global competition, technological progress and organisational change have driven a shift from manual work to 'thinking' jobs (Bentley, 1999) and towards new economies that are founded on the information and knowledge-based revolution. Besides growth and technological change, the transformation of the nature of work has a deep impact on skill needs as Bernhard (1998) comments:

"What people must be equipped with in an information society goes significantly beyond what is required in a production society, and contains a significantly greater element of key qualifications and social skills than specialist knowledge'"

Employers today are increasingly expecting greater versatility and adaptability. There is a greater need for enquiry and communication skills, social networking skills, co-operative learning, problem solving and skills which focus talents, creativity and social objectives such as participation and social action.

Van Rens (2000) also describes the importance of intercultural and trans-cultural components as individuals will need to communicate both within their own culture and across cultures in a rapidly 'networked' global society. Van Aalst (1999) comments that:

"…the social and communicative competencies which are both part of new demands and which flow from changing work and study contexts are themselves of critical importance for living in culturally, ethically and linguistically plural worlds. These competencies are not simply desirable; they are becoming essential to all."

CONCEPTS WITHIN COURSE DEVELOPMENT

The authors propose that the role of the teacher will increasingly be viewed as a 'learning facilitator' for a range of processes more akin to project-based learning, self development and problem solving within the knowledge society. With this view in mind, the Creative Research Methods programme developed by the authors aims to assist learners to accelerate and develop appropriate skills for the knowledge society, namely creativity, social interaction and effective communication skills. The course is delivered using facilitated creativity techniques, experiential learning methods and, group-based exercises.

The course has been jointly run by the authors since 2004 and is currently offered to the following post-graduate degree schemes: MA Communication Design, MA Creative Technology and, MA Creative Games. The module is delivered within the School of Art and Design at the University of Salford in the UK, which has over 1100 students studying from foundation year to PhD level. The university as a whole has one of the largest populations of international students in Europe. Each year on average there are over 1000 international students from 100 countries, providing a diverse cultural mix.

The module runs over the first semester from September to December, lasting twelve weeks, and introduces and develops a range of research methods considered appropriate to design practice. The course is presented using class exercises, tutor presentations to deliver the theory elements, handouts, group tutorials and online support. Students have the opportunity to practice different research methods first hand such as interviewing, designing questionnaires and observational studies. On completion, students will have developed the ability to develop an understanding of practical and theoretical issues relating to undertaking and successfully completing research project, the outcomes of which are a written report and a group presentation to their peers and course leaders.

Students are required to work in groups and select a topic of research for more in depth consideration. Tips are presented for effective

group work and time and project management so that students can subsequently analyse and draw on individual strengths and weaknesses. Brown (1994) comments that small groups give students opportunities to practise conversational exchanges and 'face to face give and take,' that would not be possible in other types of activities. The educational benefits of students working co-operatively in groups are well recognised. Among other things:

- studying collaboratively has been shown to directly enhance learning;
- employers value the teamwork and other generic skills that group work may help develop; and,
- group activities may help academic staff to effectively utilise their own time.

Working in selected groups, students have to formulate a research question and a plan to undertake a small-scale research project. In the first few weeks of the module, a three hour creative thinking workshop takes place to facilitate ways the student groups can share common interests and work collaboratively. Bailey (1996) supports the idea of learners combining to share ideas. Brainstorming and visualisation methods are used, illustrated in Figure 1 below, to help facilitate idea generation and refinement of a suitable research question.

The creative thinking workshop also encourages team building. Throughout the module students are encouraged to present and discuss their ideas in order to develop their presentation and communication skills.

Students are encouraged to use visual methods of data gathering and analysis such as sketching, photography and video recording, in order to make connections between their work in a 'studio' context. The observational sheet shown below (left hand photograph) is from a group project undertaken in 2004, which examined the 'educational effects of furniture in primary school classrooms'. The students spent time in a classroom of children, aged 7–9 years, 'sketching' how the children interacted with the furniture. They combined the work

Figure 1: Student groups during the creative workshop session, developing and discussing their ideas for a group research question

on this module with another design module and developed new concepts for classroom furniture. Another student group project in 2005 investigated, 'the emotional responses of players during violent video games playing.' Participants in the study were filmed whilst playing video games, and their 'responses' were captured by video and 'observers' shown in Figure 2 below.

Figure 2: Students using data capture methods such as sketching and video recording

Students work with a professional actress to work on voice training and presentation techniques to prepare their final presentations. They are encouraged to view this as a 'job interview situation,' or as 'a presentation to a design client.' The authors believe this is an important learning experience, enabling students to become more 'effective communicators' as well as encouraging them to become more 'job ready.'

The Communication Design group in the left hand photograph below in Figure 3, 'branded' their presentation with their own group name, logo and even matching ties.

Figure 3: Student groups during the final group presentations

The photograph above shows the course tutors with a student group in 2005, indicating the cultural mix of students as well as the 'professional' way students are encouraged to prepare for the final presentation session, evident in their attire.

ANALYSIS OF STUDENT VIEWS

The student responses to the approach taken in delivering this course are now discussed, focusing on the effectiveness of the approach, learning outcomes and, the benefits to the participating learners. The sample comprises 109 students across 21 student groups who attended the Creative Research Methods module from January 2004 to May 2007. The information that forms the basis of this analysis originates from three key sources:

- tutor marking sheets and final assessment spreadsheet;
- student evaluative questionnaire;
- student peer and self assessment forms.

The latter two forms are completed by students at the end of the module. The 'student evaluation questionnaire' asks students to assess the course and asks crucial questions regarding satisfaction levels; whether the student would recommend the module; what the student liked and disliked about the course; and criticisms and recommendations for improvement.

The 'student peer and self assessment forms' ask similar but more detailed questions, as well as requesting the students to score themselves and their other group members in terms of their contribution to the total group effort. The students are also asked to describe their role in the group research; any problems experienced and how the group overcame them; what was most enjoyable about the project; what was learnt and finally, the benefits gained.

Table 1 below shows the criteria developed for the peer assessment scores. Students were requested to score each other in terms of their Attendance and Co-operation; Academic Contribution and Overall rating resulting in a maximum score of 15.

With regard to the peer assessment process, where the group members have similar Peer Assessment scores this is considered to be a functional group (F), and where there is variance between the group scores then this group is considered to be dysfunctional. Groups were also classified as functional (small SD below 3.0 and/or a Mean above 9.0 based on the marks awarded within the group peer assessment) or as dysfunctional (high SD above 3.0 and/or a Mean below 9.0 based on the marks awarded within the group peer assessment); D-1 where one group member is scored 33% below others in the group and; D-2 where two group members scored low peer assessment marks below 33% of the rest of the group.

Attendance and Co-operation Scale:
5 = Was a team leader; co-operation superior
4 = Attended meetings regularly; good co-operation; a teamplayer
3 = Attended meetings fairly regularly; did what was asked but no more
2 = Missed some meetings and did the minimum amount of work
1 = Poor attendance at meetings/or poor co-operation and work share

Academic Contribution Scale:
5 = A team leader in ideas; enthusiastic; a lot of good ideas
4 = Contributed greatly to the team; did more than his or her fair share
3 = Had good ideas from time to time; an average performance
2 = Probably was neither too quiet or not interested enough to be an effective academic contributor to the team
1 = Contributed little to the team

Overall Comparative Rating Scale:
5 = The team leader (or a team leader, if more than one)
4 = A team player; excellent work
3 = An average member of the team
2 = Slightly below average member of the team
1 = Contributed least to the team

Table 1: Criteria for Peer Assessment

RESULTS FROM QUANTITATIVE ANALYSIS

This section of the paper presents the results of a quantitative analysis of the 'peer assessment scores,' completed by 109 students in 21 groups, during a three year period from January 2004 to May 2007. The groups have been classified in terms of:

- group size;
- mixed (students from different national origins in the group);
- all EU (students classified as UK or EU Nationals);
- selected versus self selecting groups;
- functional or dysfunctional groups.

Of these 21 groups, 13 are classified as functional (62%), and 8 (38%) had one or more dysfunctional group member. These groups were classified as D-1 (one under-performing member), D-2 (2 under performing members). On rare occasions the groups are classified as D-3 (3 or more under performing members). Whilst 38% of groups were considered dysfunctional, the majority were able to manage the group dynamic to reach a satisfactory outcome. Where this was not the case, then the students concerned had a negative view of group work and failed to achieve their research objectives and their own potential in an effective way.

Self selected groups were 10% more effective in terms of mean final marks awarded compared to D-1 and D-2/D-3 groups (67% cf 57.9%)

Mixed groups (EU and Asian students) perform better than 'All EU' groups. Mixed groups are 85% successful (staying and working together as a group) compared to All EU groups (14%).

A graphical representation of this statistical data reveals some interesting comparisons. Figure 4 following shows the higher the standard deviation, or the lower the mean of the peer assessment (PA) scores – the lower the mark achieved by the group, showing clear measures of group dysfunctionality.

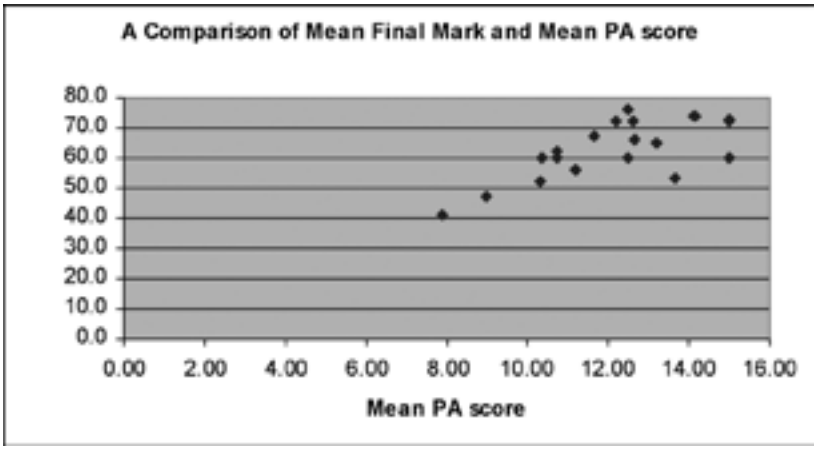


Figure 4: Graph showing the relationship of Mean Final Mark to the Mean Peer Assessment score

The graph in Figure 5 following shows that functional groups score a mean assignment mark of 66.3%; groups carrying one member (D-1) score a mean mark of 64.5% and groups carrying two or more members (D-2) scored 48%

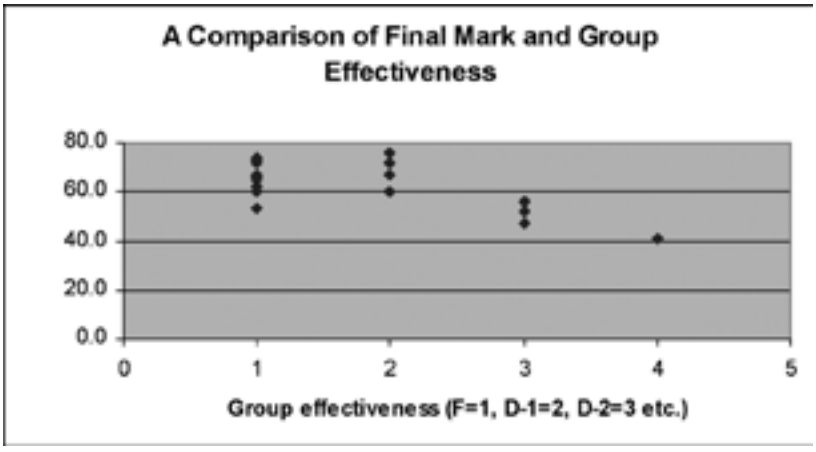


Figure 5: Graph showing the relationship of Mean Final Mark to Group Effectiveness (Dysfunctionality)

There is a small variation between the Mean marks obtained by Mixed Groups (64.4%) and All EU groups (59.6%).

Groups that are self selecting are 80% functional compared to 20% of those groups that were chosen by tutors or asked to accept latecomers.

Figure 6 following shows that group size has little significant effect on dysfunctionality; functional groups have a mean group size of 4.45, compared to 4.8 for D-1 groups and 5.25 of D-2 groups. There is some suggestion that the bigger the group (more than 4) the more likely the group is to be dysfunctional.

The following conclusions can be drawn from this quantitative analysis of student responses:

- Self selected groups were more effective in terms of mean final marks awarded compared to D-1 and D-2/D-3 groups;

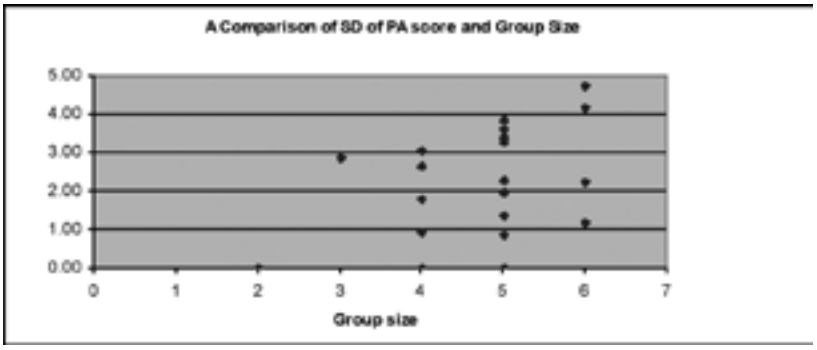


Figure 6: Graph showing the relationship of the Standard Deviation of the Peer Assessment Score and Group Size

- 'Mixed groups' (EU and Asian students) perform better than 'All EU' groups;
- Groups carrying two or more members (D-2) achieve much reduced assessment marks suggesting that where one group member is under-performing, remaining group members are able to undertake effective remedial action through negotiation and/ or re-assignment of the tasks amongst willing team members;
- Groups that are self selecting are four times more likely to be functional compared to those groups that were chosen by tutors or asked to accept latecomers;
- Group size has little significant effect on dysfunctionality; functional groups have a statistically smaller mean group size compared to dysfunctional groups.

KEY ISSUES IDENTIFIED

A qualitative analysis of the student evaluative questionnaire completed at the end of the module provides some rich, anecdotal evidence. The following positive and negative aspects of the course were identified:

POSITIVE ASPECTS OF THE GROUP WORK APPROACH

WORKING WITH STUDENTS FROM DIFFERENT CULTURES

Overall, students welcomed working with other students from different cultures and backgrounds and group work provided an opportunity for cross-cultural communication. Most groups developed an understanding between group members although sometimes linguistic and cultural differences were beyond resolution although these situations were rare.

We shared our knowledge and work[ed] to our strength and weakness ……
Khalisah, 2006

The fact that being in a group is more challenging because you have to learn to work with different people; Being from different countries, it was very interesting to discover more about each culture …..
Giulia, 2007

I am an International student, knowing everything and studying is always a problem for me. I overcome that because I had good group mates who were helpful to me.
Balamurali, 2005

THE OPPORTUNITY TO WORK AND LEARN IN A GROUP

Most students enjoyed the opportunity to work and learn in a group; the chance to get to know people on their course better, as well as meeting new people from other design courses. Students also enjoyed the creative approach to research, although a few commented that the module was not creative enough. Student

groups designed communication platforms; their own chat rooms and/ or web sites or used open access software such as Google Groups, MSN, Myspace or Facebook. The ability to edit documents on-line, in real time and collaboratively with equal access was seen as a key success factor to ensure group cohesion. As the student groups comprised part time and full time students setting up effective communication platforms to share ideas and develop reports and presentation material were viewed as essential.

I have learnt that working with a group of people is hard work. Having to overcome problems such as time management and people management has taught me a lot….
Jon, 2004

What I enjoyed most was the co-ordination between all team members, everyone worked hard for a common goal. The sum of all parts was one coherent and structured final report.
Elsa, 2004

LEARNING AND DISCOVERING NEW SKILLS AND QUALITIES

Students commented that they discovered personal strengths and skills, gained confidence and self esteem and developed a range of new skills including: research skills, planning and time management skills, and presentation and communication skills. There is evidence that the students developed the transversal skills of cross cultural communication and understanding, social and networked learning, research and creativity and very much welcomed the opportunity to do so.

(I enjoyed…..) working as a team. The focus group was great fun! It was great to see how planning and teamwork can generate results.
Tamar, 2005

(I have learnt…..) confidence and speaking in public…with practice and help from (……the teachers).
Jin Shuo, 2005

NEGATIVE ASPECTS OF THE GROUP WORK APPROACH

THE FAILURE OF THE GROUP TO PERFORM COLLECTIVELY TO REACH A COMMON GOAL

Some groups commented that there was a lack of shared commitment, with some group members proving to be unreliable and absenting themselves from the process. This in turn was both the cause of, and the effect of, arguments and personality clashes. In some cases, international students were excluded by language and communication issues. To ensure support and acceptance from other group members involves all in a participative approach to group selection.

I've realised that even at this level of study, some people need to be led by the nose and it is best not to rely on others…….
Kate, 2004

These arguments and personality clashes often arose because of perceived 'free riders' within the group or where objectives were not agreed or shared within the group.

CHOICE OF GROUP MEMBERS

The right choice of group members was viewed as critical to the completion of a successful project. Many respondents felt it was essential to choose team members carefully by getting to know them first. One particular year the groups were selected by direct teacher intervention which proved to be counter-productive to three out of the five groups. There have also been instances where latecomers have been added to existing groups and this too has proved difficult to manage. Self-selecting groups are clearly more effective and more supportive; they score higher final marks and are four times more likely to result in a functional and effective group.

TIME AND PROJECT MANAGEMENT

Groups were sometimes insufficiently disciplined to reduce the research project to a manageable set of tasks, creating themselves too much work. Good time management was often a critical factor with groups struggling to meet deadlines because of over-ambitious targets. Some students complained that the course was too project specific although the majority welcomed the opportunity to work in such a way. Learning from this experience, the tutors hold regular guided tutorials to ensure the projects don't get too ambitious.

GROUP MARKING SCHEME

The marking scheme allocated one mark for the whole group (30% for the presentation, and 70% for the written report). This was seen as unfair and demotivating by students forced to work within a dysfunctional group. Often remedial strategies were needed to maintain the group cohesion which detracted from the task in hand. Following student feedback the marking scheme has now been altered to include an element of peer group assessment of the individual performances within the group, which is 20% of the final mark.

FURTHER QUALITATIVE ANALYSIS: FOUR GROUP CASE STUDIES

The following four case studies provide further useful insights into the learning experience from the perspective of participating learners. Two of the groups are considered to be functional and; two groups were dysfunctional.

CREATIVE GAMES AND CREATIVE TECHNOLOGY, 2006: PROJECT TITLE: 'YOU ARE WHAT YOU PLAY: A STUDY OF GAMES AND PERSONALITY TYPES'.

This D-1 group was made up of four group members (from P.R. China (2 members), USA and UK) and from different design disciplines who produced a good report and presentation to achieve a mark of 68%. Nevertheless, it was felt that one group member was not fully committed to the project by two other group members resulting in more work for those remaining. The following comments highlight that not all group members were happy to undertake extra work to support other team members.

We shared our knowledge and work to our strength and weakness ……

(I have learnt to…) talk to people when it's needed.
Khalisah, 2006

(I enjoyed….) Doing research about an interesting topic, acting as part of a team, taking advantage of my skills.

One of our team members wasn't acting as an active part of the group. So we talked to him and then to our teachers. He then showed a real desire to participate.
Geoff, 2006

Only had three team members capable of doing work, had to put in extra work. Scope was overly ambitious, resulting in data that was beyond our ability to interpret in some areas.

GROUP: COMMUNICATION DESIGN STUDENTS, 2007. PROJECT TITLE, 'TO INVESTIGATE HOW VISUAL COMMUNICATION IS ADAPTED ACROSS CULTURAL BOUNDARIES, FOCUSING ON WOMEN'S FASHION MAGAZINES'.

This functional (F) group was made up of five group members (from P.R. China, Taiwan, UK (2) and Italy) who worked effectively together to achieve a mark of 72% and who formed a closely knit, cohesive group.

(My role was….) a team player, part of the whole team.

(I have benefited from…) to learn how to work with group members, especially when they are from different cultures. To know how to make an agreement when we have different opinions.
Fang Zhou, 2007

The fact that being in a group is more challenging because you have to learn to work with different people; Being from different countries, it was very interesting to discover more about each culture …..
Giulia, 2007

GROUP: GRAPHIC DESIGN AND CREATIVE TECHNOLOGY, 2006. 'AN EXAMINATION OF CULTURAL RESPONSES TO THE TV PROGRAMME, MONKEY KING'.

This functional (F) group was made up of three group members (from P.R. China and UK) and from different design disciplines who chose an esoteric topic exploring cross-cultural understanding and who worked effectively together to achieve a mark of 74%. They formed a well organised, cohesive group.

Figure 7: Initial ideas presentations using the visioning method

The photographs above show this group presenting their initial ideas for their research question to the tutors developed using the visioning method. The group wore co-ordinating outfits with their own designed logo and badges for their final presentation. They were keen to exploit their different skills sets to try out some different research techniques (film making and graphic design), and to explore their cultural differences through the chosen subject matter, 'the monkey king' TV programme.

(I enjoyed…) the chance to work with new people and consider different ways of using video. (I have learnt…) presentation skills and data analysis techniques.
Carl, 2006

(I enjoyed….) uncovering (sic) the cultural aspects of Monkey and working in a group.
Mark, 2006

I feel more confidence by doing the research. I learned more knowledge from the course and I [have]build my confidence of communicating with people who come from different cultures. .
Wei Wang, 2006

COURSE: CREATIVE GAMES AND CREATIVE TECHNOLOGY, 2006. 'EXPLORING THE EFFECTIVENESS OF CREATIVE SOFTWARE PROGRAMMES IN SCHOOLS'.

This dysfunctional (D3), selected group (chosen by the tutors) was made up of five group members (from UK (2), Libya and P.R. China (2) and from different design disciplines. There were problems with group cohesion, planning and agreement on objectives and methods of research. The result was a testing experience for all concerned and resulted in a relatively disappointing final mark of 56%.

(Problems….) Communication from week 1. Group member left to form other groups due to not understanding.
Theo, 2006

(What have you learnt?) To make sure there is an understanding of the aim – no confusion. … To choose carefully the people that I work with.
Ruqaiyah, 2006

In fact, if I get one more chance to do group work, I will talk more than this time. I found, keep silent in a group is not a good thing.
Zhao Jin, 2006

I met a communication problem of study direction of objectives…I think it is a good thing when some arguments happen in a group, but I don't like when someone refuses to discuss.

Yes, I enjoy this research project deeply …… I have understood that good communication is a very important aspect in doing research in a group. I know I need to improve my skill in this respect.
Shen Sheng-Po, 2006

CONCLUSIONS

The following conclusions can be drawn from this detailed analysis of student responses:

• Overall, groups of mixed origin appear to work better than those of UK/EU origin;

• Mixed groups (33%) have chosen research projects which contain a cross-cultural theme and through an audit of their available skills, have made a positive attribute out of cultural difference and diversity;

• Mixed groups may utilise a greater use of language, for example, taking more care to ensure clarity of meaning and avoiding offence, whereas perhaps an all EU/ UK group would make greater assumptions about language ability;

• Effective cross-cultural communication within groups requires self selection; effective and democratic communications; empathy and respect for each others background, including linguistic origins; skills; attendance mode; external commitments and design background;

• Finding a topic in common is crucially important and the use of group brainstorming techniques which encouraging collective thinking, and choosing the right group members is essential to avoid later resentment;

• The use of electronic platforms such as Google Groups, Facebook, myspace and MSN or web sites is an essential success factor for groups to aid ongoing communication, to share thoughts, provide discussion platforms and to progress written reports and the group presentation.

LESSONS LEARNT

The following observations are made with a view to providing future direction for developing transversal of social learning and cross-cultural communication through creativity and interaction:

• It is important that groups are allowed to self select (form/ storm/ norm/perform) and clearly the imposition of group members clearly has a negative effect;

• Groups develop synchronous and asynchronous electronic platforms to aid communication. This is a very effective strategy as every group that has produced a website for communication or used an existing electronic format has (a) achieved high marks or (b) remained functional or overcame dysfunctionality;

• Effective groups emphasise the importance of empathy and a willingness to listen to and support other group members;

• Effective groups make a virtue of utilizing the different skills at their disposal. Cultural diversity is simply an extension of this – different cultures in a group gives that group an opportunity to explore their cultures in a supportive and collaborative framework;

• Effective cross-cultural communication requires understanding, acceptance and adaptation to other cultures. Joint participation in decision making and fair and equal access to resources and support is crucial to a successful project outcome.

REFERENCES:

Bailey, F. (1996) The role of collaborative dialogue in teacher education in Freeman, D and J. Richards (eds) Teacher Learning in Language Teacher. Cambridge: Cambridge University Press.

Bernhard, Walter (1998). Key qualifications and competences – curriculum implementation, framework conditions, strategies, marketability, vocational training and general training. CEDEFOP, Thessalonikki (1998). http://www.berufsbildungsfonferenz-1998.vie.net/forum1_engl.htm.

Brown, H. Douglas. (1994) Teaching by Principles. An Interactive Approach to Language Proficiency. Upper Saddle River, N.J, USA: Prentice Hall Regents.

Seltzer, K and Bentley, T (1999). Creative Age: Skills for the Knowledge Economy. DEMOS publication, UK.

van Aalst. H. (1999). Learning in the Network Society. Vocational Education and training in the Information Society. Keynote speech for the 8th EfVET Conference, Odense, Denmark.

van Rens. J. (2000). Learning and Training for European Citizenship: Keynote speech for the 9th EfVET Conference, Thessaloniki, Greece.

The 'Social' and 'Cultural' in Graphic Design: Case Studies from Design Postgraduate Research

L.K. Chan[1] and Raymond Donovan[2]

[1]College of Fine Arts, University of New South Wales, Sydney, Australia, l.chan@unsw.edu.au
[2]National Centre in HIV Social Research, University of New South Wales, Sydney, Australia, raymond.donovan@unsw.edu.au

ABSTRACT

The discipline of graphic design belongs to the wider field of visual culture production in society. By defining 'culture' as an inclusive term which refers to 'any aspect of daily life relating to a social context', how can a designed artefact communicate its meaning in terms of use and in a way that will make sense to the user in a given situation? This paper's critical point of departure is that the design/representation relation is not static. The textual and visual dimensions of graphic design should be theoretically positioned within broader cultural formations, historical contexts and social constructions. The paper discusses the methods of addressing social and cultural perspectives as a focus in design research via case studies in postgraduate research supervision and training, and the curriculum design of an elective subject for an online Masters programme.

1. INTRODUCTION

Conventional approaches to the history of graphic design focus on the aesthetic achievement and influence of key artists/designers and/or art movements and view the artefact as neutral in isolation from the agency which produced the design and the intended consumer (Hollis 1994, Meggs 1983). Dilnot (1989) says: "…[D]esigned forms possess no intrinsic value. Their import and significance is not given by their designer status but is achieved because of what can potentially be won from them in terms of evidence and in terms of understanding." In this sense the reading of graphic design and images provides evidence of a synthesis of the complex and subtle processes of cultural production, for as Hall (1980) and Williams (1981) among others argue more broadly, what is needed is an analysis of the social production of commodified realities, for example how information about ethnicity is commodified and objectified for consumption as public knowledge about national and regional culture.

Additionally, drawing upon Dilnot (1989), Walker (1989), and Rheinfrank and Welker (1994) who focus on the social content of graphic representations, and in particular Jhally (1987), Williams (1980) and Williamson (2004) who focus on the materiality and symbolism of advertising in general, the authors argue that the textual-visual dimensions of graphic design should be theoretically positioned within broader cultural formations, historical contexts and social constructions. From this perspective, this paper critically addresses and foregrounds the production and consumption of social knowledges which are routinely and unproblematically embedded in the design process, and the manufacture of graphic designs as public objects (graphics which 'represent' commodified ideas), social meanings (refracted through cultural ideas 'about' regional identity), and pragmatic values (mediated by 'truth-statements' concerning shared practices and global economies).

This paper's critical point of departure is that the design/representation relation is not static. As Fry (1983) has put it, graphic design is productive in that it articulates cultural and discursive

formations which, in turn have commercial, ecological and material effects. It is not concerned with graphic designs in their aesthetic forms, nor with the assessment of the objects as either effective or flawed advertising. It focuses on the materiality of visual communication, thereby problematising the 'surface' or taken-for-granted meanings and values the images and texts embody, linking them as social constructions and commodified realities to official (e.g. government) and quasi-official (e.g. community-based) knowledges which, themselves, are consistent 'truths' about culture and society. The paper discusses the methods of addressing social and cultural perspectives as a focus in postgraduate research via case studies in postgraduate research supervision and training, and the curriculum design of an elective subject for an online Masters programme.

2. DEFINING CULTURE

For the purpose of this paper, culture is broadly defined as an inclusive term to refer to 'any aspect of daily life which relates to a social context' (Walker and Chaplin 1997). The discipline of graphic design – within the field of visual culture – belongs to part of a wider field of social and cultural production which in turn is part of a field of general manufacture connected with a specific, historical mode of production which is in the capitalist tradition. Graphic design, like language, is essentially a social activity whether it is conducted by an individual or collectively.

3. CASE STUDY: GRAPHICS AND CONTEMPORARY SOCIETY

The Master of Cross-Disciplinary Art and Design programme was launched in 2007 and offered as a fully online coursework Masters programme by COFA Online, the online education arm of the Faculty of the College of Fine Arts at the University of New South Wales, Sydney, Australia. The coursework Masters programme offers a structured sequence of core subjects which complement and contextualise the elective subjects by addressing the disciplinary,

practical and theoretical connections towards an understanding of cross-disciplinary creative practice. The fully online context of the programme enables a diversity of students from different creative fields, professional experiences, cultures and locations to interact and study together. As part of the curriculum, students investigate online learning strategies, learn about collaborating on cross-disciplinary projects, and develop online information literacy skills to maximise their learning experience.

The subject, Graphics and Contemporary Society (GCS), was designed and written as part of a suite of elective subjects in the online Master of Cross-Disciplinary Art and Design programme. The subject focuses on topical issues in contemporary graphic design and its significance in society, including communicating identities, designing for national and global audiences, graphics as strategic communication between the client and the public, and design as social policy. The lecture topics include: (1) Reading Graphics: Early Print to Modernism, (2) The Lure of the Visual: Communicating with Pictures, (3) Icons and Symbols: Towards a Global Visual Language, (4) Pixel Perfect: Digital Technology and the Transformation of Vision, (5) Viewing Graphics Critically, and (6) Viewing Graphics Socially.

The emphasis in the lecture topics is premised on the graphic image which has emerged as a prevailing form of communication in everyday life as a result of the shift from textual models, which represented the lingua franca for discourses in the arts, culture and media, to one of visual experience. Each lecture is accompanied by a 'talking point' activity in which key issues from the lecture are raised for group discussion moderated by the online facilitator. For example, the 'talking point' activity in Lecture 4 required the students to explore how the 'pictorial turn' has been spearheaded by the emergence of new digital technologies available to the masses in the creation, display and rapid transmission of the image to wider audiences via the Internet, film, photography, print and video. The online activities are complemented by practical collaborations in design projects followed by a series of critical analysis and reflective writing on the designs. The students are required to research and analyse how as a social

activity, the graphic communication of image and text engages critical reflection in the production and consumption of cultural knowledge, particularly the process of meaning making in national iconography, product advertising and editorial design.

Evaluation of student responses to the subject indicate: (1) issues raised in the lectures and 'talking point' activities were well aligned with the activities and projects, and (2) a clear understanding of the social and cultural in graphic design through 'astute observations' in the critical analysis of graphic design and the high level of reflection in 'meaning making' during the fourteen-week period (COFA Online 2007). Although the evaluation represents an early response to the design and curriculum development of the new subject, it demonstrates an encouraging outcome for raising awareness of social and cultural issues in graphic design, and an introduction to critical analysis in research.

4. CASE STUDY: GRAPHICS AND CULTURAL IDENTITY

Jane (not her real name) completed the Master of Design (Honours) programme in early 2007, and her topic examines the relationship between design and communication strategies web design and the mediation of cultural identity to resonate with Chinese youth in Singapore. The research required qualitative and quantitative methods including a comparative analysis of cultural iconography used in the designs of selected Chinese media and entertainment websites in Hong Kong, Shanghai and Singapore, and a pilot study which surveyed youth responses to cultural identity, iconography and visual metaphors in web design.

During the initial stage of the research Jane was required by her supervisor to propose a theoretical framework to support her argument, and a method for the comparative analysis of the selected websites. It was important for Jane, a graphic designer, to consider perspectives beyond her own field to inform and support the socio-

cultural issues in visual communication. In her discussions with the supervisor Jane recognised that her research required a cross-disciplinary approach which would draw a connection between the social construction of identity and the graphic strategies in visual communication. For the comparative analysis of selected web designs from Hong Kong, Shanghai and Singapore, and the design of the survey in the pilot study it was necessary for Jane to adopt a model for interrogating and evaluating the collected textual and visual data.

4.1 THEORETICAL FRAMEWORK

In conducting her review of literature in the areas of identity – including cultural, ethnic, global, 'glocal' and national – Jane was encouraged by her supervisor to explore perspectives from advertising and marketing, communications, cultural studies, history and sociology to inform her of the issues which influence the social construction of identity. For example: consumption and its influences on identities and lifestyles in contemporary Asia (Chua 2000), the influence of globalisation on identity (Friedman 1994, Mathews 2000, Robertson 2003), ethnicity and cultural identity of the Chinese diaspora (Kong and Yeoh 2003, Tan 2002), mass media, the internet and cultural identity (Kuo 1999, Sun 1998, Yang 2003), and management of ethnicity and cultural identity in Singapore (Raj 1995, Tamney 1995, Tong and Pakir 1996). Jane supported the concept of a Chinese identity which manifested cultural distinctiveness in the Asia-Pacific region but also fitted within the global economy, and subscribed to the view of a 'Cultural China' theorised by Tu Wei-Ming (1994) which focused on Chineseness from a perspective beyond language, customary practices and geo-political boundaries. Tu categorised the Chinese in terms of a series of 'symbolic universes'. China, Hong Kong, Singapore and Taiwan are the key players in the first symbolic universe under a 'Cultural China' which interacts continually with the Chinese diaspora outside of China (second symbolic universe), and the community of China academics and scholars (third symbolic universe). It was essential for Jane to identify a theoretical framework for contextualising the focus of her research,

and for establishing the scope and parameters of the method for collecting and analysing data.

4.2 RESEARCH METHOD

For the comparative analysis of the selected websites from Hong Kong, Shanghai and Singapore, Jane investigated various methods including a cultural model which identifies global information, cultural bias, cultural metaphors and the degree of localisation (del Galdo and Nielson 1996), the 'four cultural dimensions' model which focused on high/low power distance, individualism/collectivism, gender bias, uncertainty avoidance and time orientation (Hofstede 2001), and the culture-centred model which addressed interactivity and usability for interface designs based on a culture-rooted metaphor (Shen, Wooley and Prior 2005). While many references have provided discussions and solutions for developing effective user interface designs, much have either ignored the cultural diversity of end-users or placed greater emphasis on the look or feel of the design, branding and what the end-user can accomplish (Nielson 2000). A model developed by E. M. Fleming for the cultural analysis of artefacts was chosen by Jane as the method to examine in depth the relation of an artefact or design to aspects of its own culture, to study the artefact beyond the view of design and workmanship, and to understand the cultural background of the living environment and human behaviour during the time when the artefact is made (Fleming 1982). Fleming's model identifies a five-fold classification of the basic properties of an artefact – history, material, construction, design and function – and a set of four operations, namely identification, evaluation, cultural analysis and interpretation. The Fleming model provides a wider set of considerations for analysing an artefact at every stage of the design process by focusing on socio-cultural aspects and the end-user.

5. CASE STUDY: GRAPHICS AND THE REPRESENTATION OF HIV/AIDS

Anna (not her real name) is a current research candidate in the Master of Design (Honours), and her topic examines socio-cultural taboos and the representation of HIV/AIDS in the material culture of Australian health campaigns. Because of the cross-disciplinary nature of the research, Anna has joint-supervision by two academics with expertise in graphic design, visual culture, HIV/AIDS and sociology. A graphic designer by training and guided by her supervisors, Anna embarked on an extensive literature review in cultural studies, HIV/AIDS, sociology and visual studies to identify themes and sub-themes for her research. To complement the literature review Anna adopted qualitative methods to analyse, interrogate and triangulate collected data for the verification and validation of information from historical, personal/institutional and visual archives.

5.1 CONCEPTUAL MODEL

Anna's conceptualising of the material culture of HIV/AIDS – including posters, print and electronic advertisements – as the production and consumption of social knowledge of the epidemic provides an approach which interrogates socio-cultural and political issues in the representation and meaning-making processes of graphic design. The body and its representation as a theme is paramount in examining what is seen/unseen and present/absent in public health campaigns, and is crucial to the understanding of taboos and the social and cultural construction of HIV/AIDS. For this investigation in representation, Anna's method of analysis is informed by the study of gender roles in advertising (Goffman 1979), the context of how photographic images come into existence and its purpose (Tagg 1993), and the representation of illness and sexuality as a socio-cultural narrative of the epidemic (Gillman 1995). Anna identified several interlinked sub-themes as essential for inclusion in the understanding of the epidemic and the representation of the body in

HIV/AIDS campaigns. One sub-theme is the subject of taboo and the types of taboos which influence HIV campaigns, but more importantly theories behind the social construction of taboos (Douglas 1966, Gilman 1988). Risk is another sub-theme which influences social action and reaction to perceived threats which are in a continual state of flux and re-evaluation (Lupton 1999).

The cross-disciplinary nature of Anna's literature review provides solid grounding for an understanding of the social and cultural constructions of the epidemic in the context of the representation of the body in HIV/AIDS campaigns. The theme and sub-themes conceptualise the representation of the body as the production and consumption of epidemic knowledge, and provide the theoretical framework for the textual-visual analysis of the material culture of HIV/AIDS campaigns.

6. CONCLUSION

Graphic designers are trained experts in the production of artefacts containing texts and images. The designing process does not end with the designed artefact as the focus of design shifts to include the experiences of those who use and interact with the object. The 'meaning' of the designed artefact has become a significant issue, and attempts to understand and incorporate meaning into objects have led to the borrowing of insights from other fields including advertising, communications, cultural studies, history, sociology and visual culture. Graphic design is essentially an activity which relates to a socio-cultural context whether it is conducted by an individual or collectively. This is particularly significant when the designed artefact is the outcome in the production and consumption of social knowledge.

The incorporation of the social and cultural in graphic design can be achieved by aligning such topics in the lectures and activities with the projects to emphasise the association between meaning and artefact, while allowing for the critical analysis and high-level of reflection in the meaning making process. The two case studies from postgraduate

research supervision demonstrated strategies for focusing on social and cultural perspectives in design research which included a cross-disciplinary focus in the literature review and theoretical framework, and a triangulated method for analysis and evaluation of collected data. Designed artefacts create 'meaningful situations of use', and cannot be considered in isolation from these situations (Rheinfrank and Welker 1994).

REFERENCES:

COFA Online (2007) COFA0901 Graphics and Contemporary Society: Course evaluation, Session 2. Sydney: UNSW.

Chua, B. H. (ed.) (2000) "Consuming Asians: Ideas and Issues", Consumption in Asia: Lifestyles and Identities. London and New York: Routledge.

del Galdo, E. M and Nielson, J. (eds.) (1996) International User Interfaces. Indianapolis, IN: Wiley Computer Publishing.

Dilnot, C. (1989) "The State of Design History. Part II: Problems and Possibilities", V. Margolin (ed.) Design Discourse: History/Theory/Criticism. Chicago and London: The University of Chicago Press, 240.

Douglas, M. (1966) Purity and Danger: An Analysis of the Concepts of Pollution and Taboo. London: Ark Paperbacks.

Gilman, S. L. (1988) Disease and Representation: Images of Illness from Madness to AIDS. Ithaca, NY: Cornell University Press.

Gilman, S. L. (1995) Health and Illness: Images of Difference. London: Reaktion Books.

Goffman, E. (1979) Gender Advertisements. New York: Harper and Row.

Fleming, E. M. (1982) "Artefact Study: A Proposed Model", T. J. Schlereth (ed.) Material Culture Studies in America. Nashville, Tennessee: American Association for State and Local History.

Fry, T. (1983) "Cultural Politics Design and Representation", Block #9: 40–49.

Friedman J. (1994) Cultural Identity and Global Process. London: Sage.

Hall, S. (1980). "Encoding and Decoding", Hall, S. et al, (eds), Culture, Media, Language. London: Hutchinson.

Hofstede, G. (2001) Cultures and Consequences: Comparing Values and Behaviours, Institutions and Organisations across Nations. Thousand Oaks, CA: Sage.

Hollis, R. (1994) Graphic Design: A Concise History. London: Thames and Hudson.

Jhally, S. (1987) The Codes of Advertising: Fetishism and the Political Economy of Meaning in the Consumer Society. London: Pinter.

Kong, L. and Yeoh, B. (2003) "Nation, Ethnicity and Identity: Singapore and the Dynamics and discourses of Chinese Migration", L. J. C. Ma and C. Cartier (eds.) The Chinese Diaspora: Space. Place, Mobility and Identity. New York: Rowman and Littlefield.

Kuo, E. C. Y. (1999) "The Role of the Media in the Management of ethnic relations in Singapore", A. Goonasekera and Y. Ito (eds.) Mass Media and Cultural Identity Ethnic Reporting in Asia. London and Sterling, Virginia: Pluto Press.

Lupton, D. (1999) Risk. London: Routledge.

Mathews, G. (2000) Global Culture / Individual Identity. London and New York: Routledge.

Meggs, P. B. (1983) A History of Graphic Design. London: Allen Lane.

Nielson, J. (2000) Design Web Usability. Indianapolis, IN: New Riders Publishing.

Raj, V. (1995) Asianising Singapore: The PAP's Management of Ethnicity. Singapore: Heinemann Asia.

Rheinfrank, J. J. and Welker, K. A. (1994) "Meaning", M. Bierut, W. Drenttel, S. Heller, and D. K. Holland (eds.) Looking Closer: Critical Writings on Graphic Design. New York: Allworth Press, 165–170.

Robertson, R. and White, K. E. (eds.) (2003) Globalisation: Critical Concepts in Sociology. Volume 3. London and New York: Routledge.

Shen, S. T., Wolley, M. and Prior, S. (2006) Towards Culture-centred Design, Interacting with Computers, 18.

Sun, W. (1998) "Diaspora Online and postnational Chineseness", Asia Pacific Media Educator, 2, 106–114.

Tagg, J. (1993) The Burden of Representation. Essays on Photographies and Histories. Minneapolis, MN: University of Minnesota.

Tamney, J. B. (1995) The Struggle Over Singapore's Soul: Western Modernisation and Asian Culture. Berlin: Walter de Gruyter and Company.

Tan, E. K. B. (2002) "Reconceptualising Chinese Identity: The Politics of Chineseness in Singapore", L. Suryadinata (ed.) Ethnic Chinese in Singapore and Malaysia: A Dialogue between Tradition and Modernity. Singapore: Times Academic Press, 109–136.

Tong, C. K. and Pakir, A. (1996) "The Making of National Culture in Singapore", E. Thumbo (ed.) Cultures in ASEAN and the Twenty-first Century. Singapore: Unipress.

Tu, W-M (1994) "Cultural China: The Periphery as the Centre", W-M Tu (ed.) The Living Tree: The Changing Meaning of Being Chinese Today. Stanford, CA: Stanford University, 3–34.

Walker, J. A. (1989) Design History and the History of Design. London: Pluto Press.

Walker, J. A. and Chaplin, S. (1997) Visual Culture: An Introduction. Manchester and New York: Manchester University Press, 16.

Williams, R. (1981). Culture. London: Fontana.

Williamson, J. (2004) Decoding Advertisements: Ideology and Meaning in Advertising. London and New York: Marion Boyars.

Yang, G. (2003) "The Internet and the Rise of a Transnational Chinese Cultural Sphere", Media, Culture & Society, 25, 469–490.

Assessing the Emerging Industrial Design Practitioner

Alex Velasco

Izmir University of Economics, alex.velasco@ieu.edu.tr

INTRODUCTION

Assessment practices in undergraduate industrial design education, more often than not, are limited to a subjective evaluation of student design project work submitted at the end of the course or semester. Summative methods are applied to assess skills such as those typically acknowledged as important to design practitioners. Literature by industrial design bodies and design recruitment professionals emphasise such abilities as sketching, model making, and knowledge of computer software (IDSA 2007; DIA undated; Siegel 2000). The student's design project provides a convenient object for the evaluation of skills and the application of professional knowledge to the design process, and there exist as many grading systems and rubrics as there are design instructors. Summative assessment, in this respect, embodies a functionalist view of design education and seemingly addresses the imperative for vocational relevance in design education. According to Potterton and Parsons (1994) all summative profiles have two basic purposes: 1. To acknowledged achievement and, 2. Form the basis for a report for all interested parties.

Evaluating an industrial design project, an assessor may consider such criteria as 'design process,' 'design concept,' and 'presentation.' This example of a grading rubric applied by the author allows for a typical novice/learner ID studio project to be assessed. A rubric defines

the criteria for assessment and makes explicit the qualities that are sought and is allied to a rating scale (Table 1). A rubric of this type can be weighted differently according to the type of project and level of student. In an ID studio project for novice students designing a plastic moulded toolbox the exercise is weighted to emphasise design process (a more important criterion at that level), at the expense of concept and presentation (Table 2).

Recruitment professionals, on the other hand, might attempt assess general competences of the candidate including, physical make-up, attainments, general intelligence, special aptitudes, interests, disposition and circumstances related to the job on offer (Edenborough 2005). The design professions operate in the flux of material culture and in a context of economic and industrial structural change, while higher education is increasingly required to respond to market demands and forces. In the face of such uncertainty at the outset of their graduates' careers, educational institutions are encumbered to provide them with generalizable competences that allow graduates to, amongst other things, adapt to, and participate in change, deal with unfamiliar situations, reason critically and collaborate in teams.

Gipps (1994) offers a 'broader definition' of a form of educational assessment 'used in support of learning' that summarises recent educational thinking at school level, that recognises that 'domains and constructs are multi-dimensional and complex;' that assessment 's not an exact science;' that ' clear standards' should be set for performance; that ' and tasks need to be anchored in important and relevant subject matter.' Good assessment 'elicits an individual's best performance' and includes 'exemplars' to guide assessors and 'moderation' procedures to make clear to teachers 'the nature of the skill or concepts' being assessed. Assessment should 'move away from the notion of a score, a single statistic, and look at other forms of describing achievement including "thick" description of achievement and profiles of performance.' Teachers 'are not well trained in assessment;' and 'have to understand the constructs which they are assessing,' and should be aware of 'self-esteem and motivation problems for low-scoring pupils.'

Design process[1]	
2D Exploration and Refinement	Drawing as a tool for thorough exploration and refinement of the design concept, throughout the design process.
3D & CAD Exploration and Refinement	3D and CAD model making as tools for thorough exploration and refinement of the design concept.
Research	Desk and field research applied to attain a fuller understanding of the design problem and potential solutions.
Design Project Log	Conscientious and well organised record of the design process.
Design Concept	
Innovation	In terms of function, arrangement of components, application of technology, design details etc.
Feasibility	In terms of manufacturability, marketability etc.
Aesthetic Values	Appropriateness of appearance in terms of intended market, competitors etc.
Contextual Values	The potential of the design concept in the market, considering the social, cultural, political and economic context in which the final product will operate. "Does it have the x-factor?"
Presentation	
2D Presentation	Manual or CAD renderings for presentation. Appropriately communicate design concept elements, especially: innovation, aesthetic values and contextual relevance.
3D Model	Appropriately communicate design concept elements, especially: innovation, feasibility, aesthetic values and contextual relevance.
Technical Drawings	Appropriately communicate design concept elements, especially: innovation and feasibility.

[1]Work should show an appropriate combination of exploration and refinement throughout the design process. "Exploration" = a wide range of alternatives explored throughout. "Refinement" = elements of the final design concept developed thoroughly and in detail.

Table 1: ID studio project assessment criteria

Design process	2D Exploration	20
	3D Exploration	20
	Research	5
	Design Project Log	5
Design concept	Innovation	5
	Feasibility	5
	Aesthetic Values	5
	Contextual Relevance	5
Presentation	2D Presentation	10
	3D Model	10
	Technical Drawing	10

Table 2: ID studio project rubric and percentage weightings

The goal is where...

> 'the majority of the population, not just the elite, needs to become flexible thinkers, reasoners and intelligent novices, and to believe that they can do so.'

Assessing and providing the emerging design practitioner with long-term feedback about their reflexive 'capacity to develop critical awareness of the assumptions that underlie practices' (Edwards 2002) calls for extended conversations between the student and their tutor/mentor combined with tools, such as discourse analysis, to establish the degree to which the students are gaining that reflexivity, so essential in negotiating their life trajectories.

METHOD

Qualitative research is research that involves analyzing and interpreting texts and interviews in order to discover meaningful patterns descriptive of a particular phenomenon. (Auerbach 2003)

Assessment criteria were extracted from the author's own criteria, which has parallels to the LiNEA project 's 'learning trajectories' (Eraut 2005); and the Dreyfus' (1988) five skill acquisition stages.

AUTHOR'S CRITERIA

About designing—Application of professional design methods and processes; Application of professional techniques and skills; Ability to reflect in practice; Robustness in designing (withstand setbacks, find information etc.); Ability to explain and justify decision making; Using the jargon, terminology

About the context of design—Ability to contextualize practice in political, economic and social terms; Critical approach to profession; Identification with (larger/global) professional community

About personal traits—Ability to learn autonomously; Enjoyment and fulfilment in professional work (Flow); Confidence in own ability to practice profession; Developing strategy for professional career trajectory; Positive bullish outlook for career

Steps that bridge profession—Professional society; Email newsgroup; Professional placement; Entered competitions; Job or job offer; Freelance work or own company; Exhibitions; Website

LINEA PROJECT CRITERIA (ERAUT 2005)

Task Performance—Speed and fluency; Complexity of tasks and problems; Range of skills required; Communication with a wide range of people; Collaborative work

Awareness and Understanding—Other people: colleagues, customers, managers, etc.; Contexts and situations; One's own organization; Problems and risks; Priorities and strategic issues; Value issues

Personal Development—Self evaluation; Self management; Handling emotions; Building and sustaining relationships; Disposition to attend to other perspectives; Disposition to consult and work with others; Disposition to learn and improve one's practice; Accessing relevant knowledge and expertise; Ability to learn from experience

Teamwork—Collaborative work; Facilitating social relations; Joint planning and problem solving; Ability to engage in and promote mutual learning

Role Performance—Prioritisation; Range of responsibility; Supporting other people's learning; Leadership; Accountability; Supervisory role; Delegation; Handling ethical issues; Coping with unexpected problems; Crisis management; Keeping up-to-date

Academic Knowledge and Skills—Use of evidence and argument; Accessing formal knowledge; Research-based practice; Theoretical thinking; Knowing what you might need to know; Using knowledge resources (human, paper-based, electronic); Learning how to use relevant theory (in a range of practical situations)

Decision Making and Problem Solving—When to seek expert help; Dealing with complexity; Group decision making; Problem analysis; Generating, formulating and evaluating options; Managing the process within an appropriate timescale; Decision making under pressurised conditions

Judgement—Quality of performance, output and outcomes; Priorities; Value issues; Levels of risk

DREYFUS' FIVE SKILL ACQUISITION STAGES (DREYFUS AND DREYFUS 1988)

Stage 1: Novice—Recognize relevant (but context-free) facts and features. Acquire basic (context-free) rules to follow. Feels little responsibility for result.

Stage 2: Advanced beginner—Real situations. Learns by practical experience. Starts to recognize "situational" elements. Decisions refer to context-free and situational elements. Feels little responsibility for result.

Stage 3: Competent—Adopt hierarchical decision-making. Organize the situation, examine small set of factors. Sees situation as a set of facts. Conclusion should be drawn, decision made, or expectation investigated. Feels responsible for outcome.

Stage 4: Proficient—Deeply involved in task. Certain features are emphasised. Past experience associated with present situations, anticipates consequences. "Holistic discrimination and association". Involved and intuitive understanding. Detached decision-making.

Stage 5: Expert—Knows what to do. Mature and practiced understanding. Responsible, does not see problems in detached way. In familiar situation they do what normally works. Groups together features of situations, so decisions, actions, tactics automatically come to mind. Ability to discriminate an immense number of situations. Fluid performance.

The questions that formed the basis for the interviews were paraphrased from the following list. (PS1, the professional industrial designer subject was asked for a brief biography, Questions 1, 2 and 3 were omitted and the remaining questions were modified to suit).

The aim of the interview was explained to...'Hear in own words, about your progress and career trajectory.'

1 What are your aims for your career? Be as specific or broad as you like…
2 Imagine—now completing studies. How well prepared do you think you are for entry into the career that you have described?
  2.1 Where are you lacking/not prepared?
3 What do you expect from your remaining education?
  3.1 How will it contribute to your career trajectory?
  3.2 How may it not contribute to your career?
4 What skills do you bring to a design team/studio?
5 In what ways do you expect to develop in future? In 10 years, after graduating, you will be much more experienced, how will you be different as an industrial design professional?
6 Have you met any designers you admire?
  6.1 What do you admire about them?
7 Tell me about those experiences you have had that equate to reaching out to the professional world...
  7.1 Member of professional society?
  7.2 Subscribe to email newsgroup?
  7.3 Professional placement?
  7.4 Entered competitions?
  7.5 Do you have job/job offer?
  7.6 Freelance work/started your own company?
  7.7 Involved in exhibitions?
  7.8 Created own website?
8 What about further education?
  8.1 Why/why not?
  8.2 What do you expect from it?
9 Think about profession as a whole... Do SWOT analysis...
  9.1 What are ID's strengths?
  9.2 What are ID's weaknesses?
  9.3 What are the opportunities facing ID profession?
  9.4 What are the threats facing ID profession?

Recordings were made for detailed transcriptions suitable for discourse analysis. Due to time constraints coding was done by transcribing significant passages and comparing them to notes taken at the interview. Auerbach (2003) describes six steps in coding interviews using 'grounded theory' to allow theoretical constructs to emerge from the recorded text:

Step 1. Explicitly state your research concern and theoretical framework for your research concern
Step 2. Select the relevant text for further analysis
Step 3. Discover repeating ideas by grouping together related passages of relevant text working on each transcript separately
Step 4. Organize themes by grouping repeating ideas into coherent categories
Step 5. Develop theoretical constructs by organizing themes into more abstract concepts
Step 6. Create a theoretical narrative by retelling the participant's story in terms of theoretical constructs

Interviews were held with five subjects chosen by the author, in English, their second language: Two, third year industrial design students; two, fourth year industrial design students; and, one professional industrial design practitioner and part-time instructor at the department. The interviews were semi-structured and followed a list of open-ended questions. Where two subjects were interviewed simultaneously, they were questioned so that each in turn, would have one repeat question and one new question. Audio recordings were made for analysis.

Subjects	Label	Biography	Gender	Age	Session	Duration
Student 1	S1	Fourth year ID student	Male	22	Interview 1	95 min.
Student 2	S2	Fourth year ID student	Male	21	Interview 1	95 min.
Student 3	S3	Third year ID student	Female	20	Interview 2	101 min.
Student 4	S4	Third year ID student. Degree in tourism and work experience.	Female	28	Interview 2	101 min.
Professional 1	P1	Professional designer. Degree in industrial design.	Male	35	Interview 3	76 min.

Table 3: Interview session and subject descriptions

FINDINGS

Criteria	S1	S2	S3	S4	P1
About personal traits					
Ability to learn autonomously	++	++	++	++	++
Enjoyment and fulfilment in professional work (Flow)	++	++	++	++	++
Confidence in own ability to practice profession	++	++	++	+	++
Developing strategy for professional career trajectory	+	+	+	+	
Positive bullish outlook for career	++	+	++	+	+
About the context of design					
Ability to contextualize practice in political, economic and social terms	+	+	+	+	++
Critical reflection on education and profession	+	+	–	+	++
Identification with (larger/global) professional community	+	+	–	–	++
Steps that bridge profession					
Professional society	–	–	–	+	
Email newsgroup	++	–	+	+	
Professional placement	+	+	+	+	
Entered competitions	++	+	–	–	
Job or job offer	+	+	+	–	
Freelance work or own company	++	+	–	–	
Exhibitions	+	+	+	+	
Website	–	–	–	–	

++ ~ very positive; + ~ positive; – ~ negative; blank ~ not tested

Table 4: Incidences of author's criteria

All subjects were characteristically happy with their choice of profession and optimistic about the future. This is a good omen for those embarking on, or engaging in, a potentially precarious career. All subjects also gave indication of the sense of fulfilment and enjoyment that they derive from working as designers. This is another good omen and, for example, Student 3 described her experience working and learning CAD software in a way that was similar to descriptions of 'flow'—an ecstatic state of concentration (Csikszentmihalyi 1991).

Both student interviews highlighted differences in their imagined model of professional design activity and there were parallels. Student 2 articulated a self-expression and visual culture model of design activity in the first interview in contrast to the rational problem solving model of student 1. In the second interview, student 3 articulated a visual culture model of design activity that contrasted with student 4's rational problem solving model. Students 1 and 2 also were clearer about their options after graduation, and had wisely set their minds on further study, abroad, at specific universities/art schools.

The role of formal education in professional development was one unanticipated theme of the interviews. In interview 2, the more mature student 4 expressed disappointment in the superficial manner in which subjects were covered in the curriculum. A dialogue ensued where student 4 perceived learning as a social experience and bemoaned the lack of opportunities for engaging with subjects in a deep manner and, for discussion. This was reflected in some anxiety that student 4 exhibited about her state of preparation for professional life. Student 3 countered by proffering learning as individual choice and the expectation that professional life would not be qualitatively different to education and was confident in her state of preparation.

The contrast between the interviews of the student subjects with that of the professional was marked. The 35-year-old professional industrial designer of nearly ten years, talks using concrete examples drawn from experience, answers questions confidently and explains concepts in detail. The subject appeared to make the same distinction between models of professional design activity, saying that his strength was in the rational problem solving model at the expense of a deficiency he feels in visual culture model. This subject was also able to give a more enlightened SWOT analysis of the profession. However, when probed on the veracity of example he offered in his SWOT analysis he confessed they were mere opinions and were not based on evidence or existing theories. The last point might suggest that our subject, in the Dreyfus' scale, was competent or maybe proficient, but perhaps not an expert.

DISCUSSION

Some of the author's criteria for formative assessment could be easily converted into a simple questionnaire to facilitate analysis and feedback. While the LiNEA Project criteria are an excellent description of professional competences they are best assessed in action. The Dreyfus' skill acquisition stages offer an interesting scale for assessment but were only applied very generally and in imprecisely, at best.

This was a small study, undertaken by the author over a short period of time and with few subjects. The results, therefore, only suggest how formative assessment may be applied if the method was scaled up to cover a cohort of undergraduate students. For example, such conversations may remind students of the value of fulfilment and enjoyment in their career, that it is a life-long endeavour of learning, and that they may be imagining only one model of professional design activity.

A single methodological approach has been proposed for the formative assessment and feedback for undergraduate industrial design students. Further research of a similar nature is recommended to establish whether this method is wholly feasible.

BIBLIOGRAPHY:

Auerbach, Carl F. 2003. Qualitative Data: An Introduction to Coding and Analysis. New York, NY, USA: New York University Press.

Csikszentmihalyi, Mihaly. 1990. Flow the Psychology of Optimal Experience. New York, NY: HarperCollins Publishers.

Design Institute of Australia. Undated leaflet. A Career as a Professional Designer. East Melbourne: DIA.

Dreyfus, Hubert L. and Stuart E. Dreyfus. 1988. Mind over machine: The power of human intuition and expertise in the era of the computer. New York, NY: Free Press.

Edenborough, Robert. 2005. Assessment Methods in Recruitment, Selection and Performance: A Manager's Guide to Psychometric Testing, Interviews and Assessment Centres. London, UK: Kogan Page Limited.

Edwards, Richard, Stewart Ranson and Michael Strain. 2002. Reflexivity: towards a theory of lifelong learning, International Journal of Lifelong Education, 21(6):525–536.

Eraut, M. R. 2005. End of Award Report: Learning During the First Three Years of Postgraduate Employment. ESRC.

Gipps, Caroline. 1994. Beyond Testing: Towards a Theory of Educational Assessment. London, UK: Routledge Falmer.

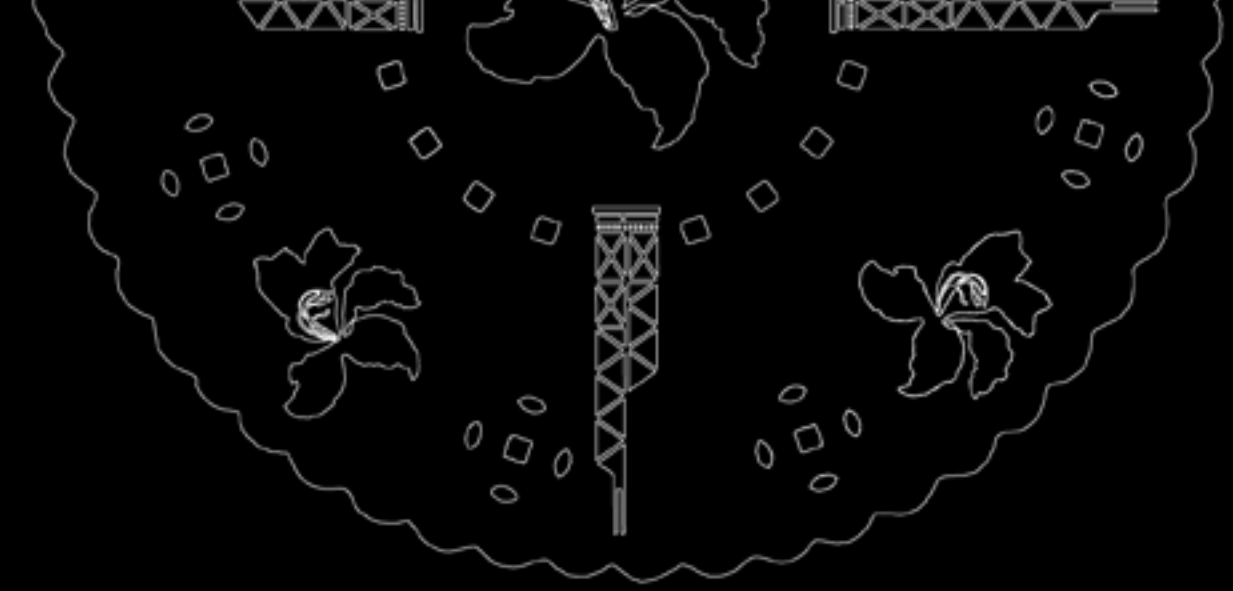
IDSA. 2007. ID Defined. Industrial Design Society of America. http://www.idsa.org/webmodules/articles/anmviewer.asp?a=89&z=23.

Potterton, A. Valerie and Philip G. Parsons. 1994. Qualitative changes in learning and teaching brought about by using ecords of achievement. In Improving student learning : through assessment and evaluation, ed. Graham Gibbs, 56–69. Oxford, UK: Oxford Centre for Staff Development.

Siegel, RitaSue. 2000. Getting an industrial design job, Great Falls, VA: IDSA.

Silverman, David. 1993. Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction, London, UK: Sage Publications.

Culture



Design Play – An Inquiry into Design Education Processes in Hong Kong's Multicultural Contexts

Remi Leclerc and Bruce Wan

School of Design, The Hong Kong Polytechnic University, Hong Kong,
{sdremi, sdbruce}@polyu.edu.hk

ABSTRACT

Through learning by doing, The Hong Kong Polytechnic University (PolyU) School of Design (SD) students 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 way students link project 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 SD academic staff, documenting SD teaching and learning experiences. 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 creative hub.

The only tertiary design education institution in Hong Kong, SD programmes span the design curriculum, from sub-degree to doctoral studies.

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 acknowledged in 2006 and 2007 by Businessweek magazine as among the world's 40 best design schools, a significant proportion of SD staff share an international background.

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

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.

Design tools and methods taught at SD

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

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; they ignore the relevant act of defining an appropriate design brief as an outcome of an 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;

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 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 project 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 Staff, Students, and Subjects

SD Students – SD's flagship Bachelor in Design programme students are often sub-degree holders.

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

SD Subjects – The "Client Project" is a Work-Integrated Education (WIE) subject aimed at developing students' understanding of real-life professional design practices while working in teams. The "Final Project" is a subject students take individually, for which they will apply knowledge they have acquired during the course of their study. The Design Play research project focuses on these two subject types, as they present students with the richest opportunities for exploring design processes and methodologies.

Figure 1: School of Design, The Hong Kong Polytechnic University

The two researchers have collectively taught a total of seven years at all levels of the SD curriculum.

This paper relates initial findings from a pilot study inquiring into staff's teaching experience of the design developmental stages in undergraduate programmes..

STUDENTS' BACKGROUND AND EXPERIENCE

Confucian Heritage Culture (CHC) learners' primary and secondary school experience: continuation into University

SD students share in the main a common Confucian heritage culture (CHC) secondary school education background:

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).

Watkins' and Biggs' probes into the reality of what they have defined as the Chinese Learner and Teacher provides us with some insight into the questions posed in this research:

Two aspects to the paradox of the Chinese learner

(Despite classroom conditions that), according to Western standards, cannot be conducive to good learning, (…) CHC students out-perform Western students at least in science and mathematics, and have deeper, meaning-oriented approaches to learning.

Another 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]

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?

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", all of which run counter to the type of optimal learning climate indicated by Western research and theory (Watkins & Biggs, 2001).

Is this paradox of high academic performance and Confucian learning strategies also present in design education contexts, where the taught processes are meant to challenge norms and where creativity is applied for innovation?

Figure 2: Experiencing growing pains – CHC design learners

Whereas SD students eventually perform well in technology, they

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

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.

It is also a fact that SD tends not to attract students who have performed best in their formative years. 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.

RESEARCH METHODOLOGY

Interviews

This paper presents initial findings from a pilot study conducted with 14 teachers out of about 70 (see profiles charted in table 1) who were asked about their teaching experience at SD during a series of semi-structured interviews held over the academic year 2006/07

	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%

Table 1: Profile chart of the 14 teachers interviewed

A summary of main questions provided insight into the following issues:

A. Teachers' diagnosis of SD learner experiences
B. Students' understanding of the purpose of planning and vision for design projects
C. Students' understanding of design's social and cultural implications
D. Limitations students have understanding value creation
E. SD students' commitment to professional practices

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 (Figure 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, from the design brief to the formulation of a concept.

Interview transcripts confirmed the notion that, to paraphrase Watkins and Biggs, "widely held Western stereotypes and misconceptions of Chinese design learners are shown to be largely without foundation".

Figure 3: Design Play interview cue cards

FINDINGS: RESPONSE FROM TEACHERS

THE SCHOOL OF DESIGN LEARNER – A TEACHERS' DIAGNOSIS

One could 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.

Rather, the general consensus among teachers was that the difficult learning conditions students had experienced in local secondary schools (depicted by Tammy Cheung in her 2002 documentary movie "Secondary School") did not prepare them for the requirements of a

	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 no 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 beyong the tasks assigned	✓	✓	✓	✓	✓			✓		✓	✓	✓		✓	71.50%
13	students may not fully grasp 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

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.

The cultural shock students experience entering SD after years spent being "force-fed" knowledge often left them unable to stretch their minds to broader contextualized studies, in relevance to contemporary cultural and social contexts.

The challenge is twofold: as SD champions Outcome Based Education (OBE), students are required to demonstrate ability in producing projects with a well structured process.

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, 90% of interviewees found few students had vision and strategy in mind when analysing their project briefs.

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 reported that students tended to rush into a design solution before they developed their vision or strategy. 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, that it might be unreasonable to ask students to articulate "correct" project strategies.

However, the role of the teacher remained important in providing inspiration to students and reminding them that their projects were more than merely assignments. Final year students 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.	**Student's 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

Quick skills or long context?

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 in context as the final design solution should be beneficial to people.

All agreed that students were unable to extract relevant findings from research. 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.

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.

More than a third commented that both students and teachers were experiencing a cultural tug of war, as design practices blend methods and processes from both the West and the East.

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 the economical, cultural, functional, social, aesthetic, technical, and historical aspects of design affect value creation. The interviewees reported that students generally found the concept of value difficult to comprehend and were not ready to grasp its purpose. This led one interviewee to comment that it might be dangerous to use the word "value", and suggested emphasizing the "purpose" of a project.

	Questions were asked in regards to:	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
D.	**Student's 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

The road to value is paved with good intentions

Over a quarter of interviewees believed that students should be trained in the acquisition of skills before being introduced to contextual design notions such as 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 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"; 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.

Students tended to set their own agendas for each project, or their

own expected outcomes, without reading the project brief properly, therefore misaligning the project brief expectation. Exceptions to this were found in mature students who could adapt their skills into a well structured design process with clear design objectives.

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.

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

Over 70% of interviewees found it difficult to motivate students to commit to their projects. They believed that this attitude to learning was shaped by their experience of education from a young age, where they expected teachers to give just the information and answers necessary for passing examinations and progressing onto the next stages. This utilitarian approach, continued in university: 93% of interviewees reported that students allocated their studying and mental effort according to the number of credits for each subject.

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.

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 working relationship was not one-way and client projects should be viewed as opportunities for students to learn to present and explain their ideas to clients in educational/professional "joint ventures".

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. They also believed that students were not committed to their projects as these were not anchored in real professional environments: their interest decreased correspondingly if it did not match personal preferences.

Some interviewees cited other examples of students' lack of

professionalism and commitment to their studies in regards to punctuality, attendance, or reading.

Most interviewees at SD reported the need to spend time with students – a lot of it – repeating experiments until students understand the ethical 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".

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 emphasized 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.

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.

TOWARDS A PLAYFUL DESIGN TOOL

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.

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.

With SD teachers' multicultural reality on the one hand, and the School's ambition to provide students with a humanistic understanding of design's holistic practice on the other, there is a need to offer staff and students alike the means to embrace design's cultural diversity.

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"

In "The Geography of Thought", Nisbett (2003) 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".

Nisbett proposes that these cognitive differences could converge in a "Third Way" – a view most suited to SD staff, as this would likely integrate the best of both worlds into new perspectives 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).

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 (Nisbett, 2003).

Playful modularity

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?

Huizinga contends in Homo Ludens that culture is the outcome of play: as generators of meaning, designers experience a process akin to play: A cross-cultural, humanistic approach to design education may lie in its inspiration from play and game practices.

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: students need 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 project's second part will compare student response to teacher response to see where they converge or diverge; and explore possibilities to enhance SD students' creativity.

"Let my playing be my learning and my learning be my playing." (Huizinga, 1938): in tune with SD's educational objectives, a playful interactive design tool could foster conditions for an effective cultural shift, blending the multiple perceptual and cognitive realities of SD education experiences. The tool would foster students' ability to link the various steps in design development necessary to improve their sense of control over the creative process. Finally, the tool would help practitioners string a multiplicity of value-driven design processes intended to develop outcomes relevant to contemporary multicultural contexts, verifying John Dewey's proposition that "a problem well defined is a problem half solved."

June 2007

REFERENCES:

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, 2002.

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

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

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.

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.

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 SD 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 no 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 beyong the tasks assigned	✓	✓	✓	✓	✓			✓		✓	✓	✓		✓	71.50%
13	students may not fully grasp professional implications of design practice as many seem to confuse it with the stereotypical artist's lifestyle				✓	✓	✓	✓		✓			✓	✓	✓	57%

continued on next page

	Questions were asked in regards to:	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
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.	**Student's 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%

	Questions were asked in regards to:	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	%*
D.	**Student's 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.

An Adapted Framework for Articulating Consumer Culture in Experience–driven Retail Environment

Yi-Jing Lee and Prof Alex Williams

School of Art & Design, University of Salford, Adelphi Building, Peru Street, Salford, UK,
lee.yj@m2k.com.tw, y.j.lee1@pgr.salford.ac.uk, a.j.williams@salford.ac.uk

ABSTRACT

The notion of experience design is that commercial value is added when retailers create memorable moments of engagement, reinforcing the relationship between products and customers. In order to do so, the ability to engender adequate narratives to empathise with customers' intangible values is crucial, whereas the present model haven't explored adequately. The framework of cultural manifestations developed by Hofstede articulates the different levels by which a cultural group expresses itself, spanning the tangible to the intangible. In this paper, the authors adapt this framework to contextualise consumer culture across a range of differing experience-driven retail environments and distribution channels within cosmetics sector in the UK – the intention being to ultimately develop a design tool to align experiences with environments across differing consumer subgroups.

The paper focuses on applying the proposed framework as a generative tool in developing new experience concepts which appeal across/to broader value segments to test its viability and potential use.

1. BACKGROUND

1. 1. INTRODUCTION: EXPERIENCE DESIGN AS A NEW DISCIPLINE

'Experience design' is a relatively new design cross-discipline (Design Council, 2007), involving collaboration between such design activities as packaging, product and retail environment design. In terms of operational management, it demands both a fresh range of skills and knowledge-logistics among retailers, distributors and producers, and a consumer-centred approach (Hollins & Shinkins', 2006). In terms of value enhancement to business, Pine and Gilmore (1999) advocate that the provision of a compelling consumer experience can be a value-added activity for retailers. They suggest that the relocation of production, innovation of production method and the rise of new channels control the value of product and service design, which is becoming increasingly commoditised as the time to maturity of the product lifecycle becomes shortened and the point of sale more standardised and computerised.

The authors' contention is that, as a result of successful experience design, the ephemeral nature of services may be lifted to a more memorable status, and the relationship between products and customers reinforced to a greater extent. In exploring this, the authors use an exercise conducted in the cosmetics sector, which evaluates the relevance of differing channels in enhancing consumer experiences, and develop a framework for developing new opportunities, of particular value in service design education.

1.2. THE DISRUPTIVE EFFECT OF NEW CHANNELS

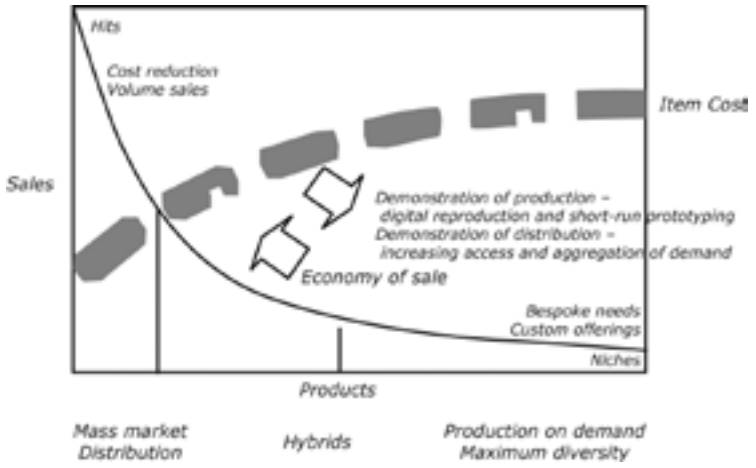


Figure 1: The Long Tail effect (Adapted from Anderson, 2006)

The Long Tail Effect, an inverse Pareto relationship, explains the phenomenon in emerging online distribution channels, such as Amazon, and the threats to traditional channels. Although Anderson (2006) has contributed a description of virgin niches driven by dynamic individuals, this model does not provide other opportunities for new distribution channels to enhance profit except for its heavy reliance on lowering storage and distribution costs. Instead of the disruptive strategy, the authors believe that by offering alternative experiences based on consumer value systems, the possibilities within channels to address these and emergent niches may be opened up.

1. 3. VALUED–BASED APPROACH TO CONSUMER CULTURE

Lifestyle research for marketing aims to categorise consumers according to the similarity of their value systems as expressed by their lifestyles (de Mooij, 2005), whereas conventional segmentation techniques group customers by either demographic or psychographic variables.

Lifestyles can be described as the expressions of culture (de Mooij, 2005). The framework of cultural manifestations developed by Hofstede (1991) articulates the different levels by how a cultural group expresses itself in terms of the use of tangible symbols, the worshipping of heroes, the holding of rituals and the establishment of values – spanning the tangible to the intangible.

The authors believe that understanding consumers' values, through grasping how consumers express themselves by lifestyle, is relevant to experience-driven retail environments, and seek to develop value-adding activity by drawing a linkage between new services and lifestyles. As such it should be understood that as elements in the supply chain build from a logistics level up to the moment of engagement, crucially lies on the same core – the ability to engender adequate narratives enabling stakeholders to empathise with customer values.

1. 4. A POSTULATED FRAMEWORK

In this paper, the authors propose an adapted framework, based on Hofstede's framework to conceptualise consumer culture against the relevance of differing value-based approaches across a range of different experience-driven retail environments and distribution channels. The framework is presented as a 2D matrix whose axes represent cultural manifestations and channels against which value-driven segments may be mapped.

It will be shown that the emergence of new disruptive 'channels' is not only responsible for dramatic changes in retail/purchase behaviours but also creates opportunities for value enhancement, particularly the experience economy, which have not yet been adequately exploited.

2. THEORY

2. 1. FROM SERVICES TO EXPERIENCES

From the perspective of profitability in business, Pine and Gilmore (1999) argue that all economic offerings, including services, are likely to become commoditised because of the evolution of technology and consumer's demanding. They analogise people's everyday life as a 'stage' and suggest that successful businesses must 'orchestrate' or 'script' customers' experiences to break out of the cycle of commoditisation.

In a parallel concept but pursuing the sustainability of service innovation, Downs et al. (2004) systematise service by use of the phrase, 'ecology', whose actors and the relationships between them form it. A mapped 'service ecology' allows managers and designers to analyse its hierarchy and lineage and then conceive a sustainable service ecology.

At an even more operational and implemental level, Hollins and Hollins (1991) introduce 'service blueprint' as a tool to specify and manage the tangibles, such as actors and 'touch-points', i.e. tangible media, including interfaces, and the intangibles, such as emotions and senses. More than an executive tool, a 'blueprint' can be enhanced as an innovation tool to observe the sensory side of the customer experience. At each stage of the experience description should be made about what the customer sees, hears, smells, touches or tastes (Hollins & Hollins, 1991) in order to improve service.

Overall, from Hollins and Hollins' (1991) to Hollins and Shinkins' (2006) work, the authors have addressed the 'contextual' more than the 'cognitive' nature of experiences(Gupta & Vajic, 1999). Gupta and Vajic argue that the cognitive dimension is crucial at the moment of engagement between experience offerings and the consumer, where cognition refers to the 'subjective' inner process of the experiencer, in contrast to context, which is the 'objective' container in which cognitive activities take place. Accordingly, the cognitive dimension

is less observable than the contextual, and therefore more difficult to elicit via conventional ethnographic approaches.

Extending the framework of action theory to consumer culture research, the authors argue that Gupta and Vajic's standpoint corresponds to Hofstede's (1991) manifestation of culture (Figure 2), which proposes that the observable levels are driven by the invisible level – 'value', a framework reviewed in section 2.2.

2. 2. MANIFESTATION OF CULTURE

The cultural manifestation framework (Figure 2) was developed by Hofstede (1991) to articulate different levels of expressions of culture, enabling comparison across differing countries. He defines culture as 'a collective programming of the mind that distinguishes the members of one group or category of people from another'. Given its nature for comparing cultural differences and then broadening its usage to commercial context, the authors consider it is appropriate to be adapted for measuring the collective consumer culture cross varied

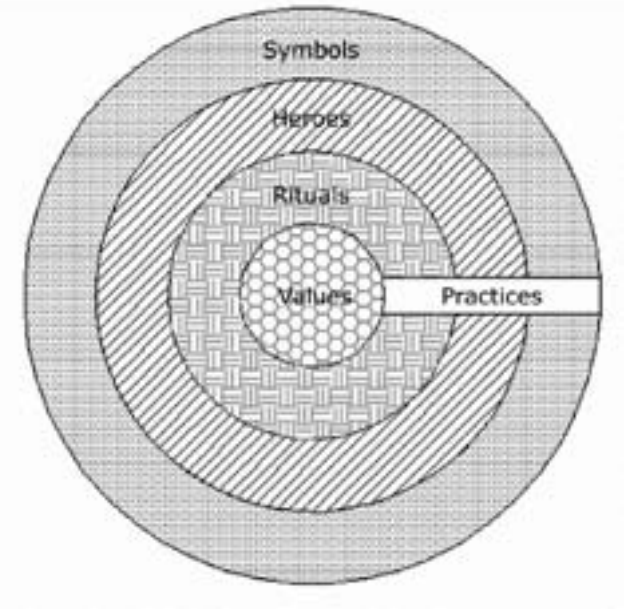


Figure 2: Manifestation of culture from the intangibles to tangibles (Hofstede, 1991)

value-driven segment in consumer market. And in marketing 'lifestyle' is the term of 'expressions of consumer culture'.

Hofstede's framework unpacks cultural expression into four levels: symbols, heroes, rituals and values, which span tangibles to intangibles. 'Symbols' refer to "pictures, objects, gestures, or words which carry a particular meaning only recognized by the members of one culture" (Hofstede). 'Heroes' are role models that are greatly respected in a culture. 'Rituals' are collective social activities with conventionalised behaviour patterns. The last but not least, 'values' are "the core of culture" (Hofstede). They are "defined as broad tendencies to prepare a certain state of affairs over others" (de Mooij).

"Cultural values are materialised in observable consumer behaviour" (Luna, 2001). Taking music consumption as an example, the record brand is one of the symbols promoted by music industry. Global brands and independent labels signify different meanings to consumers, just as differing consumer segments worship their own distinct iconic singers. Moving to a more intangible level of consumption culture, rituals refer to attendance at gigs/concerts, participation in karaoke, clubbing/partying or even downloading and sharing. These external levels of expression are driven by values, which are enduring, stable and intangible. Due to their intangible nature, these values are not easy to duplicate, whereas symbols and heroes are, making values perhaps the most important of the four manifestations of culture (Hofstede, 1991).

2. 3. THE DIALECTICS IN MARKET SEGMENTATION

Market segmentation is a marketing technique to categorise customers/consumers by the similarities of their characteristics. The classical approaches to segmentation use demographic and behavioural attributes to group a consumer population; however, value-based segmentation has drawn considerable interest in recent years.

The groundwork for value criteria was laid by Rokeach (1973), whose applications are widely used in psychology, politics and economics. He identified 36 RVS (Rokeach Value Survey) values, comprising 18 instrumental and 18 terminal attributes. Subsequent studies – VALS (Value & Lifestyle, Mitchell) and LOV (The List of Values, Kahle) – have added further categories culminating in the SVS (Schwartz Value Survey, 1992, 1994) with 57 value descriptions, including motivational forms such as Power, Achievement, Hedonism, Stimulation, Self-direction, Universalism, Benevolence, Tradition, Conformity, Security, and Super-grouping.

Conventionally, value measures have been applied after demographic or other forms of segmentation (Vinson Scott et al., 1977) in order to describe segment differences. However, since the late 80s marketers have started to use values as segmentation variables in their own right to identify new propositions (Kamakura & Mazzon, 1991).

The recent work of Sun (2006) has applied a similar approach to describe ten consumer segments in the mobile phone sector. These comprise the Family Focused, Income Retentive, Career Focused, Health Focused, Stress Avoider, Image Conscious, Hedonism, Adolescent Peer Belongers, and the Value Conscious. These particular groups are used as a benchmark in the subsequent study in section 3.1.

Whereas the cultural manifestation framework is centred on core value, the authors propose to adopt this value-based segmentation approach to explore the articulation expressions across channels.

3. CONCEPTUAL FRAMEWORK

3. 1. AN ADAPTED FRAMEWORK

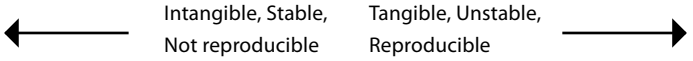
The proposed matrix, introduced in section 1.4, is shown in Figure 3. This extends Hofstede's Framework, in Figure 2, across a range of retail/distribution channels, in which each offering is deconstructed

in detail. In this instance, a study has been conducted in the UK cosmetics sectors.

Intangible, Stable, Not reproducible ← → Tangible, Unstable, Reproducible

	Value	Rituals	Heroes	Symbols
Beauty shop / SPA / Salon	Career Oriented, Well-being Pursued, Image Conscious, Hedonism	Pampering Treatment (e.g. Massages, Masking, Sauna, Sun tanning) Therapy, Exclusive Consultation, Skin test, Prompting sale, Peer competition, Image Copying (Fashion magazine), Scent burning	Successful career person, Celebrity, Lifestyles inspired by	Relaxing but professional environment, Woods, Plants, Exclusive signboard, Uniforms, VIP card, Product brands (L'Occitane, Decleor, Toni & Guy)
Direct Sale	Family focused	Communal networking, Partying, Demonstration within comfort zone, Reassurance, Prompting sale	Avon ladies, Neighbour-hood	Company brands (Avon, Amway)
Specialist shop	Well-being pursued, Adolescent Peer Belongers	No pressured greeting ceremony (Tea testing), Consultation, Demonstration, Trying & testing in info-rich environment, Seasonal sale & event, Points collecting, Deferred gravitation, Scent burning	Naturalist, Mother earth environment-talist	Greeting reception, Relaxing environment, Systematically shelfing products, Seasonal window display, Shop brands (L'Occitane, AVADA, Molton Brown, Bodyshop, Neal Yard, LUSH)
Department shops	Image Conscious, Hedonism, Adolescent Peer Belongers	Browsing & wandering in pressured environment, Prompting sale across counter confrontation, Seasonal sale & event, Impulsive buying, Consultation & recommendation, Skin test, Demonstration, Trying & testing (Youth preference environment), Peer competition, Image	Celebrity, Lead user	Poshly displayed product windows, Seasonal window display, Fashion brands (Christian Dior, Yves Saint Laurent, Chanel) Cosmetics Brands (Elizabeth Arden, Sisley, Clinique, Estee Lauder, Prescriptives, Bobbi Brown, Decleor, DARPHIN)

Increased Service Focus / Higher Pricing ↑



	Value	Rituals	Heroes	Symbols
Pharmacy	Health Conscious	Prescribing, Clinic advice, Consultation, Skin test, Trying & testing	Pragmatist, Pharmacist	Clean & hygienic environment, Terms (anti-aging, whitening), Lab Brands (VICHY, NEO-TEC, NUXE) Aromatic brands (DARPHIN, Decleor), Pharmacy brands (Boots, Parashop)
Supermarket	Family Focused, Income Retentive	Browsing & wandering, Trial & errors relying the label info, Volume Sale (buy one get one free)	Pragmatist, Saver, Scraper	Stacking products, Sale banners, Product brands (Nivea, L'Oréal, Garnier, Simple, Dove)
TAX-Free shops	Value Conscious, Income Retentive	Sale, Impulsive buying	Saver, Scraper, Opportunist	Systematically shelfing products, From Fashion brands to cosmetics brands
Catalogue / DM	Income Retentive, Stress Avoider	Browsing, No pressured engagement, Communal experience, Exclusive offering, Impulsive buying (airplane)	Nobody, Saver, Scraper	Non retail brands (Not heavily rely on symbols)
TV shopping channels	Family Focused, Hedonism	Prompting sale with time pressure, Pitch, Auctioning (the addictive nature similar to auction house) Testimonial, Experience sharing, Word of mouth, Exclusive offering, Impulsive buying	Presenter, Housewife, Craftsman	Sofa, Exclusive brands (Philosophy) Retail brand (Prescriptives, Decleor)
Internet	Income Retentive, Value Conscious	Price checking & value comparing, filtering info (or overwhelmed by), Volume Sale, Info searching, Risk conscious, Isolated purchasing, Word of mouth	Geek, Pro-amateur, Cosmetics critic	Diverse brands (Symbols are duplicated from service based channel rather than well established)

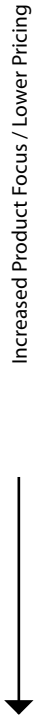


Figure 3: Cultural manifestations (lifestyles) cross channels based on values

Current embodiments of each channel appeal to particular value groups – identified in this instance through a survey using the value attributes and segments identified by Sun (2006) in the previous section. These are shown on the left hand of the framework.

3. 2. OBJECTIVES

The intention is that the framework is to be used as a generative tool in developing new service concepts which appeal across/to broader value segments. Many current approaches seek to mix channels, often as a 'knee-jerk' reaction, typified by the spate of online retail sites recently launched by supermarkets. Such strategies have limited results, often failing to appeal either to existing segments or to new ones, diluting/confusing the brand image, or failing to achieve the business model efficiencies of competitors within that channel. In many ways, attempting to shift product/service offerings across 'Long Tail' in Figure 1 is risky as it requires retailers/providers to experiment with more than one channel.

Instead, the authors advocate the design of alternative rituals within a given channel which appeal to a more diverse range of value-based segments. This has the advantage of focusing the providers' attention on their current channel, whilst encouraging a more creative exploitation.

Four key steps are identified:

1. identification of the target value segment for a given channel,
2. identification of the appropriate marketing approach required to introduce and incentivise uptake of the offering,
3. identification of appropriate symbols and heroes, and
4. the development of rituals which correspond to the target value system.

The final stage is a critical creative step, re-evaluating the potential within a channel from first principles, rather than adapting existing exemplars.

4. DISCUSSION: SYNTHESIS AND APPLICATIONS

By way of example, two service design studies have been undertaken by students at Salford, applying the proposed framework to polar segments to test the method's viability and potential value.

4. 1. SERVICE FOCUSED TO BRAND FOCUSED CHANNEL

The first example explores the opportunities and viability afforded by spa users to online offerings. In the past, cosmetics sales on online channels have not succeeded in delivering adequate experiences to spa/beauty salon consumers, particularly those who are career-oriented, image conscious or hedonistic.

Addressing each of the four steps in the previous section in sequence, direct mail approaches are thought to be inappropriate, by given the segment's resistance to junk mail and regard for privacy, even where this is based on beauty salon usage. Rather, messages and advertisements ought to be placed in those channels currently preferred by the value-segment, e.g. department shops, fashion magazines and Spa counters, to pull consumers into online (internet or mobile) channels.

Career-oriented consumers tend to go beauty salons and Spa's because they feel the need to be pampered and as a reward. Design students sought to empathise with these values in brainstorming sessions, generating experience concepts which exploited the natural strengths and physical limitations of internet and mobile platforms, in this case, capitalising on data capture and expert systems to monitor consumer cues and provide personalised tailored advice, tips and tests on a pre-emptive basis. The need for 1-2-1 relationships also opened up the possibility of 'SecondLife' consultant avitars in appropriate environments, compiling personalised event diaries, and gearing product selection, self-administered treatment programmes and regimes around key parties, dinners and dates.

4. 2. BRAND FOCUSED TO SERVICE FOCUSED CHANNEL

In the second example, the students considered the extension of value segments for specialist retailers into value-conscious and family-focused sectors, and thought it is especially relevant to be given traditional reliance by the latter on sales discount outlets typified by discount stores, TV shopping channels and internet retailers, which offer both lower prices and greater convenience. Increased use of websites by specialist shops have tended to increases sales volumes at the expense of the 'creation of experience'. The example therefore sets out to solve this problem by addressing how traditional retailers might better utilize new channels to increase footfall in their existing premises.

The target segments are potentially heavy users of online services and are resistant to junk mail, but highly responsive to 'word-of-mouth' testimonials, and therefore might ideally be approached through social networking sites such as 'mother and baby' sites.

Two distinct concepts emerged from brainstorming. The first capitalises on the low pressure, highly tactile environments associated with specialist retailers, which could be used to encourage families - predominantly mothers and children – to experiment and play, both in-store and at home. Product concepts might include family gift packs (for others) and fun-packs (for oneself), which encourage children to experiment by offering new scents, textures and fun rituals. Such products might be accompanied by targeted promotional events – perhaps after school – in which families can try out concepts.

The second concept focuses on increasing the perceived value of specialist cosmetic products and the rituals involved rather than discounting prices. Ideas here included emphasising the greater effectiveness of cosmetic regimes (and their impact on skin tone), the complementarity of differing products and how these can be used sparingly, and the availability of 'value refills' in-store.

The design teams recognised the risk of broadening ranges within a give retail environment, and the possibility of diluting identity, and looked means of refining existing ranges to appeal to both existing and new segment consumers. It is felt that the well-being seekers, family-focused and value-conscious are not mutually exclusive and share some common value sets. It is clear that the use of heroes and symbols needs to be consistent with brand image, and a number of concepts have been developed subsequently which bring appropriate symbols together.

5. CONCLUSION

The proposed framework has proved to be useful in articulating consumer culture and a means of generating potential consumer experiences which may enable service designers to broaden appeal for channels across more diverse value segments. The tool proved to be simple to populate, and provided key insights into experiences at symbolic, hero and ritual levels, allowing the design teams to better focus brand identity and consumer interaction. As such, the authors believe the framework may offer designers a concept generation tool to identify business opportunities/gaps and develop new service concepts. The tool appears to be of particular use in an educational environment, where it supports the development of understanding and realisation of creative solutions.

There are, however, a number of areas where more considerably more work is required. None of the concepts have as yet been trialled, and the next stage of research is to work with a range of companies evaluating some of the concepts generated. Should these be successful, the authors will develop further the concept of designing alternative rituals as a means of extending market share.

It is also questionable whether the use of the value segments identified by Sun (2007) in the cosmetics context is appropriate or exhaustive. The authors recognise that all of the segments may not be transferable across product sectors and national culture, and will undertake primary research into value identification within the

cosmetics sector. In doing this, they intend to adopt a bottom-up approach (Day, 1980) which uses cluster analysis to develop cultural manifestation patterns within both UK and Taiwanese consumers. The results should then provide cultural attributes which can be used to more improve the design of experiences.

REFERENCES:

Anderson, C. (2007), 'The Long Tail: How Endless Choice is Creating Unlimited Demand', Random House.

Ardill, R. (2007), 'Experience design by Ralph Ardill', Retrieved 10 November 2007 from Design Council, Web site: http://www.designcouncil.org.uk/.

Day, G.S., & Heeler, R.M. (1971), 'Using cluster analysis to improve marketing experiments. Journal of Marketing Research', 8, 340–347.

de Mooij, M. (2005), 'Global Marketing and Advertising: Understanding Cultural Paradoxes', 2nd ed., Thousand Oaks, CA: Sage.

Downs, C. Løvlie, L. & Reason, B. (2004), 'livework service innovation & design', Retrieved 10 November 2007 from Live|Work, Web site: http://www.livework.co.uk/glossary/.

Gupta, S. & Vajic, M. (1999), 'The Contextual and Dialectical Nature of Experiences', In: Fitzsimmons, J.A. & M.J. Fitzsimmons (ed.). New Service Development: Creating Memorable Experiences (pp. 33–51), Thousand Oaks: Sage.

Hofstede, G. & Hofstede, G.J. (1991), 'Cultures and Organizations: Software of the Mind', London: McGraw-Hill.

Hollins, G. & Hollins, B. (1991), 'Total Design: Managing the design process in the service sector', Trans Atlantic Publications.

Hollins, B. & Shinkins, S. (2006), 'Managing Service Operations: Design and Implementation', Sage.

Kahle, L.R. Beatty, S.E. & Homer, P. (1986), "Alternative measurement approaches to consumer values: the List of Values (LOV) and Values and Life Style (VALS)", Journal of Consumer Research, 13(December), 405–409.

Kamakura W. A., Mazzon J.A.(1991), 'Value Segmentation: A Model for the Measurement of Values and Value Systems', Journal of Consumer Research, 18, 208-218.

Luna, D. & Gupta, S. F. (2001), 'An integrative framework for cross-cultural consumer behavior', International Marketing Review, 18 (1), 45–69.

Mitchell, A. (1983), 'The Nine American Life Styles', New York, NY: Warner.

Novak, T.P. MacEvoy, B. (1990), 'On comparing alternative segmentation schemes: the list of values (LOV) and values and life styles (VALS)', Journal of Consumer Research, 17, 105–109.

Pine, B.J. & Gilmore, J.H. (1999), 'The Experience Economy : Work Is Theatre & Every Business a Stage', Boston: Harvard Business School Press.

Vinson, D.E. Scott, J. & Lamont, L. (1977), "The role of personal values in marketing and consumer behavior", Journal of Marketing, 41, 44–50.

Schwartz, S. H. (1992). 'Universals in the content and structure of values: Theory and empirical tests in 20 countries', In M. Zanna (ed.), Advances in experimental social psychology, 25 (1), 1–65, New York: Academic Press.

Sun, Q. (2006), 'A means-end chain approach to market segmentation within the Beijing mobile phone market and its implications for strategic market planning', PhD thesis, Art and Design School, University of Salford.

Comparing Learning Processes and Outcomes for Sustaining Cultures in International Design Education

Nicole Schadewitz

School of Design, Core A, The Hong Kong Polytechnic University, Hung Hom, Hong Kong, sdl.nic@polyu.edu.hk

ABSTRACT

This paper presents a comparison of design processes and outcomes produced by cross-cultural and interdisciplinary design teams in international summer workshops hosted by the Hong Kong Polytechnic University and organizations like the Convivio Network and the Institute for Information Design. It analyses design processes in relation to group dynamics and design outcomes in three case studies from design summer schools in Japan, Croatia and Hong Kong. Each case study is examined by looking at the team's design process, the team facilitation approach and how the group dynamics evolved. This is then related to the group members' background (culture, education, expertise, etc....) and the design context (project theme, locality, resources and constraints). In conclusion the types of design solutions, design processes and group dynamics are discussed in relation to sustaining culture through intercultural collaboration in education.

1. INTRODUCTION

Research has found that there are several phases in collaboration (Harris, 1999) that influence group dynamics. There are also studies that look at the influence of team members' background (Belbin, 1993) and learning styles (Wenger 1998; 1998; Kolb, 1976). However, there are only few studies that investigate the complexity of learning styles, collaboration processes and group dynamics in international contexts. As pointed out by Adler (2002), although culturally diverse teams are potentially more creative and productive, more problems in collaboration can arise from such constraints that need appropriate facilitation. In a recent study, Schadewitz et al. (2006) offered summer school organizers clear directions for structuring user-centered design summer schools, but provide little guidance on facilitation of group dynamics in diverse teams and effects on the solutions proposed by the team, which is addressed in this paper.

The paper explores determents on the design process and outcomes in three cases relating the observations to Harris' teamwork phases: Forming, Storming, Norming, Performing and Adjourning; Belbin's team roles: Chairman, Shaper, Plant, Monitor-Evaluator, Resource Investigator, Team Worker, Company Worker, and Completer-Finisher and Kolb's learning styles: Feeling (Experience), Acting (Experiment), Reflecting (Observation) and Thinking (Conceptualization). These concepts are highlighted throughout the text. Cultural background and expertise of members is also taken into consideration when analyzing the interactions in the teams and the emergence of and preferences for certain design ideas and solutions over others.

Dorst's design framework (2007) is utilized to interrelate teamwork, design process and outcomes produced in the cases in order to draw conclusions as to which cultures and in which ways culture is sustained in international design education.

2. INTERNATIONAL POSTGRADUATE SUMMER SCHOOLS

Each year, an interdisciplinary community of students, researchers and practitioners from various design, engineering, and social science areas gather together to participate in intensive two to four-week summer school sessions. Hosted by organizations like Convivio: The Human-Centered Design Network and the Institute for Information Design in Japan (IIDj), or Universities such as the Hong Kong Polytechnic University, these workshops are devoted to furthering Design Thinking across multiple disciplines. Although the theme changes every year and the participants vary, these programs remain focused on the teaching and practice of design in the context of the local community where the academy is conducted. In order to complete a time-bound, resource-limited design project successfully, while collaborating with multicultural and multidisciplinary teams, participants experientially learn a variety of design methods and processes as well as teamwork skills. Living with target users and facing real-world design problems, participants gain proficiency in interaction design principles despite the program's short duration. In addition to hands-on experiences, lectures from experienced practitioners further the learning process.

Figure 1 gives an overview of the design factors framing the three case studies discussed in this paper (Dorst, 2007). This will be discussed in detail next.

2. 1. CASE 1: REMOTE RELATIONS

In 2003, IIDj organized a design summer school in Ogaki, Japan. The international design team under consideration in this case was composed of two German researchers and designers, two Japanese design students, an Israeli researcher and a Hong Kong design student. The more experienced German researcher was appointed team facilitator for the period of two weeks in advance. Although the design topic was Remote Relations, the scope of the project was not prescribed.

Figure 1: Design factors of three case studies

In the Forming phase the entire school engaged in extensive icebreaking activities. Thereafter, the team adopted several work environments that allowed for experiencing different contexts for building relations among team members and discovering personal attitudes and preferences for collaboration and designing. Coming

from diverse cultural and professional backgrounds and speaking different languages, the team members witnessed that these differences sometimes created a feeling of remoteness in their relationships. Bridging these gaps became an important focus in the group work. The initial discussion of the members' personal interests in remote relations and tools for collaboration brought up an overwhelming variety of possible scenarios, ranging from remote care for the elderly to international business collaborations.

In the Storming phase, the team took advantage of shared present experience to work as a culturally and professionally diverse group, and decided to narrow the topic down to remote relations in workspaces. In this phase certain activity patterns and roles of team members were emergent. The Israeli researcher took a Shaper position and continuously proposed new ideas and thoughts, which were sometimes difficult to understand for Japanese students. The German designer and researcher then took the role of a Mentor-Evaluator to Reflect on and communicate ideas to those students. Although the team facilitator attempted to equally integrate all members in brainstorming and discussion sessions, some members, whose language and Conceptual Thinking abilities were not as quick and instant as the others', took on secondary roles such as Resource Investigator. This also was apparent in the Performing phase where these team members took on roles such as Team Worker and Completer-Finisher. At some points in the project, junior design students withdrew from the process. They did not align with the content development because of their limited Abstraction and Conceptualization abilities. The Mentor-Evaluator and Chairman were able to integrate these members in Experimental learning and collaboration activities that included building of prototypes, sketching and rearranging physical spaces to explore abstract ideas (Figure 2).

To facilitate understanding of the outcomes of two weeks of in-depth research, the group presented two exemplary concepts: Digital Trash Recycling and Interaction Table, at the final presentation. The convergence on two concepts influenced the team dynamics in the Norming and Performing phases of the teamwork. The Shaper, Facilitator and Mediator, as more experienced designers

Figure 2: Experiments with spatial relations in collaboration

and researchers, had a strong influence on the choice of concepts presented. Furthermore, these members were representatives of Low Contextual Communication cultures in which the ideas are expressed explicitly in communication. The less experienced team members were representatives from High Contextual Communication cultures, were ideas and concepts are implicitly interpreted and communicated in the context of the message. This condition was used to include weaker members after the convergence on design ideas by contextualizing the ideas into visual design scenarios.

Figure 3: Comic style design scenarios to explain design concept

These proposals were presented in scenarios drawn in comic book like stories (Figrue 3) to provide fictional evidence for future design opportunities. Simple visual or functional prototypes helped to visualize how concrete products could look and be used. Figure 4

illustrates a few design ideas that were incorporated into the Interaction Table design concept. The design team envisioned a collocated physical table that enables tangible interaction with digital contents. Contents could be manipulated directly at the table individually, in small groups or in large-scale collaboration with all attendees. Contents could also be shared with remote desktops. In addition, a history of the collaboration steps could be consolidated in retrospecte.

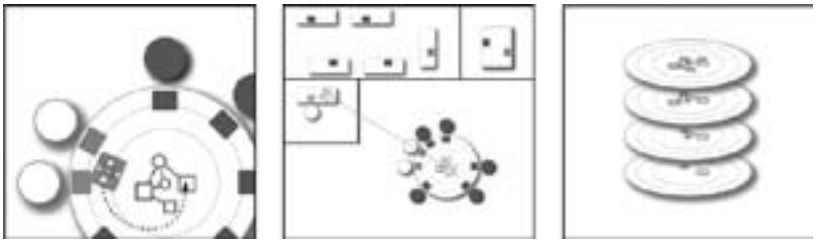


Figure 4: Examples of the Interaction Table design concept

2. 2. CASE 2: COMMUNITIES IN TRANSITION

In 2004, Convivio organized a design summer school in Split, Croatia. The international design team under consideration in this case was mainly composed of north and southeast European design students and researchers, as well as one US design student, with varying degrees of expertise and specialization. The general topic of the school was Communities in Transition. The scope of this summer school was closely tied to societal and sustainable design problems of the locality at which the academy was held. The organizers and atelier facilitators actively promoted a human-centered design approach in the group work.

The team formed through social activities that were related to exploring the locality and team members' backgrounds. Learning styles related to Experiencing and Reflecting on the feelings for people and environments prevailed in the Forming phase. Local design students acted as local informants. However, in the following Storming phase the ability of the local design students to correctly interpret all observations was questioned. At this point, the Chairman

introduced user-centered design methodologies, which supported the team's engagement with locals and tourists to explore the project's scope: Hospitality and Sustainable Tourism.

In the Storming phase, team member roles evolved quickly. There were several Shapers, who dominated discussions, but the Chairman (facilitator), who was a Swedish professor, promoted democratic views on participation and suggested rearranging the entire team into smaller action teams to each discuss one idea of the several possible topics that evolved in brainstorming sessions in detail (Figure 5). Results and action items (such as probes, prototypes and interviews) were discussed again in the entire team and roles were redistributed. This promoted an inclusive participation of all, including quieter members.

Figure 5: Facilitation of discussion and brainstorming with post–it notes

Such Norming activities helped to encourage divergent Thinking in the team while exploring ideas in detail. Due to this emergent teamwork structure, subgroups discovered in the Performing phase that many ideas were actually related and could be presented within a design scenario. In this phase, team roles changed once again. Previously quiete members (Plants) took over more explicit roles such as Resource Investigator, Team Worker, Company Worker, and Completer-Finisher, who introduced Experimental design activities into the process. This process and team dynamics had a strong influence on the final proposed solution.

The design team in this case proposed design solutions that support the communication between the locals and their guests, the tourists. The solutions projected a positive impact of communication across

communities on sustainable tourism in Split, Croatia. Several concepts were explored, including the following: A system for identifying and sharing key spots in the city was proposed as a means for introducing tourists to "hard-to-find" local places. A general idea of changing the perception of a geographical place by changing its purpose for a certain period of time was actualized when they used a daytime market place as a venue for theater performances in the evening. And finally a concept was developed to let locals and tourists collaboratively create a continuing story thorough interacting with e-boards placed throughout the city. These design suggestions were then united into a single video-photo story to convey the workability and interconnectedness of the communication concepts in real setting scenarios. A video-photo story (Figure 6) was chosen to present the concept of a design space, suggesting that there is an imaginative space along certain design dimensions or constraints in which a variety of possible design solutions exist.

Figure 6: Design scenario describing a design space of related solutions

2. 3. CASE 3: DEVELOP NOT DESTROY

In 2005, professors at the School of Design, of the Hong Kong Polytechnic University organized a design summer school in Hong Kong and Keyi Village, Yunnan, China. Each of the four participating international design teams was composed of two design students and

two business students from Hong Kong, as well as two Dutch, two Finish and two German design students. The topic of the program was Develop not Destroy. The organizers set a clear scope for the project including the development of a business plan supported by designed products, services or systems supporting sustainable development of businesses in Yunnan minority villages. The project also had clear deliverables such as product prototypes, a project report and a five-minute trailer advertising the proposed business plan. The teams were reminded frequently that this was a real-world project with real world consequences.

The Forming phase was marked by secondary research activities and informal leisure activities before the teams traveled to Yunnan, China to live with the villagers of the Chinese minority culture of Yi people for a few days. This coincided with discussions on how the research trip should be planned and carried out mainly among the tutors, which started an extended Storming phase in this case. A constant renegotiation of team roles, i.e. who is the Chairman or Shaper, caused confusions in the design process on the students' side. Students nevertheless learned about the local culture by Experiencing the life in the village (Figure 7). Artifacts were collected, interviews were conducted and traditional crafts techniques were explored.

Figure 7: Living in the Keyi village, Yunnan, China.

These Experiences helped students in the Norming phase to Reflect on gaps in the local businesses in order to Conceptualize and suggest sustainable product developments based on local traditions. In this period, students reported that they often fell back on their respective schools' traditions of designing. For example,while the Europeans preferred a Reflective and Conceptual way of working, Hong Kong

students engaged in parallel hands on activities and Experimented with materials and craft techniques. This caused conflict in teamwork but also informed the emergence of certain team roles such as Chairman and Shaper (European students) or Completer-Finisher (Asian students). Local students often took over the role of Resource Investigator. This might also be explained by the Past Time orientation of many European cultures, which promotes reflection, and the Present or Future Time orientation of many Asian cultures, which supports hands-on activities.

The aforementioned values and attitudes translated into the outcomes proposed by the teams. Taking one team as an example, the design process was inspired by raw materials such as calabashes and carving and wood construction techniques from the Yunnan region. Although the use of materials and production techniques were agreed upon, the team fell out over possible design directions. Some students were concerned about their project marks and voted for adopting the tutors' advice. However, different tutors gave opposing advice, which left the team in confusion. Thereafter the team decided to neither rely on tutors' suggestions nor go with traditional design methods, but invent their own. The team designed a set of calabash lamps (Figure 8) targeted at overseas markets. The business model included a non-profit-organization as distributor of raw materials, accessories and final products that would give a high margin of profit to the villagers.

Figure 8: Set of calabash lamps in composition.

3. COMPARISONS AND DISCUSSION

A comparison of the three cases indicates that inclusion and collaboration with a local community for and with which one is designing is essential for sustaining local cultures through design education. The consideration of local cultural constraints and integration of international students, facilitators and local stakeholders as equal forces into the design process provides for varying learning needs.

Design concepts that support the integration of ideas into daily practices empower local businesses, authorities and other communities to further develop and take up proposed ideas ideally by involving locals in the design process from the beginning. If continuous feedback and integration of local communities cannot be granted a presentation, debriefing and steps for further actions should be planned in the Adjourning phase of the collaboration.

The cases also showed that the organizational culture of the school influenced the team culture and balanced varying cultural backgrounds. In cases one and two, team facilitators promoted participation based on strong democratic values and integration and balanced cultural differences in work attitudes and learning preferences. In the third case, where multiple tutors replaced one-per-team assigned facilitators, the team had to find its own balance in collaboration.

The proposed design solutions were strongly influenced by the school and team cultures. While in the first case the foci were set by dominating individuals, the participants in case three had to rethink the design proposal due to their conflicting goals. The second case successfully integrated diverse ideas into a design scenario with which the majority of members could identify. Nevertheless, cases one and two only steered personal learning experiences and transfer of knowledge to individuals in the locality. Case three succeeded in further developing ideas in a larger scale with the help of the local authorities, who were integrated from the beginning of the project.

An international research culture and ongoing design collaboration among team members is sustained in the Adjourning phase when collaborative reflection on the design process is encouraged and team members are able to relate to the design outcomes in multiple ways, such as transferring them to their individual research or design work, or developing them as business ideas.

CONCLUSIONS

Intensive design summer academies like this are essential, as they offer an environment for multiple learning and interaction styles such as Experiencing, Experimenting, Reflecting and Conceptualizing, that is difficult to create in other educational settings. However, developing and implementing such programs in a way that optimizes the learning process can bring several challenges that must be overcome in order to maximize the experience. Conversely, negligence of these challenges might lead to an unsuccessful learning situation. International design education inherits not only logistical, personal and social challenges, but also the challenge of engaging in co-creation of ethics in design. The designer is not educated to be a simple creator of aesthetic artifacts but a manager and value creator in organizations and society. Social engagement and responsibility, localization of design problems and scopes and international teamwork further the understanding of increasingly complex design problems and thinking in design education.

REFERENCES:

Adler, Nancy J. (1996) International Dimensions of Organizational Behavior, Wadsworth Publishing Company, 3rd edition.

Belbin, M. (1993). Team Roles at Work. Butterworth-Heinemann, Oxford.

Dorst, K. (2007) Patterns and Methods. 2nd International Conference of the International Association of Societies of Design Research, Hong Kong, November 12–15.

Harris, Thomas E. (1999). Small group and team communication. Boston: Allyn and Bacon.

Kolb, D. A. (1976) Learning Style Inventory Manual. Boston, MA:McBer.

Schadewitz, N., Adler, P. J., Moncur, W. and Roberts, J. (2006). The "STAR" Interaction Design Summer Schools Framework. Proceedings of Wonderground, the Design Research Society Conference, October 31 – November 4, 2006, Lisbon, Portugal.

NOTES:

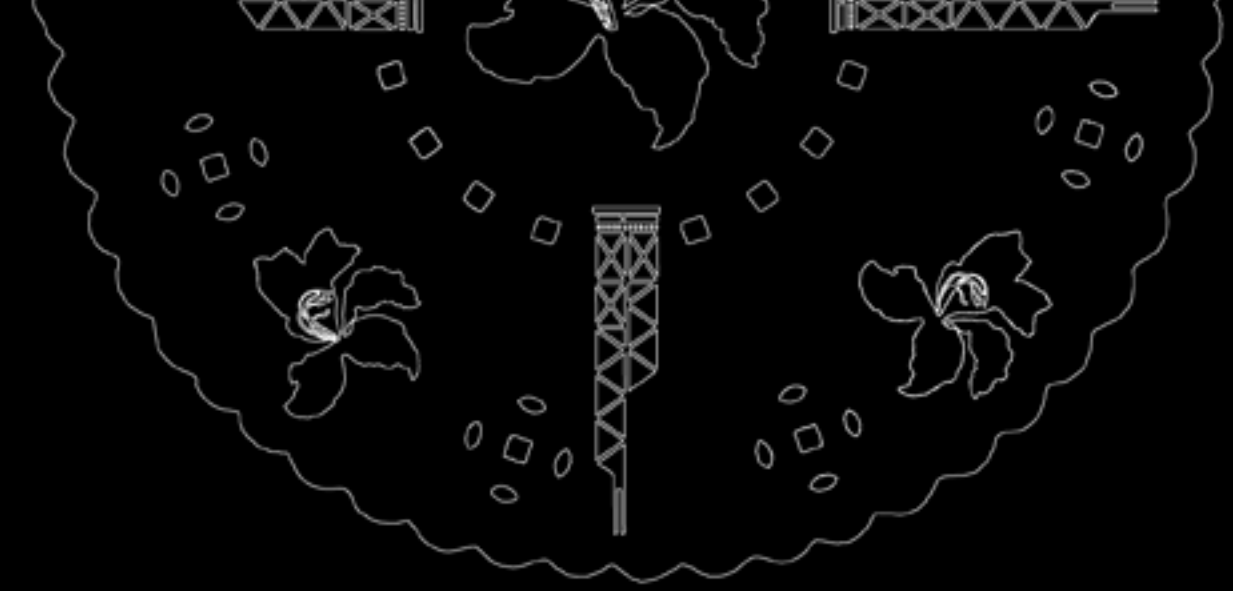
The Information Design Summer Academy in Japan was organized by the Institute for Information Design in Japan (IIDj), http://www.iidj.net/SA03.

The summer school in Croatia was organized by CONVIVIO, the European Network of People-Centered Design of Interactive Systems, http://www.convivionetwork.net/.

The IDO summer school was organized by School of Design, The Hong Kong Polytechnic University.

All websites were accessed in March 2007.

Cultural Awareness for Design Students



The Folklore of the Barranquilla Carnival through Design

Tania Catalina Delgado

Universidad del Norte, Barranquilla – Colombia, taniacatalina@yahoo.com, tdelgado@uninorte.edu.co

ABSTRACT

Like many catholic cities in Latin America, Barranquilla is known for its carnival which is the heritage from the three cultures that met in the Caribbean of Colombia centuries ago: Indigenous, Spanish and African. Some years ago UNESCO gave this Carnival the category of a Masterpiece of the Oral and Intangible Humanity Heritage thanks to its cultural diversity (result of the mixture among three cultures) and the risk of disappearance of the true folklore, provoked by the foreigner influence which is getting stronger inside the traditions.

Some of the goals of this declaration are related to the protection of this heritage, involving the community which is a vital component in this process. As members of this community, the Industrial Design program at Universidad del Norte (Barranquilla – Colombia) is trying to take part of this protection since January of 2005; this program has created a workshop where their students design products inspired by the research and analysis of the Carnival.

The goals of this project are divided in two main areas, where the first one approaches the Industrial Design students to their own culture

and the second one establishes aesthetic characteristics from the analysis of the Carnival which can generate an aesthetic identity in the products designed.

This research and analysis of the cultural wealth of the Carnival have involved not only the intangible elements (such as mythology, music, dances, etc), but also all the objects which are the perfect complement of the intangible activities (like costumes, masks, musical instruments, accessories, parade floats,, etc.) which have been created by the communities engaged with the Carnival throughout the history.

During these two years these project have been the beginning of an interesting process where the students have identified a wide number of features that have confirmed the fascinating mixture of the three cultures mentioned and the remarkable contribution of the tropical and massive nature that has been the context and the inspiration of myths, costumes, masks and other intangible and tangible elements of this Masterpiece of the Humanity. After that stage the students start the designing process where the aesthetics features found in the research phase are the main characters of the products; thanks to sketching and modeling, the students develop products for daily life and not only for the Carnival occasion (furniture, clothes, crockery, architecture, etc).

This process is looking for an identity inside the context where the objects have values that go further than functionality because they have been designed according to the cultural heritage alive in the Carnival. The results have been quite interesting, there have been some exhibitions but the products are still considered academic exercises; the next stage of this project is looking for institutions which are able to sponsor the development and production of these objects and the final purpose will be accomplished when the products designed can be found in private and public places of Barranquilla creating a connection between people and folklore.

Keywords: education, creativity and culture

1. PAPER

Like many catholic cities in Latin America, Barranquilla is known for its carnival which is the result of three cultures heritage that met in the Colombian Caribbean centuries ago: Indigenous, Spanish and African. The frame of this ethnical connection was the richness of the tropical environment which became an interesting background of the new developing culture, all the influence from diverse traditions was complemented with the exuberant nature and this can be perceived not only in the intangible elements of the Carnival such as dances, myths, music, beliefs, etc., but also in the tangible objects (instruments, costumes, masks, accessories, parade floats, etc) which make part of this cultural wealth and have been created by the communities engaged with the Carnival through the history.

Figure 1: Cumbia – Indigenous and African dance [1]

Figure 2: Marimonda - Character which represents the mixture between African and Latino American animals [2]

Figure 3: El Congo – African joke of the Spanish race [3]

Figure 4: Parade Float – Evidence of the tropical nature [4]

This multicultural unite can be recognized in the myth of *El Hombre Caimán* (the alligator man) where in a small town close to the river there was this man who secretly observed the girls playing in the river; worried about being caught, he decided to visit a witch who gave him two potions; one transformed him into an alligator and the other one broke the spell. One day with his new appearance, he was looking at the girls and unluckily the bottle with the potion that broke the spell fell down and since that day his body was half animal and half human. The combination between the shaman powers used in the African and Indigenous beliefs, and the tropical nature, makes this story a perfect example of the syncretism which every year is remembered in the parades of the traditional celebration.

The unquestionable cultural wealth gave UNESCO enough reasons, and some years ago the Barranquilla Carnival got the category of a Masterpiece of the Oral and Intangible Humanity Heritage thanks to its cultural diversity (result of the mixture among the three cultures mentioned above) and the risk of disappearance of the true folklore, provoked by the foreigner influence which is getting stronger inside

Figure 5: The Hombre Caiman (alligator man) group in the Carnival [5]

the traditions with the wrong idea of refreshing and updating the Carnival. Certainly, these actions are modifying the natural evolution of the folklore and are responsible of a misunderstanding where the new generations are the most confused about the roots of their own culture. Several examples of this situation can be seen frequently in every parade where the companies that sponsor some groups prefer to use costumes and music completely different to the traditional ones because throughout these images they show international icons which advertise them but at the same time this situation makes to vanish the genuine elements of the Carnival.

Some of the goals of the UNESCO declaration are related to the protection of this heritage involving the community which is a vital component in this process. As members of this community, the Industrial Design program at Universidad del Norte (Barranquilla – Colombia) is trying to take part of this protection since January of 2005; this program has created a workshop where their students design products inspired on the research and analysis of the Carnival.

During these two years this project has been the foundation of an interesting process where the students have identified a wide number of features that confirm the fascinating mixture of the three cultures mentioned above and the remarkable contribution of the tropical and massive nature that has been the context and the inspiration of myths, costumes, masks and other intangible and tangible elements of this Masterpiece of the Humanity. After that stage the students start the designing process where the aesthetics features found in the research phase are the main characters of the products, their qualities go

further than functionality because they have been designed according to the cultural heritage alive; thanks to sketching and modeling, the students develop products for daily life (furniture, clothes, crockery, architecture, etc) and not only for the Carnival occasion like it has been managed since its beginning.

The case of the *Torito Coffee Table* as the students call it, was the result after the analysis of a traditional character of the Carnival: the Torito, or little bull in English, which is personified by the people with heavy wooden masks full of bright colors and geometric decorations. The process started with the collection of pictures of different Torito masks that the students observed and analyzed, searching and detecting the essential patterns (shapes, colors, textures, compositions, etc.) that appear among diverse masks; this analysis of the aesthetic was developed while the students look for the roots of the personage that help them to understand the mythological significance of the character and all its distinctive characteristics mentioned before (aesthetic ones). The result of this first stage can be summarized in two parts: the understanding of the Torito's mask origins, which help the students to discover its mythical power in the African agriculture, and the selection of aesthetic features which represent the essence in the composition of different masks. After these aesthetical and mythological findings the students started the product development with the shapes, colors, textures, symbolism, etc., found throughout the research and analysis; the result was a coffee table which besides its functionality, is a design that revokes their cultural roots despite the contemporary composition of the object. Besides, this design was conceived with an important element, which contains plants because the mythological relation between nature and the Torito mask could not be forgotten in this product.

Another example can be seen in the *Sombrero Vueltiao Shelf*, where the inspiration source was a traditional hat use in the Caribbean coast of Colombia, which is a fundamental element of the costumes in different dances that make part of the Carnival. The process was exactly the same described in the *Torito Coffee Table* and took the students to an interesting research where they explored the

Figure 6: Torito coffee table

weaving techniques, the patterns used for the surface decoration and the flexibility qualities of the weave which make the hat to change its shape according to the use. The product developed was a shelf that uses the decoration patterns (of the hat surface) in its composition in a practical way because they make the shelf capable to change depending on its use; and like in the Torito Coffee Table the composition of this design revives the aesthetic essence of the *Sombrero Vueltiao*.

The products designed in this process are the beginning of a meaningful stage where the enrichment of the Barranquilla context in terms of design (architecture, clothing, furniture, etc.) is the preface of a *design identity inside the city* with elements taken from their own folklore; the idea is to create a relationship between the Barranquilla connection with the Carnival. The benefits of this situation could help to rescue and preserve the culture and would constantly revive (on inhabitants with the objects in their surroundings as deep as their the inhabitants' minds) the authentic elements that make part of their cultural diversity; but the most important expected impact in the long term is the development of a concern which commit the inhabitants

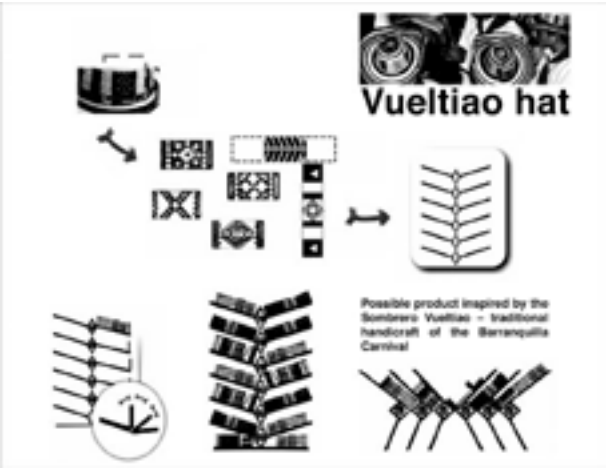


Figure 7: *Sombrero Vueltiao* shelf

Figure 8: Congo – Bottle opener

with the care of their city and folklore, and hopefully will encourage a chain of projects for the improvement of different aspects inside the city because that is the place which throughout all its objects revive the delicate jewel of their culture.

On the other hand, it is quite important to mention the approach got between the Industrial Design students with their own culture throughout the development of this project because they have realized the value of their traditions. The challenge is the culture preservation and this workshop makes a contribution through the young generations that study Industrial Design, they are involved in this important process because they are in charge of the future perpetuation of their identity, which is an vital element of the societies as Ms Khalida Toumi, Minister of Culture of Algeria, concluded in the first session of the Intangible Heritage Committee in Algiers: "*intangible heritage is to the identity of peoples what the DNA map is to the human genome*".

At this point, it is important to remark the participation of Universidad del Norte as an educational entity that has assumed the responsibility of an academic activity where the students learn about their heritage and its value throughout educational and creative courses which make them appreciate their patrimony and realize the significance of their involvement in different actions related to the protection of their culture. The University, as member of the community, is one of the responsible of this challenge; and as the UNESCO Intangible Heritage Committee exposed, the most successful actions are the ones where the community is the main character because it has created and carried all its cultural expression (tales, myths, medicines, dances, handicrafts, etc.), throughout centuries. The benefits for the community are priceless because its members learn to realize the importance of their contribution; they integrate with other members engaged with this purpose and their opinions become an essential part to accomplish the safeguarding activities.

An interesting Colombian case that joins all these concepts of education and cultural identity (inside the cities), has been developed with the artistic production of *Fernando Botero* which despite all the international criticism about his technique has got an emotional place in the city where he was born: *Medellín*. The themes of his paintings and sculptures are precise images of the traditional daily life in *Medellín*, and the citizens inevitable see their life reproduced in every scene of these works. The connection with the people creates a positive feeling inside the city because they realized that their traditions have been placed in the position of a masterpiece internationally renowned. The impacts have gone further than the recognition of the traditions that can disappear, at the moment the community is more conscious of its identity as a cultural group and the meaning of its preservation. Few years ago, *Fernando Botero* donated twenty three massive sculptures to the *Berrio Park* (in *Medellín*) which have become part of the city identity and right now the citizens strongly appreciate and take care of them. Another part of this project was accomplished when the Museum of Antioquia was reopened after the donation of some Botero's private collections; five thousand children from everywhere were the first guests with *Fernando Botero* who offered them the first guided visit in the Museum. These moments established the significance of the community and specially children inside the safeguarding activities because they can perpetuate their own identity thanks to the knowledge of their heritage.

This example is helpful to understand that there is another stage in this Carnival project where other members of the community (different to the academic ones) participate in the production of the products designed by the students of Universidad del Norte; this members have traditionally created and made the objects of the Carnival and with their knowledge learned through generations they have produce masks, parade floats, dresses, accessories and other elements which show the wisdom of families dedicate to these works. The importance of this involvement can be understood with the conclusion made in the first session of the Intangible Heritage Committee in Algiers: "*Some noted their own national experiences*

where safeguarding efforts developed with communities succeeded, while those developed without community involvement or consent failed. Finally, some Members suggested that the criteria should focus on the substantive involvement of communities rather than the formalities of demonstrating their consent; if they were truly involved at all stages that was the best evidence of their consent."

Figure 9: Artisan making a traditional mask [6]

Figure 10: Artisan making a traditional mask [7]

At this point, it is necessary to clarify that all this actions cannot stop the evolution process of the culture; Ms Khalida Toumi Minister of Culture of Algeria (mentioned before) emphasized that the Intangible Cultural Heritage is: "*always a work in progress, evolving, cumulative and structured*"; these facts support the contemporary results of the workshop developed in this project, because although the objects designed include the symbolic and aesthetic essence of the Carnival, they were conceived for a modern society which has transformed during its history. The innovation and creativity are strong elements for this development that are able to keep away the global influences and to generate interesting objects, characters and other elements which can be included in this Masterpiece of the Humanity as modern answers of the evolution.

Besides the local impact that the UNESCO declarations have created, there is an international recognition that reveals the cultural richness of many places in the world which can be an interesting advantage for the marketing of the objects designed with the spirit of the Carnival, the goal is to create future phases focused to offer these products in international markets where they will be able to compete because their design qualities are quite unique and they have the support of the UNESCO declaration. Naturally the Carnival will receive more benefits with this stage and the members of the community in charge of the manufacture will have the possibility to enlarge their production, they will work not only for the Carnival time and the city of Barranquilla but also for the rest of the year and other worldwide places, which means an improvement in their incomes. The incentive will be more than an emotional feeling about their past because their work will give them better profits and it will be appreciated as part of the Intangible Heritage present in the Carnival.

Finally, it is important to say that the project is still in the design stage, there have been some exhibitions but the products are still considered academic exercises; in January 2008 the development and production phases will be sponsored by COLCIENCIAS (Colombian Institute for the Development of Science and Technology) but the different goals will be accomplished when the products designed can be found in private and public places creating a connection between people and folklore with the contribution of the community's members which make part of this creative, productive and emotional process.

REFERENCES:

[1] http://www.carnavaldebarranquilla.org/previo/NOTI_61.html.

[2] http://www.carnavaldebarranquilla.org/previo/noti_19.html.

[3]http://www.unesco.org/culture/ich/index.php?lg=ES&pg=00084&pan_id=00163.

[4] http://www.jansochor.com/reportaze-fotografie-2006/Carrozas-1.html.

[5] Fundación Carnaval de Barranquilla, Carnaval de Barranquilla, Obra Maestra de Patrimonio Oral e intangible de la Humanidad, June 2002, pag.94.

[6] http://www.toromiura.com.

[7] http://www.toromiura.com.

Samper Martinez, Carnaval Caribe: Exploración del Carnaval de Barranquilla, Quito y Santa Fe de Bogotá: Andes y Diego Samper Ediciones, 1994.

García, Caras y Máscaras Vol1, Enrique García ediciones.

García, Caras y Máscaras Vol2, Enrique García ediciones.

Huertas, Carnaval de Barranquilla, Hernán huertas ediciones.

UNESCO, The Intangible Heritage Messenger, no.1, 2006.

UNESCO, The Intangible Heritage Messenger, no.2, 2006.

UNESCO, The Intangible Heritage Messenger, no.5, 2007.

UNESCO, The Intangible Heritage Messenger, no.6, 2007.

González, Barranquilla Carnival: Patrimony of the Humanity, Huellas issue.

Fundación Carnaval de Barranquilla, Carnaval de Barranquilla, Obra Maestra de Patrimonio Oral e intangible de la Humanidad, June 2002.

Aikawa, The UNESCO Recomendation on the Safeguarding of Tradicional Culture and Folklore (1989): Actions Undertaken by UNESCO for its Implematation.

Strengthening Cultural Awareness through Design Education — The Macao Story

Wilson Chan

Macao Polytechnic Institute, School of Arts, Rua de Luís Gonzaga Gomes, Macao, hcchan@ipm.edu.mo

ABSTRACT

For a long time Macao has been under the shadow of Hong Kong; its economy, culture and characteristics had never been fully revealed. In 2002 when Macao SAR government granted three casino operating concessions, and in 2005 when the historic center of Macao was inscribed as a UNESCO World Heritage site, Macao seems to have a clear market position within the region, which is to develop a city with entertainment and tourist attraction with its unique and rich cultural background.

Design education in this new era of Macao's booming economy must take the opportunity and responsibility to, first, equip our designers with the skills to fulfill the higher design standard; second, to nurture the new design generations to be aware of their own culture in order to develop design with stronger Macao originality which eventually will draw international attention and build our own identity.

Keywords: design education, Macao, sustaining culture

1. MACAO'S HISTORY AND IDENTITY

Starting from a fishing village in the 16th century, Macao had once experienced its golden age as one of the most important trading post in Asia by the Portuguese settlers. The Portuguese once had traveled as far as to Japan, Malacca, Goa, Mexico and Lisbon from Macao. During the mid–17th century when Japan closed its country to any foreign trade, at the same time the Portuguese had lost Malacca, an important trade post in South East Asia, to the Dutch, Macao as a trading post in China has quickly declined. In contrast in the mid–18th century, Hong Kong administrated by the British, took over Macao's position as a new trading post in South China. Since then Macao has been taking a different path into history.

Figure 1: The Praia Grande of Macao in the 19th century

In the mid–19th century the Portuguese government in Macao legalized gambling in the city, but the first gambling monopoly concession was granted in 1937, from then on Macao had become known worldwide as the "Monte Carlo of the Orient". During the twentieth century the old Macao industries included fishing, manufacturing fire works, matches, incenses and light garment manufacturing. The general economy and social structures of Macao has not changed since then, while Macao was passing through a quiet

and peaceful period, Hong Kong in the twentieth century has quickly raised its status to Asia's financial center.

1. 1. MACAO'S RAPIDLY CHANGING ECONOMY

Excluding the casino monopoly before 2002, Macao's enterprises have always composed of small business operations or mid-sized enterprises and manufacturing, some can even be a family run business. Thus gambling plays an important role in Macao's economy. The general economy in Macao suffered due to the unstable future of the city and intense casino related crime incidents in the city before and right after the change of sovereignty. The economy grew in negative figures.

Figure 2: The Venetian Macao right before its grand opening in 2007

On December 20th 1999, Macao returned to China after 442 years of Portuguese rule. Due to the previous government's non active and inefficient administration, after the change of government, there were strong expectations from the citizens of Macao to the new SAR government. In 2002 when the existing gambling monopoly concession expired, the Macao SAR government granted three casino operating concessions plus three subconcessions; there are now a total of six different companies operating in Macao's gaming business.

This competitive business environment has never happened before in Macao when the gaming business was still a monopoly. Since then the Macao economy has rocketed to a record height in history, especially in May 2004 when Sands opened its first casino in Macau. The "Sands Effect" has started a new era of Macao economy and from then on Macao's image has been promoted to a more international level.

1. 2. MACAO'S CULTURAL HERITAGE

Gambling plays an important role in Macao's economy, and now developing the city of Macao with entertainment business and tourist attraction seems to be the market positioning in the region. Macao's identity is now known as the "Asian Las Vegas". Macao has had a long history of cross cultural interaction between the Chinese and Portuguese people. Citizens were influenced by the slow paced and peaceful southern European life styles and government policy. In many ways you can see cultures of the east and the west blended together or existing side by side. And thanks to Macao's slow economy and development during the 20th century; many streets and buildings in Macao are able to be kept in their own withered, but original state of existence.

In 2005, twelve historic monuments of Macao together as a historic center were inscribed as the UNESCO World Heritage site. Macau's identity has been uplifted one step higher to another level of international attention. Macau with its beautiful mix of Chinese and Portuguese architectures, cultures and life styles had become a new ingredient to support its backbone economy—the gaming industry and tourism.

Figure 3: One of the most famous monuments of Macao's World Heritage, the Guia lighthouse

1. 3. LIVING IN MACAO UNDER THE HONG KONG INFLUENCE

As a Macao citizen, it is very difficult not to compare Macao with its neighboring city Hong Kong, especially since after Hong Kong and Macao had both been returned to China in 1997 and 1999 respectively. The city of Hong Kong and Macao both became Special Administrative Regions of China. For the last century Hong Kong and Macao were always mentioned together for their unique political situations, Hong Kong was under the administration of the United Kingdom and Macao was under Portugal. During the second half of the last century Hong Kong was administrated to be a manufacturing and financial center by the British. However Macao for the past century with declining economy has not been promoted for any identity except the casino operation.

Although the Portuguese and Chinese in Macao had a long history of interaction, and it is true that in the city of Macao many representations of Chinese and Portuguese cultures can be found, most Chinese citizens of Macao do not understand much about Portuguese cultures and language. During the long period of Portuguese administration in Macao, there were some minor segregation policies such as using the Portuguese language as the only official language for all legal documents and government offices;

education systems in private institutions were conducted in Chinese and English; government subsidized education was in Portuguese; Portuguese libraries, book stores, activity center, etc., were the resources and benefits for only Portuguese speakers. No doubt, the Portuguese government would like to protect their subjects' privilege and employment by insisting on the use of the Portuguese language as a barrier, and in fact the Portuguese language is never a common language in the city. Most people did not know a single Portuguese word. Macao can be called a city with the Chinese and Portuguese living like neighbors, but they were silent to each other. Deep down in the minds of many Macao citizens they have very little understanding of Portuguese cultures.

In fact cultural influences from Hong Kong to Macao are very strong, especially for the past two to three decades; even after Macao's turnover, influence of Hong Kong culture in Macao is still very obvious. One of the most efficient channels of Hong Kong cultures being imported to Macau is through television broadcasting, news and publication. Macau has about half a million people and local television production, newspaper and magazines publication are technically not diversified; therefore citizens in Macao are very used to enjoying Hong Kong television and radio programs, reading Hong Kong newspapers, books and magazines, enjoying Hong Kong's music and cinema production. Hong Kong culture can even lead the culture of Macao politically; in many aspects the Macao government often reference many decisions or policies from Hong Kong. Financially, Hong Kong currency is fully accepted in Macao. Many businesses and industries use HK dollars for business transactions, e.g. the sale of automobile, property, home appliances and electronic products, etc. In fact it is very difficult for people in Macao to think of their own identities when many of them wake up every morning finding a Hong Kong newspaper lying on their breakfast tables. One of the reasons why people in Macao are open to Hong Kong culture is because most Chinese in Macao were educated in private schools with dual languages – Chinese and English. Hong Kong is also a bilingual society with Chinese and English. Hong Kong and English cultures are much easier to understand for most people in Macao.

In the twenty first century, Hong Kong and Macao are obviously going into different directions in terms of city development and positioning in the region. Hong Kong is a world classed financial center and Macao is a city of culture, entertainment and tourism. Many people will associate Macao with the city of Las Vegas in the US; although the Macao economy relies very much on the gaming industry like Las Vegas, the rich and unique cultures and history plus the valuable legacy of Macao's world heritage will sure lead Macao's future development quite different from any other city in the world.

Macao's status seems to be in the shadow of Hong Kong in terms of geographic scale, economic success and cultural identity. Citizen of Hong Kong in general are more culturally aware and culturally confident, but Macao's cultural awareness is slowly growing in the public of Macao with the growth of the city's economy. With the unique cultural background and new economic development, Macao will develop its own cultural identity, an identity that represents a whole new vibrant city in Asia.

2. DESIGN BECOMES IMPORTANT IN THE FUTURE OF MACAO

During the long period of economic recession before and right after Macao's turnover to China, Macao lacked large foreign investment; therefore commercial design had difficulty surviving. Macao's design industry was basically restricted to very small operations. Commercial design and advertising houses were working on low to medium budget design, and the design standard were usually not very high. During this low tide of Macao's economy, there weren't many business activities Many design and advertising companies heavily relied on providing design and production services for government offices and municipal events such as city's festival decorations, city owned gallery and museum exhibition promotions, social events, sports activities such as the Macao Grand Prix, and some government sponsored conventions and trade exhibitions such as the MIF (Macao International Trade and Investment Fair).

2. 1. MACAO'S NEW DESIGN FORCE

Although the commercial market did not provide good conditions for designers to excel, Macao's design on the other hand has prospered into different area. With strong cultural background and rich local interests designers can perform freely on non-commercial or government sponsored projects. Many of these design projects are related to arts and cultural events, such as museum exhibition, postage stamps, arts and music festival promotion, etc. Many Macao cultural activities are dominated by such wonderful designs and gradually became a style, this new design force is now being recognized by designers outside Macao. The leading figure of this

Figure 4: The 15th Macao Arts Festival (2004), design by Victor Hugo Marreiros

new design movement is Victor Hugo Marreiros; he is the chief of the design team heading the graphic design department in the Cultural Institute of the Macao SAR Government. His works use absolutely minimal photography but the design can strongly demand audience's attention with his stylized graphics and typographic treatment. The uniqueness of cultural event design in Macao is the use of multi languages. Quite often designs were made in Chinese, Portuguese and English. Marreiros's design has produced great influence to many

young designers in Macao; however this cultural design movement still did not spread to and improve the design standard of Macao's commercial design area.

2. 2. DESIGN IN MACAO'S NEW ECONOMIC ERA

After 2002 the Macao SAR government issued three casino operation concessions and three subconcessions to a total six different companies. In May 2004 Sands opened its first casino in Macao, from that point on Macao's economy has rocketed to a new height, followed by the opening of Wynn hotel in 2006 and the Venetian in 2007. The original business model in Macao has been changed to a highly competitive environment. The "Sands Effect" has surprised many locals of Macao and demonstrated the so called "Sands Speed" which is to accomplish the most in minimal time (Sands began its US$240 million casino construction in 2003 and opened to the public in May 2004 and the casino generated a 100 percent return on investment in its first year). This new economy has raised a new horizon of competition. Design suddenly becomes an important strategic and marketing necessity. Macao designers now are facing a competitive and yet much higher standard design market. Design in retail branding, packaging and advertising, media and interactive design, audio video production, entertainment related design such as stage design, interior/ architectural design, fashion design etc., are all prospering in the market.

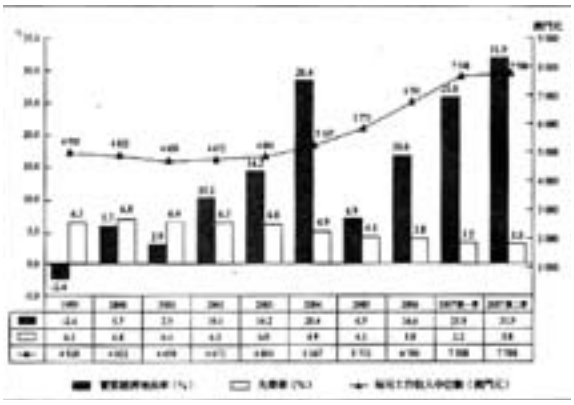


Figure 5: Macao's economic growth, unemployment rate and median monthly income since 1999 to 2007 (from the Macao Daily 2007.11.14)

2. 3. DESIGN TO THE WORLD THROUGH MACAO'S SPORTS EVENTS

Because of many big sports events including the 4th East Asian Games was held in Macao in 2005, the Lusophony Games in 2006, the 2nd Asian Indoor Games in 2007, the annual Macao Grand Prix and the Macao International Marathon, etc., Macao designers are gaining more and more opportunities to use design to reach out to the rest of the world. The emblem of the 4th East Asian Games and

Figure 6: The mascot "Pak Pak" of the 4th East Asian Games Macao

the mascot "Pak Pak" are both designed by Macao designers. The emblem of the 4th East Asian Games used the symbolic colors of the Olympic together with the dynamic swirl symbolizing the five elements of Metal, Wood, Water, Fire and Earth. Mascot "Pak Pak" is a squirrel, which lives in the Guia Hill, where there are lots of pine trees. It is also the location of one of the most famous monuments of the Macao's world heritage, and the oldest lighthouse (Guia lighthouse) on the Chinese coast. For many major events in the past, Macao has been showing the world its identity and culture, although there seems to be more coherent efforts needed to unite such images of Macao. Nevertheless the image or identity of Macao will need to be further enhanced by local designers. With this rapid development and foreign investments, Macao is now truly an international city, and design playing a major part of the creative industry becomes very crucial for the future development of the city.

2. 4. PROBLEMS ARISE

Unlike the international business environment in Hong Kong, before 2004 Macao design market is basically a local market. During this long period of time, the design industry in Macao did not have enough opportunity to deal with many foreign clients; hence, handling design with international companies will post some difficulties to some designers, especially for those young designers who have just entered the market. Some designers have the problems of not having enough design knowledge and experience to handle large scale design planning and implementation. For example, the 4th Asian Games in Macao in 2005 was perhaps the biggest events Macao designers had ever produced in history, although we still see places where more design co-ordinations are needed, designers in Macao had really gained a lot of experience in handling a world class sports event. English—the language of business seems to post another difficulty to the designers here in Macao.

In terms of design education there are still a lot of improvements to be made on the design skills and knowledge for design students, but lacking of confidence and identity is still the biggest problem among students and teenagers. Macao has been strongly influenced by Hong Kong culture and this phenomenon has been reflected in many aspects of Macao's social life. It is difficult to live in Macao for one day without knowing what is happening in Hong Kong. Teenagers are following trends from Hong Kong and pay little attention to their own cultures and surroundings, or many do not seem to be able to articulate and to be interested in their own cultural differences and uniqueness. In the long run, that will affect Macao when there is not any visible cultural identity.

3. HOW DESIGN EDUCATION CAN RECTIFY THE PROBLEM?

The needs of design education in Macao is to quickly improve

the design skills of the students to meet the higher international standard especially in the area of commercial design, planning and implementation, but design in Macao will need another major component, which is cultural initiation and courage for our designers.

3. 1. CURRICULUM STRESSES ON CULTURAL AWARENESS

The Visual Art Institute was first established by the Macao Cultural Institute in 1989; later it was incorporated to the design, music and visual arts programs under the School of Arts by the Macao Polytechnic Institute in 1993. This marked the beginning of formal art and design education in Macao. After fourteen years the design program has updated its courses and curriculums. The purpose of this curriculum update is first to improve the design standard to fulfill the needs of the market and industry, second is to inspire the new generation designers to discover their own potential through the understanding of culture.

In order to encourage student's creativity with self-confidence and articulate culture with sophistication, many design classes have been carefully planned with cultural contents with corresponding design knowledge for the level of study. For example an intermediate level of Graphic Design course should include the ability to utilize and combine many graphic presentation skills such as color, image, type, format and the use of materials. The student project must have a theme. "I • Macao" is a graphic design project in which students use graphic design as a vehicle to explore his/her own living environment and conditions. Technical skills included the use of a suitable format and structure, materials and bookbinding techniques. Of course the overall ability of the use of color, image and type is the basic requirement for the course. In fact, projects likes "I • Macao" can really stimulate students to look into themselves and forging their own interpretations of the city.

Figure 7: Student's project "I • Macao" exploring city's cultural phenomenon

Cultural sensitivity is intuitive, it is perhaps very difficult to be taught, and just like any other art forms and mediums, graphic design is a good tool to sharpen designer's sensitivity visually, artistically and culturally. However not every student can be as culturally sensitive as others. In addition, not every student sees graphic design as a mere commercial or marketing tool. In the senior level of the School of Arts design program there are two different streams for students to focus their final year of study, one is "Design and Branding"; the other is "Design and Culture". Each year there are almost equal numbers of students choosing the "Branding" and "Culture" streams. In fact, these two major streams of study represent the new awareness in Macao's design industry. "Design and Branding" includes projects concentrating on design and research, focusing on design and its implications to business operations, branding development and awareness, all these areas of design study are very important for many of the Macao's local business and industry, especially for the small and medium enterprises of Macao which are now under threat by the new economy initiated by foreign investment. "Design and Culture" incorporates projects involved researching cultural aspects of design, encouraging designers to discover their cultural characteristics and values, in the hope of building a cultural identity and gaining confidence in the culture of the city. As Macao is a tourist hot spot, an appropriate identity must

be associated with its own heritage and culture. Therefore, studying and researching on culture to strengthen cultural awareness through design education are important for designers.

3. 2. FACING THE CHALLENGE WITH MACAO'S CREATIVE INDUSTRY

With only half a million residents in the entire city, Macao indeed is a small place. In Macao any outcome of economic and cultural impact will be magnified. In these recent years we have already seen many of Macao's delicate cultures and life styles slowly fading when the city's economic development expanded. The new economy and development will sure foster Macao to an international city. However many local cultures and interests will also be forced to the edge by mainstream culture and global market. After the historic center of Macao had been inscribed as a UNESCO World Heritage Site, there should be more efforts to preserve Macao's local culture and heritage. While the Macao government is now promoting the idea of creative and cultural industry for the city, let us take a step forward to embrace these valuable cultures and strengthen people's cultural awareness before the city of Macao takes up the same monotonous characteristics of every other city of the world.

Figure 8: The Macao Tower viewed with the background of the Cotai area where the new gaming industry of Macao will take place

REFERENCES:

Austin Coates, A Macao Narrative (1978) Oxford University Press.

Audrey Bennett, Design Studies, Theory and Research in Graphic Design (2006) .Princeton Architectural Press.

Teaching Taiwan Graphic Design Students to Learn Conceptual and Communication about English Letterform

I-Hsuan Wang

Assistant Professor, School of Art, Design & Media, Nanyang Technological University

ABSTRACT

This research structure is training in allowing Taiwan design school students to complete a free search of all possible letterforms and graphic figures. For Taiwan students they grow up by use Chinese characters/type all the time. Now being a graphic designer in a global economy requires you to think about cultures and communication in a whole new way. Designers are now required to not only thoughtful, but also sensitive and strategic in their thinking around cross-cultural design. So the concept of research is using only letterforms to express the idea and image. The essence of works are disciplined students different thought of English letterform. Trying to work with type expressively is the goal of this research. To understand letterforms in an elemental way rather as a vehicle for conveying written information, and also to begin to develop a discerning eye for the subtlety of typographic forms and the creative potential within these forms. This type of exploration and experimentation provides a documentation of visual research indicative of a creative thinking process.

Keywords: graphic design, graphic figure, typography

1. INTRODUCTION

Type is a visual element- it is first and foremost pure shape. You can change the shape of a letterform by adding or deleting parts. You can stretch, bend, or manipulate letter shapes to reinforce the meaning of the message that you are creating. Type not only organizes the message, it helps to express it. In the hands of a graphic designer, type becomes a magic tool capable of expressing any subject matter or emotion, be expressions and emotions that can be conveyed through typographic forms is limited only by the creative ability and imagination of the person designing with them.

Today typographic characters are used pictorially to produce explosive graphics. For educators in the ever-changing visual communications field, understanding how to create these conditions is a formidable challenge. It is essential that assignments be both educationally sound and personally meaningful to the students, creating sufficient interest to open up the students to previously unexplored avenues of visual communication. The process of visual communication runs throughout our daily lives. Unfortunately, most graphic design teaching methods focus only on technical facility, ignoring the need for personal and innovative thought in visual communication. So I propose that the repertoire of principles and techniques needed for effective visual communication can not simply be taught; this repertoire must be developed. With its uniquely practical hands-on approach and wide variety of art, the conception will be welcomed throughout the visual communication field, by professionals looking for new avenues of inspiration, students, and instructors.

2. PURPOSE OF THE RESEARCH

The purpose of graphic design education is to prepare students for professional practice. Therefore, it is project-based rather the subject-based. When students engage in the process of designing they are learning by doing. This research create assignments to clarify

visual principles and provide direct experience with certain kinds of problems or media. A good assignment will challenge a student to conceptualize and synthesize gathered information into a form that responds to the content. Good design thinking is developed through investigation, experimentation, and genuine curiosity on the part of the designer or design student. In a course, design assignments generally become more complex as students build on the visual vocabularies gained from their previous assignment experiences.

The objective for a student of graphic design is to follow the design process to develop and present content in the form of good ideas that fit the parameters of the assignment given. From my point of view, what is a good idea? I think a good idea is an idea that requires little through to understand but stimulates the viewer's thinking. A good idea can be expressed without having to explain. A good idea can communicate instantly. But developing a good idea is not an easy job for every designer. To reach an audience, the good idea must be communicated visually. This research critiques provide the opportunity for students to exchange critical and supporting ideas in a peer group setting. Students learn best from one another. To illustrate this point, student work is only used to illustrate graphic design solutions in this research. The assignment was given to beginning students, not only to teach basic design fundamentals but also to encourage personal creative processes and self-reliance.

3. SCOPE OF THE RESEARCH

This research structure is training in allowing Taiwan design school students to complete a free search of all possible letterforms and graphic figures. For Taiwan students they grow up by use Chinese characters/type all the time, although they study English since junior high school or even earlier. But use English alphabet and letterforms compose layout design, it's unfamiliarity for them and they often experience frustration with the limitation of the knowledge English letterforms. So the concept of this research is using only letterforms to express the idea and image. The essence of works are disciplined

students different thought of English letterform. Especially now being a graphic designer in a global economy requires you to think about cultures and communication in a whole new way. Designers are now required to not only thoughtful, but also sensitive and strategic in their thinking around cross-cultural design. The assignment is given to enhance Taiwan's students construct typographic characters to convey the idea to readers.

Typography is the art of designing with type. Type is the term used for the letters in the alphabet, the numbers, and the punctuation marks that make words, sentences, and blocks of text. The term typeface refers to the design of all the characters mentioned above, unified by common visual elements. This research project is designed to lead students away from traditional thought processes, away from traditional avenues of visual research, and away from 'right' and 'wrong' answers; many of them presented in the context of seemingly narrow parameters, students are forced to look inward for personal design solutions. In short, the necessary conditions for personal creative growth are established again and again.

In this research, it used a metaphor to explain the essential nature of typography to students when it compared typography to architecture. It described typography as two-dimensional architecture upon which a foundation of visual communication can be built. Letterforms become the building blocks that create the structure to convey an idea or deliver a message.

Like architecture, typography has both form and function – it is a graphic as well as a readable element in a design. The assignment in this research explores the notion of typography as image. Letterforms can be changed and manipulated to become both the image and a message. Typography is a visual graphic language when it is used creatively and expressively and a verbal written language when it is combined with image. As a form, type contain the design elements of line, shape, texture, size, and value, and can be arranged into graphic compositions. As a function, type contains content- it is the message or information to be communication.

4. CONCEPT OF RESEARCH

In this research is to draw, paint, or make an image using typographic characters and graphic figures. Use the letters – which represent sounds- to illustrate an image. In this research, students will design a visual typographic story. Examine the forms of typographic elements closely to determine what will represent you best. The intention of this research is to give students an opportunity for playful problem solving, which can add witty solutions for the graphic vocabulary.

5. METHOD

Type can enhance the meaning of the message by translating or transforming it. Different typefaces have different personalities and varied usages. Some typefaces are very formal and elegant, while others are casual and relaxed. Some typefaces evoke nostalgia for times past, and others suggest a modern attitude. The typeface you choose as well as size, leading, kerning, and shape of the text block can all influence the tone of message and directly affects how a viewer will perceive and interpret it.

At the very core of good typographic design is the graphic designer's critical interpretation of the message – the more astute the interpretation, the more effective the message. How can students get their ideas across more effectively? By building a solid foundation of typographic principles to use as a framework for reference.

The focus of this research's assignment is creative type and graphic figures play. In the assignment students must develop an idea or concept that establishes the framework for their design solutions.

6. TYPE AS IMAGE EXPERIMENT

This experiment is to "draw" a visual typographic story using only

typographic characters (letterforms, punctuation, and numbers) and graphic figures. As your "content", use the type and graphic figures to express your idea. The intention of this experiment has always been used as a vehicle to express a design's feeling and emotions, and as a way to show this to outside world.

6. 1. ASSIGNMENT PROCESS

In this assignment of the first step is to decide on your content- what typeface you will be using. When you've achieved the idea and story that you want, thinking about the shape of the letterforms and how they express and define the relationship with the graphic figures, visualizing your typographic story.

6. 2. OBJECTIVES

1. To develop a design concept as a framework for eight squares.
2. To introduce type as an artistic form and to use typography as the primary elements.
3. To create typography that communicates a special idea or message and to emphasize typographic design skill while maintaining visual continuity.
4. To introduce layout and format design, and working with graphic figures.
5. To show relationships of negative/positive space.
6. To explore computer-aided design possibilities.
7. To produce effective presentation.
8. To achieve good organizational skills.
9. To expand design vocabulary.

The following examples are promoted and presented throughout this exercise:

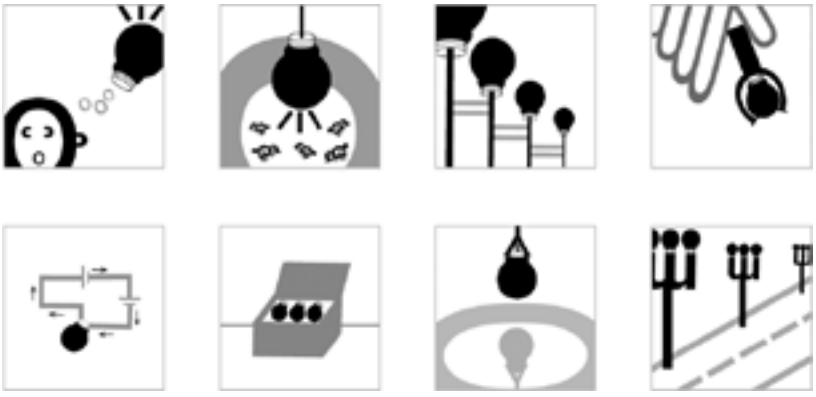


Figure1

Critiques

This student edited and combined letterforms and graphic figure to create a visual statement that revealed meaning. She used scale and carefully selected her typeface, paying attention to the structure of the letterforms, placement. She also achieved a good balance of unity and variety in a unique way.

Figure 2

Critique

Many of the students who do this assignment often create message that can be considered design for the public good. This student's work response to this assignment is a good example of a pun – a humorous concept with more then one meaning.

Figure 3

Critiques

This student succeeded because she achieved by visually editing the letterforms and creating meaning by exploring structure, proportion, weight, stylistic differences, and placement between graphic figure and type letter.

Figure 4

Critiques

This student she did an admirable job at this assignment. Her layout is simple, straight forward, this effect is caused by the successful interesting of the subject matter and visual representation that could definitely entice the curious viewer among us.

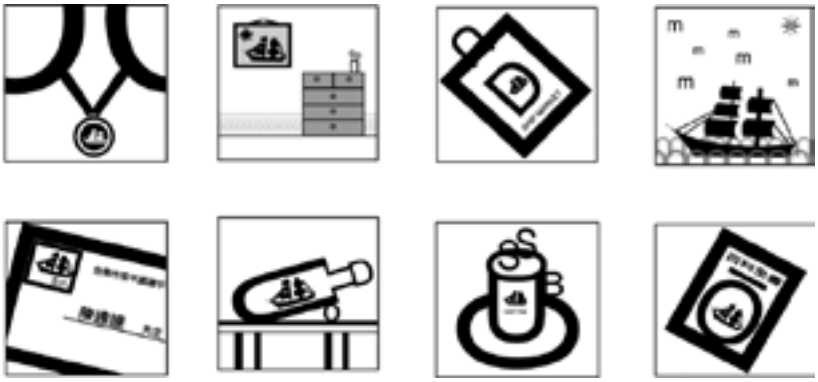


Figure 5

Critiques

One of the unique components of this assignment is to create unity between the type while maintaining a sense of individual character to each layout that exemplifies the unique qualities of typeface. This challenge can be achieved through the development of typeface and/or concept. This student addressed these challenges with her solution to the problem.

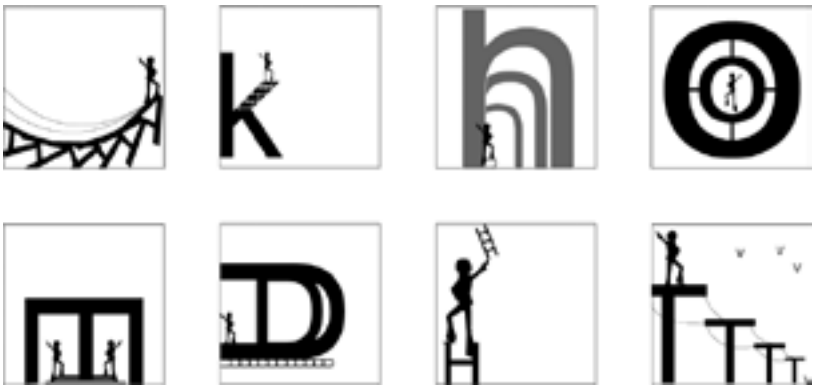


Figure 6

Critiques

This student's understanding and perception of the type letter makes this typographic representation very successful. Through careful selection of the typeface and the well-thought-out construction of typography, she choose different alphabet to express the idea where human standing. She presents us with a clever concept that is both humorous and charming.

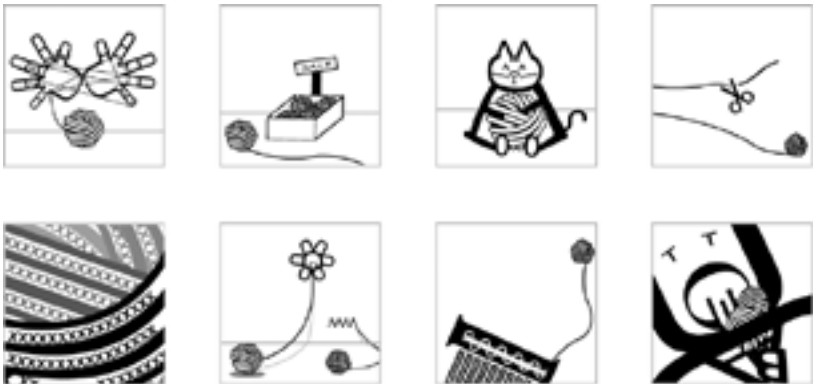


Figure 7

Critiques

By overlapping, this piece of work creates a new code out of different characters. The result is interesting shape combinations and compositions. While this piece is successful because of the way in which the idea has been resolutely executed, the story lacks a sense of building.

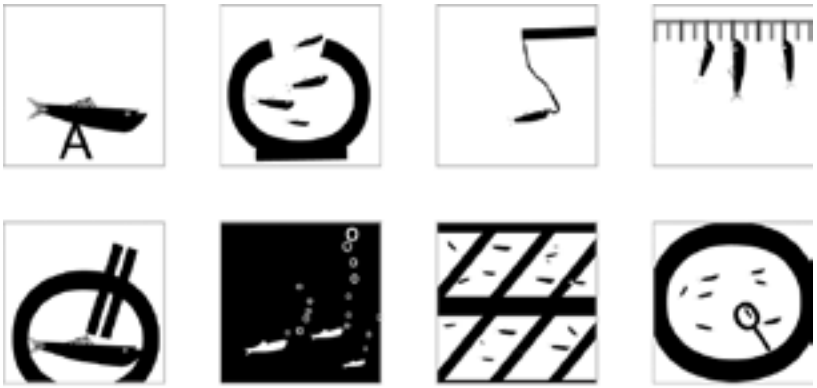


Figure 8

Critiques

The way in which the characters have been arranged into image is successful, and a story has been developed to the end. This student's work is a good example of the use type and graphic figures, she makes a very great dialogue between type and graphic figure.

7. CONCLUSION

In this research develop how the component can be assembled or composed. There are four broad approaches to this research graphic design: one concerned with a visual image, an analytical approach, a conceptual approach and an expressive approach. The ideas and the concept highlight different facets of this subject:

1. The sculpting of experience – reflecting the notion that the form of the message influences the reader's interpretation of the content.
2. The management of graphic images – stressing the graphic images layout organizational ability, and alluding to the creation of structure.
3. The engine of learning – graphic design empowering the systematization.

This conceptual approach to visual problem solving embodies the quest for basic graphic design developed. This research help students can come to realize that the potential number of successful solutions is infinite. The idea of unlearning comes into play here as well, prodding students to go beyond habitual, learned responses and thought processes, into the realm of more instinctive, spontaneous approach.

REFERENCES:

Baines, Phil, and Andrew Haslam (2002). Type and Typography. New York: Wastson-Guptill.

Behrens, Roy (1983), Design in the Visual Arts. Englewood Cliffs, New Jersey : Prentice Hall.

Charles Wallschlaeger, Cynthia Busic-Snyder, Deign Basic, Liu Ho (1996), Taipei.

Craig, James (1999). Designing with Type: A Basic Course in Typography, Fourth Edition. New York: Watson-Guptill Publications.

Grear, Milton. Malcolm (1993). Inside/Outside: From the Basics to the Practice of Design. New York: Van Nostrand Reinhold

Knobler, Nathan (1980), The Visual Dialog. New York: Watson-Guptill Publications.

Meggs, Philip B (1989). Type and Image: The Language of Graphic Design. New York:Van Nostrand Reinhold.

Nicholas Roukes (1995), Design Synectics, Liu Ho, Taipei.

Phil Baines & Andrew Haslam (2002), Type & Typography, Laurence King, UK.

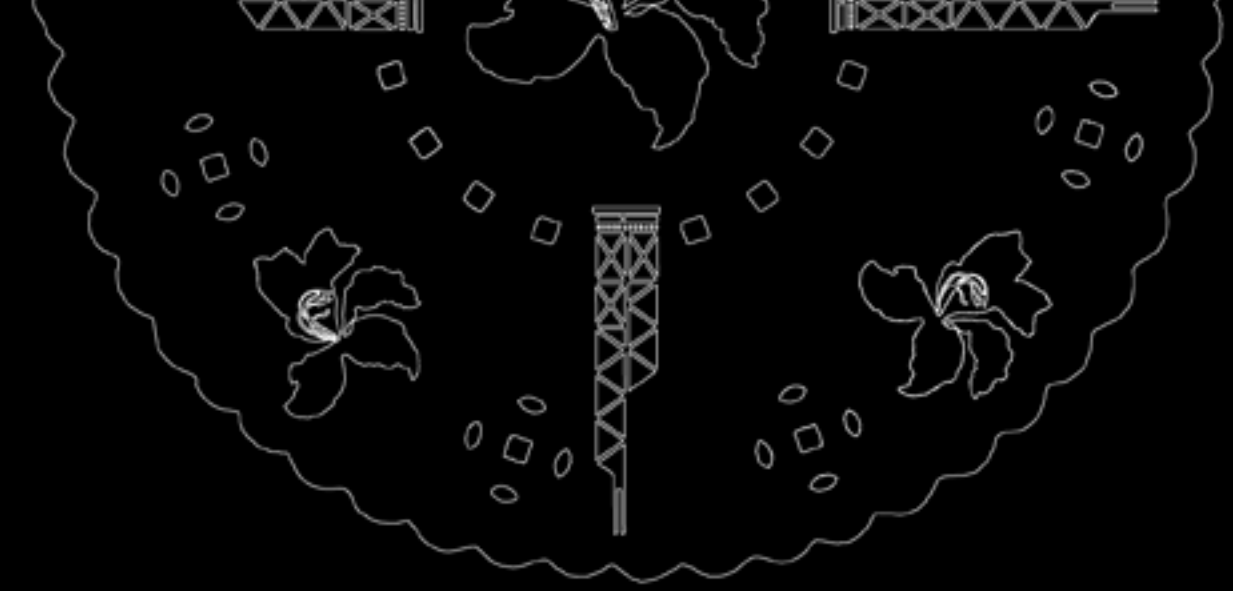
Rick Poynor (2001): Typographic, Laurence King, UK.

Robin Landa (1985): Graphic Design Solutions, Liu Ho, Taipei.

Rob Carter, Ben Day, Philip Meggs (2002), Typographic Design: Form and Communication, John Wily& Sons, New Jersey.

Wild, Judith, and Richard Wild (1992). Visual Literacy: A Conceptual Approach to graphic Problem Solving. New York: Watson-Guptill.

Curriculum Development



Liberal Design Education: A Humane Approach

Prof. Amit Ray

Department of Humanities & Social Sciences & Design Programme, Indian Institute of Technology Kanpur, Kanpur 208016, aray@iitk.ac.in

ABSTRACT

Design profession synthesizes creativity with logical mind and technical knowledge, where multidisciplinary approach is the most essential character. A true designer is an artist, who transcends the confinements of religion, caste, creed, age or sex. Freedom of mind is the source of creativity.

Liberal education system generates the intellect beyond a confined sphere. It galvanizes the thinking process of an individual to extend over-overpowering the forces of mundane curriculums. The diverse body of knowledge, advocated by interdisciplinary studies, permits us to bond relations between free thinking and its manifestations.

The conventional education system allows individuals to excel in a limited field. Hence, it does not prepare a student to deal with unorthodox predicaments. The conventional research areas have exhausted their cerebral resources and are making room for overlapping fields of professions. The need of the hour is, intellectual growth through liberal education in order to fulfill desire of satisfaction qualitatively.

The contribution of aesthetics is an important force of human life. The essence of 'humanistic design' lies in channelizing creative energy towards an aesthetic environment. We try to express aesthetic

beauty through form, balance, rhythm, proportion, color, and other components of creative act. Nature is the greatest designer that replete with aesthetic appeal and functionality.

Philosophy of Design combines creativity, technology and methodology. It serves with a zealous concern for human values and social requirements. The diverse social forces generate myriad variations in the design process and are the strength of any design education. At the Indian Institute of Technology Kanpur, India the Design Programme cultivates the philosophy of 'liberal design policy', and encourages the students to flourish in an environment which is truly holistic. Individuals reveal their mind through creating a product, an animation or conceptualizing a music video by merging all the elements of designer. The Institute vigorously pursues the spirit of liberal curriculum to enable a student to identify himself/ herself as a 'designer', not as a product designer or animator.

Cultivating a ground for design education, such interdisciplinary activities are extremely important. Applications of tools and techniques are important; however innovativeness of a designer does not depend on the mastery of techniques. The correct attitude and motivation creates a designer.

The curriculum would include the following broad areas –

(A) *Humanities and Social Studies* – philosophy, literature, sociology, psychology, etc.
(B) *Art and Performing Art* – 2-D & 3-D & performing art, music, stage-craft, etc.
(C) *Design* – principle & elements of design, material studies, ergonomics, etc.
(D) *Engineering & Sciences* – Basic engineering and sciences, electronics, tools and techniques, software, etc.
(E) *Design Management Study* – consumer psychology, design management, etc.

The above area of studies would generate a flexible environment towards a liberal education for cultivating the creative atmosphere.

The environment of the education system would provoke the students to face and accept new challenges. The attitude of a person makes him/her a designer, who is more humane to understand other human feelings, desire and emotions, is true to guard the sanctity of the liberal design philosophy.

Keywords: liberal education, humanistic design, liberal design policy

1. PHILOSOPHY OF LIBERAL EDUCATION AND CREATIVITY

Creativity is the key to design profession. The design profession synthesizes creativity with logical mind and technical knowledge. Wide exposure to varied subjects helps the student to develop an ordered mind. Each subject contributes in a positive way in different dimensions. A careful study of logic, music, performing art, poetry, philosophy, computer science and mathematics would holistically synthesize the thought process and knowledge. Thus the intellectual growth would create the foundation of organized thinking and of rational analysis. Some of the subjects such as– art, music, performing art, etc. are being exposed to many from childhood. Thus inclusion of such subjects makes learning process easier and quicker along with understanding the relevance of the main subject. Thus it creates a holistic growth.

In such profession the multidisciplinary approach is the source of the success. It is the attitude that makes one a designer. A true designer is like an artist who does not believe in any religion. The mind has to be liberated from all restrictions and confinements of fenced knowledge. Religion of designer is to serve people irrespective of their religion, race, cast, age or sex. Such philosophy is only possible through liberal attitude and unbiased vision. Designers are the true global citizen who believes in humanity. Liberalism may some time appear fashionable term to introduce in education system without understanding and practicing in the true spirit. The philosophy of

liberal education envisages liberating one's mind free without any fear. Freedom of mind is the source of creativity. Rabindranath Tagore (Nobel Laureate 1913) an eminent educationalist, thinker and poet of India writes on the 'freedom of mind', "Where the mind is without fear and the head is held high; Where knowledge is free; Where the world has not been broken up into fragments by narrow domestic walls; Where words come out from the depth of knowledge;… " Thus, the liberal education liberates one from the confined wall of conventional environment and helps one to think differently. The liberal education philosophy inculcates students to undertake larger responsibility in choosing and learning the subject. Through such a meaningful learning process students with freedom show their degree of maturity that ultimately motivates and leads to creative pursuit.

Liberal education system galvanizes the intellect and knowledge beyond a confined sphere. It nurtures and strengthens the intellect of an individual to cross the limitation of the shallow education system based on stereo-type curriculum. The diverse body of knowledge gained from the liberal arts education, together with the tools of examination and analysis would helps to develop independent opinions, attitudes, values, and beliefs. Such knowledge liberates individuals from ignorance, whim, or prejudices. The interdisciplinary studies creates freedom of thought which sees the relations between ideas and philosophies and subject areas in an unhindered manner and thus, puts each in its appropriate position.

The conventional educational system allows individual to excel in a limited field. However, it does not prepare a student to facing the challenges beyond a prescribed path. In the recent years narrow conventional research fields are rapidly disappearing and the need of interdisciplinary research areas are expanding the knowledge, overlapping various fields of professions. It is obvious that mind cannot be restricted to a limited space. Creativity of mind flows to appreciate the logic and design of a spiral creeper to aesthetic appreciation of butterfly's color combinations to the abstract quality of a cloud formation to the structure of a sea-shell. Thus, the design paradigms of living and non-living beings would create a world of

inquisitiveness. The source of such knowledge is the foundation of all design inventions. A creative person thinks differently, which emerges out of such freedom of liberal mind. The intellectual growth through liberal education would fulfill the desire of satisfaction qualitatively rather than quantitatively.

Unfortunately, the present global economic policy increasingly forcing the new parameter in the value system, a new life style is primarily based on quantitative measurements rather than qualitative judgment. Such policy would soon exhaust the flow of creative thinking. In 1901, Tagore had conceptualized an education system in true sense, for the 'quality of life', the life which is beyond the material pleasure and experiences. And he could show through his thinking and practice the relevance of nature in achieving the goal. Probably he was one of the first persons to articulate the importance of nature and its role in building complete personality of a child from the very early age. The creativity of a child depends on such exposure. Nature is the anvil of all creativity which is the most valuable resources for human mind. Hence, design education has to cultivate such creative environment through liberal attitude.

The author feels, while a liberal design education may not make one expert to prepare a perfectly measured chair or mobile phone design like a craftsmen; it would teach to think differently to create a place to seat or a paradigm shift in the mobile design to express and enjoy the quality life. Design students should learn to imagine. As a child we could imagine hundreds of things but somewhere while growing up we stopped imagining. Absorbed by the man-made things have drawn greater interest than the nature has narrowed our source of imagination. Rightfully once Einstein had said that imagination is more important than knowledge since knowledge has limitation while imagination encircles the world. A curriculum should provoke and inspire students to imagine, which would motivate to do something differently. That is what it is supposed to be the genesis of deign education.

2. PHILOSOPHY OF DESIGN AND INTERDISCIPLINARY APPROACH

The contribution of aesthetics or beauty is an important force of human life. The philosophy of humanistic design seeks to channel such energy towards creating an aesthetic environment. Aesthetics surrounds literally in every sphere of human life. Philosophy of Design combines creativity, technology, and design methodology. Societal need and human values are the basic concern of the design profession. The diversity of human society generates the tremendous variations in the design process and is the strength of any designer. Design process involves various factors related to aesthetics, sociological; psychological, social-anthropological and cognitive science studies that are not directly related to engineering subjects, however it helps to maintaining a leadership position in the rapidly changing world of design. We try to express aesthetic beauty (relative expression) through form, balance, rhythm, proportion, color and other components related to various kinds of creative act. Since the time of Bauhaus designers have examined and exhausted various functional parameters related to design. However, in the recent years human emotion in design is another important area that has gained lot of interests among the designers, which are often difficult to quantify. Studying some of the above allied subjects (aesthetics, philosophy, sociology, psychology, etc.) may help to understand the non-functional emotional element better.

The time, place and cultural diversity would generate and inspire to create larger varieties of design. Thus, it is important to preserve such diversity as positive forces than create obstacles. From ancient time the cultures with wide diversity have produced enormous rich varieties of design. The limitation in diversity depend more on techniques to create varieties. Therefore, the author believes the rich diversity of nature is the source for larger range of varieties.

3. FUNCTIONAL AND NON-FUNCTIONAL ELEMENTS IN DESIGN

Human emotion and feeling are called non-function elements in design that are being exploited by the designer. In most cases design explores various functional elements and principles related to form, shape, size, texture, color, line, etc. All these elements are part of design's formal structure. However, an important aspect of those in most cases remains untouched or addressed as– non-functional elements. Non-functional elements deal with human emotions. Human emotions evoke a sense of attachment. Such emotions are based on human instinct, such as- visual, tactile, auditory and olfactory and taste sensation. The five basic instincts are attached to human emotions. These instincts ignite human feelings based on various other environmental and societal factors. It is interesting that most of the above senses can technically be examined but it fails to establish a conclusive result when applied in design. The sensitivity of emotion depends on age, culture, tradition, sex, socio-anthropological, etc. and it can not establish a standardized result. Hence, non-functional elements in design profession make it further more exciting, challenging and interdisciplinary field in nature. The liberal design education policy would help to understand such areas of study that are otherwise not included in the conventional design curriculum.

Nature plays an important role in the process of design from the concept stage to formative stage. Nature is constituted with varied components while maintaining a cohesive environment. Each member of the nature has to maintain an eternal universal rhythm and harmony and respect other members for survival. Taoism in China portrays the world as an organic, interdependent system. According to Taoism, nothing exists in universe in isolation. Each part of the whole is dependent on others. According to Zen Buddhism, a synthesis of Taoism and Mahayana Buddhism, nature cannot be mastered. Instead, it has to be contemplated and appreciated. Humankind should utilize nature with restraint, bringing out the latent beauty, the power of the natural world. True design education springs

out of such philosophy where the freedom of human mind would combine with the reality of the nature. Spiritualism would combine with the reality to practice the field of profession. Nature is the greatest designer that excels in aesthetic appeal and functionality.

4. INTERDISCIPLINARY DESIGN CURRICULUM DEVELOPMENT: A HUMANE APPROACH

At the Indian Institute of Kanpur, India the Design Programme cultivates the philosophy of liberal design policy; the policy truly encourages students to grow in an environment that creates design in its holistic nature. Design as it is understood is in true sense a multidisciplinary profession. A designer creates product, animation or conceptualizes a music video, where it merges all the elements of a designer. It vigorously pursues the spirit of liberal curriculum to create a designer who should be able to identify himself/herself as designer not as a product designer or animator.

The author feels an interdisciplinary environment creating a balance between art, science and technology would create a healthy environment around any design school. Cultivating a ground for design education such interdisciplinary activities is extremely important. Applications of tools and techniques are important; however innovativeness of a designer does not depend on the mastery of techniques. The correct attitude and motivation creates a designer. Techniques and tools would follow to convert concept in to reality. Thus, exposure to the usage of tools is important for the creative expression.

The curriculum would include the following broad areas –

(a) *Humanities and Social Studies* – philosophy, literature, sociology, psychology, social anthropology, Design Ethics, etc.
(b) *Art and Performing Art* – 2-D & 3-D art, art history, traditional and modern design history, performing art, stage play, acting, music, stage-craft, photography, etc.

(c) *Design* – design principle & elements of design, 2-D & 3-D form study, color, material studies, ergonomics, etc.
(d) *Engineering & Sciences* – Basic engineering and science courses, electronics, basic circuit design, engineering tools and techniques, CAD-CAM, software, etc.
(e) *Design Management Study* – consumer behaviour, design management, marketing, etc.

In the above groups each group would play significant role in creating the true spirit of liberal design education. Every work requires a philosophical reasoning and logical analysis for a foundation which ultimately motives to pursue to achieving the goal. Design profession is directly related to various societal issues. Courses in sociology would provide the required exposure to sociological issues. Literature is an important subject that would help in strengthening the communication skill and expression. Psychology has direct relationship while dealing with interactive design, ergonomics, and emotional aspects of design. Psychology and sociology would contribute in understanding the non-functional elements of design. Exposure to such areas at various stages to the design students would naturally cultivate a broader horizon. The author feels, during this time students should be given exposure to various ethical aspects related to the design profession. The social responsibility and ethical issues related to their application and the future consequences must be considered from the early stage of their learning process.

In the second group, courses related to art have direct relevance with the design profession. 2-D and 3-D exercises helps in understanding aspects of composition, mass & space, ratios & proportion, color, etc. It is absolutely necessary to have enough exposure to various areas of art including the history of art. The contribution some of the modern art movement– Readymade, Dada, Synthetic Cubism, etc are significant. Such knowledge would strengthen the design process. Performing Art has reasonable role in the field of design. Various fields– stage craft, photography, editing, music, etc have close relation to the creativity of design. Such areas would expand the vision of a designer for larger experimentation and innovative works.

In the third group, design is directly related to the profession, which attempts to build the foundation of design elements and principles. Understanding of material and various aspects of fabrication method along with human-machine relationship are important areas.

The fourth group intends to build strong foundation of the basic sciences and engineering. Design profession is the synthesis of art, science and technology. Creativity with logical and technically sound mind is the key to design profession. In this group, exposure to electronics and understanding of various machine-tools and software are required for their application at various stages. While understanding techniques and aspects of engineering the application through material fabrication becomes important at this stage.

In the fifth group, the topics expose the students to the aspects of advertisement and marketing strategies. Design profession is not complete without having some understanding about the commercial aspects of the product. Design is not complete without understanding its market and future possibilities. Therefore, design management becomes important area because of the present global economy and exposure to a much larger market compare to earlier history. Policy decisions and understanding the branding strategy is closely related to the success of the product.

CONCLUSION

The above area of studies would generate a wider perspective and flexible environment towards a liberal education for cultivating the creative atmosphere. Depending on the curriculum (undergraduate or graduate), the level of courses would have to be designed and developed. The students would have a set of core courses for the foundation at various levels but with enough opportunity for electives courses. Students should be encouraged to opt for courses outside the design school. The flexibility in choosing courses of their choices after having the foundation courses would allow the students to pursue their special interest. However, the author feels

every student should be encouraged to choose electives across various fields. Student should be equipped to handle projects across visual design or product design areas. The flexibility in the selection of elective courses would produce healthy design attitude. The Bauhaus essentially provided similar atmosphere and created the true designers, philosophically and physically.

The author is convinced that design education or the design school cannot produce a designer. The environment of the education system would provoke the students to face and accept new challenges. Design students are the real leaders who have the understanding and capability of innovative ideas to solve problems. It is the attitude of the person which makes him/her designer, who is more humane to understand other human feelings, desire and emotions. Design creates such attachment and involvement with fellow human beings no other profession is able to create. The thrill and challenges of a designer may appear more mystical than other professional fields. Hence, the author feels, it is unbelievable in any other professional field to apprehend the excitement of a creative mind of an artist that to be nurtured and synthesizing with the technical knowledge.

BIBLIOGRAPHY:

1. Armstrong J., Dixon, R, & Robinson S. (1999), The Decision Makers: Ethics for Engineers, Pub: London, Thomas Telford.

2. Barbour Ian G. (1980), Technology, Environment, and Human Values, Pub: New York, Praeger Publishing.

3. Elliot, R & Gare, A. (Edit.) (1983), Environmental Philosophy, Pub: University Park & London, The Pen State University Press.

4. Lindbeck, John R. & Wygant Robert M. (1994), Product Design and Manufacturing, Pub: New Jersey, Prentice Hall.

5. Thackara, Jhon (2005), In the Bubble, Pub: New Delhi, Prentice-Hall of India.

6. Tagore, Rabindranath (1389) The Santiniketan Vidyalaya: Sikha-adarsha (The Education Philosophy of Santiniketan School), Pub: Santiniketan, Visva Bharati University.

7. Tagore, Rabindranath (1969), The Meaning of Art, Pub: New Delhi, Lalit-Kala Academi.

8. Wake W.K., (2000), Design Paradigms A Source Book of Creative Visualization, Pub: New York, John Wiley & Sons, Inc.

9. Woodham, J. M. (1997), Twentieth-Century Design, Pub: Oxford, Oxford University Press.

Crossing The Disciplanary Design Boarders: From Interior Design to Product Service Systems

Luisa Collina

School of Design, Politecnico di Milano, Milano, Italy, luisa.collina@polimi.it

ABSTRACT

All over the word different approaches to design still exists.

A first one, from Simon's[1] contribution, considers design as a science in a positivist doctrine with theoretical laws and rules. In this perspective design research is a scientific activity, investigating reality though methods, logic and consequential processes.

A second approach, from arts and crafts school, considers design as an applied art relying on personal attitude and experiential learning. In this perspective design can't be codified as a discipline nor a research field in a scientific sense.

This difference is related to the way of transferring knowledge. The definition of innovative knowledge transfer methods is becoming even more important in today's globalized society where classes are small representations of international phenomena. International classes should have an education program which is capable to

[1]Simon H.A., 1973, "The structure of Ill-structured Problems", Artificial Intelligence in Nigel Cross, 1984:"Developments in Design Methodology", J.Wiley & Sons

respect both cultural and disciplinary heterogeneity of the students and take advantage of the differences as an enrichment for the entire class and school.

Keywords: design driven innovation, product service systems, multi-disciplanary and multi-cultural education

1. THE TRANSFER OF KNOWLEDGE

In his anthropological studies published in *The Savage Mind*, Claude Lévi-Strauss makes a distinction between legendary thought and scientific knowledge; between bricoleur and engineer.

The bricoleur is a person who performs a task using his own hands, with tools that are different from those employed by the professional. He uses craft methods; the engineer uses scientific means. The bricoluer is the owner of a tacit knowledge: is aware of the results he will produce but does not possess a method; the engineer owns a codified knowledge, he possesses a method without a form; he develops hypothesis and theories without a pre-figuration of the results.

Likewise Cristopher Alexander in his *Note on the synthesis of form*, makes a distinction between two types of learning in the arts: a traditional method characterized by a pragmatic approach, correcting the pupil who makes a mistake without explaining the criteria for the correction; and a modern approach which tend to isolate a method from its specific results, separating in other words theory from practical apprenticeship.

The "atelier model" on one hand, the "scientific lab" on the other hand.

The concept of method suggests the idea of an abstract diagram, of rules, of a design approach that can be transmitted, irrespective of the object in hand; of a process that can be planed, codified in different phases, far away from the idea of a creative genius.

1.1 IN THE MODERN CULTURE

The modern concept of teaching tends to focus on this second alternative.

The modern idea of education is finalized to the transfer of methodologies, tools, instruments of knowledge and more in general of a "grammar of design".

This approach is based on the recognition of a scientific component within design, complementary to the ideas of intuition and of experience handed on in the ateliers.

A didactic approach pursued until the end of the 50ies and the beginning of the 60ies in the didactic experiences of the Bauhaus and later of the Hochschule für Gestaltung of Ulm.

In 1968 the Hochschule für Gestaltung of Ulm closes.

In the same years the previous theoreticians start a first balance regarding the role of methodologies in the design field. They start to recognize also the risks related to the unconditioned adoption of methods as well as they recognize the impossibility of finding, in a unique way, one objective design method, valid in all different realties.

1.2 TODAY

In this framework we can affirm that the design process is neither a logic mechanical inductive process (the bricoleur) nor a deductive process (the engineer). The design process has to be considered in relation to other viewpoints able to join the concept of "invention" and innovation with the one of methodology and program.

The concept of "abduction" elaborated by Charles Sanders Peirce regarding his scientific theories are more in tune with this approach.

Differently from deduction, in which an "a priori" rule originates acts in a mechanical way.

Differently from induction, in which the observation of a high number of cases permits us to define a valid general rule.

The abduction assumes the definition of an hypothesis, not already given by the cases, and for this reason a sort of intelligent trying, verified afterwards with the help of data; an acting through "experiments" on a model that origins results that can be observed.

More recently other terms has been introduced like: "lateral thinking", "serendipity", "fuzzy-thinking", learning through trials and errors (starting from a falsification process as defined by Karl Popper); different efforts that are all finalized to the search of a valid alternative to the contrast (of the XIXth century) between the artistic genius and the scientist; between rigid processes e and non scientific procedures; between authorship and spontaneity; between modernity and post-modernity, that means between fixed methods and simple formalism; between the modern *tabula rasa* and the postmodern patchwork of different historical styles; between methods not related to shapes (Bauhaus and Ulm School) and shapes without methods, etc.

In contrast to the idea of design as applied art or as a science, a third and more recent approach introduced by Donald Shön presents design as a reflexive practice that's to say the capacity of building theoretical and general knowledge starting from practice. This peculiar attitude is actually coherent with the general need of research and educational institutions of leaving their traditional deductive approach – first theory and then, as a logic consequence, practice – to be able to better face the complexity of real world.

Through this approach the traditional division between theory and practice, know and know how, basic research and applied research appears as obsolete, both in the educational systems as well as in the real professional world.

Education and practice are coming more and more together offering opportunities of cross fertilization.

Companies and institutions are in fact increasingly interested in "design way of knowing" and design research; educational institutions are pushed to redesign their educational processes transforming their traditional deductive models, structured in strictly confined disciplines and branches, in a new combination characterized by a interdisciplinary approach as well as by the coexistence between theoretic and conceptual aspects (knowing) and applicative ones (knowing how to do).

2. THE ITALIAN EXPERIENCE: DESIGN DRIVEN INNOVATION

A concept that crosses the borders of design education, research and practice is the one of design driven innovation.

Often the term innovation is linked to white coats and labs full of unknown machinery; in other occasions one has the perception the innovation comes from the market, from listening to people for whom the products are made. However are there other forms of innovation, which go beyond the already well known "technology pull" and "marketing push" innovations?

Recently the definition of a new innovation concept, defined as "design driven" innovation, has developed and is being established. This innovation is not necessarily linked to technological innovation nor to sophisticated market analysis, but its driving force is given by the design capacity.

A good example of this kind of innovation can be seen in the Italian production system where the success of Made in Italy products is seldom related only to technology and where the real strength is given by the design of new qualities and new values that often crosses all the above mentioned borderlines.

There are different ways to give birth to design deriven innovation. The following are some of the most common methods:

– through the observation of users and perception (or anticipation) of socio-cultural changes;

– through the study of typologies, without considering them as fixed and rigid: typological hybridization is one of the most interesting design driven innovation methods;

– through other forms of hybridization like, for example, the ones referred to the combination of different functions, different users, different languages, and so on;

– by transferring solutions from one context to another; from one sector to another;

–by innovating the services, one of the most important immaterial component of a design project, able to act as a driver for other physical innovations;

– by managing the time variable of a design project, such as scheduling events that will occur in certain time and space.

Metadesign is the education method through which the design driven innovation tools and processes can be taught and practiced.

3. PRODUCT SERVICE SYSTEM: MULTI-CULTURAL AND MULTI-DISCIPLANARY APPROACH

One of the priority objectives of Politecnico di Milano is internationalisation, improving the quality of the educational system and the pro-motion of the competitiveness of Universities on an international level. A higher level of internationalisation of students enrolled in the courses of the Politecnico, with particular reference to second level degrees, PhDs, masters and specialization courses represents a crucial aspect of the development strategy of the Politecnico. Some subjects more than others lend themselves well to the Italian University Internationalisation process and in particular to the internationalisation process of the Politecnico di Milano. This is the case of Design, which is internationally identified as the Italian phenomenon and at the base of the success of "made in Italy" products in the world.

With this outlook in mind, the course in Product Service Systems Design (the first Master in design taught in English for international students) has been set up with the objective of forming highly qualified designers that can face the competition at international level. In particular the education program has the aim of being unique at international level, as an expression of the made in Italy education, bearing the typical values of design methods that Italy puts into practice. Additionally, the course wants to generate a dialogue and a systemic relationship with other international structures that represent completely different contexts, teaching models, project approaches and educational structures, all having however a standard of excellence in common.

3.1 EDUCATIONAL GOALS

The primary education objective of the Product Service System Course is to create figures that are capable of carrying out a strategic role in relation to the product-system, considering an approach that has always distinguished the plan of action in Italian design, and that takes on a paradigmatic importance in contemporary international contexts, where single innovation (whether product, service, communication or interior design), is no longer sufficient to face an ever growing global competition. The educational course aims at forming a designers capable of exploring strategies and forms of innovation that allow the "brand" of company as well as of a public institution to establish itself in national and international markets. Therefore, this regards a designer that is particularly required to contribute to plan and manage the entire corporate identity of a public or private, profit or non profit entity, up to the final users, through the creative coordination of products, services, events, retail spaces and methods of distribution. Through this professional figure, nowadays evermore fundamental (in terms of design and marketing strategies),design oriented firms and institutions can situate themselves in a new position of prestige. The formation of this systematic approach also leads to the acquisition of self-entrepreneurial capabilities able to stimulate the growth of new design firms.

Beginning with a solid multi-disciplinary theoretic-scientific based training process within a more general design of the product-system. A fundamental educational objective is, therefore, to offer a set of vast design tools. Logistics, marketing aspects, and strategic management, as well as the knowledge of the entire product-system network, communication and media, are the disciplines that integrate the proficiencies of the designer within the education program.

4. METADESIGN

Metadesign is an educational activity foreseen in the design study courses of Politecnico di Milano and it is also one of the fundamental courses inside the Product Service System first year program.

Metadesign appears to our ears, at least to Italian's, as a dusty word, that has lived its golden age during the 60's, in the years in which, as mentioned above, theorists aimed towards an ideal of scientification of the design process and studied the human brain activities in order to check if creative processes could be performed by a computer: if in other words, following the input of the correct data, a machine could generate automatically design outcomes, perfectly coherent to the initial requirements.

In these years Morris Asimow wrote *Introduction to design*, (1962), S.A. Gregory *The Design Method* (1970), Christopher J. Jones *Design Methods: Seeds of Human Futures*, (1970) , Bruce Archer *Systematic Method for Designer*s, (1965), just to quote some of the most important contributions to this research line.

Different publications, different points of view, but all based on the idea of design as a process, articulated in different phases, that can be planned with the help of sophisticated software. An idea far away from the one of a designer as a creative genius.

During the post-modern age the word metadesign disappeared: methodologies and scientific processes let the way to pure creativity.

Today the need of theory and of design instruments becomes updated again, but with a different nature. The idea of metadesign practiced in the design study courses of Politecnico di Milano is very far away from the approach of the 60's and has the ambition to respond –in part- to the education of the designer as a reflexive practitioner.

In this new way of considering metadesign, the aim is to combine science and individual genius; methodologies and tools with creativity and lateral thinking; theoretical principles that are no more recognized as universally valid together with intuition; a look towards the future with the knowledge of the past etc.

An idea of metadesign that crosses the borders of pure scientific approaches and matches historical, social as well as cultural values; that leaves the rigid objective and quantitative approach in favor to a more subjective and qualitative one.

In particular, unlike prescriptive actions, metadesign is an important tool for generating multiple solutions throughout the entire creative process:

– in the proposing phase giving birth to design hypothesis, to "models", as intended by Alexander (the so called "intelligent guessing");
– in the development phase, working on what exists, transforming, modifying, hybridizing, putting in a system the different solutions already been founded;
– in the "solution selection" phase, almost Darwinian, aiming to go in depth in the relative context of reference of the client, the users and also the norms of production, distribution etc. and developing a falsification process of the proposed hypothesis (so called operational intelligence).

In other words, metadesign intended not as a group of rules capable to give mechanically birth to positive results (aesthetic, functional, economical, etc.), but metadesign intended as a group of tools, methodologies, approaches, modalities able to support the "professional practitioner" and to strengthen his introspective, self-observation and reasoning capabilities on design processes: guided by

methodological kits, metadesign is able to contribute to build models and to select and validate the final selection of solutions; is capable to support and learn from ones errors, in order to make the falsification process more and more efficient.

In these terms, metadesign is to be considered as an hypothesis and as such subject to verifying and falsifying processes; it is a hypothetical knowledge able to solve problems, in which errors are the catalysing element of growth; it is a imaginative critical tool to be used to transcend time&space dimension in order to think up solutions that go beyond the "usual experience".

4.1 THE METADESIGN COURSE IN THE PRODUCT SERVICE SYSTEM PROGRAM

In a Metadesign course the students are asked to analyze the design problem from different points of view (the one of the user, of the client and of the designer) adopting different tools like quantitative analysis as well as ethnographic research; trends analysis and design scenarios generation.

The result is a concept that could generate in the future a high amount of different versions of specific projects.

The metadesign course of the Product Service System program is focused mainly on distribution and retail systems.

The course guides the students in observing the contemporary phenomena in different sectors (fashion, travel, leisure, entertainment, etc.), analysing the information acquired, defining contemporary trends in order to be able to draw possible future scenarios.

More in detail by the end of the course, students achieve different design research tool which enable them to:

– use different approaches to gather information from the environment;

– apply different techniques to gain a meaningful insight on different situations and contexts;

– draw scenarios as the backbone to project development and idea generation;

– apply creativity techniques to scenario based design innovation.

The course is articulated into three parts: the first one related to the data collection; the second to the interpretation of the data and the last one to the generation of innovative solutions (as illustrated in the following figure).

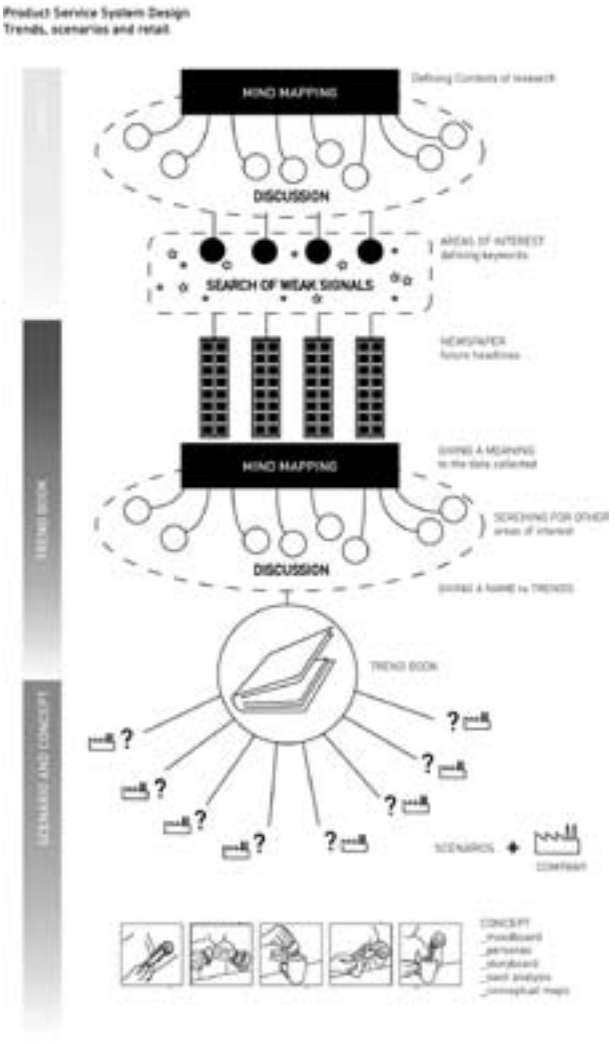


Figure 1: Metadesign course phases (by Valentina Auricchio)

To recall the ways to give birth to design driven innovation described above, the metadesign course: leads students through the observation of users (zoomers activity); guides them through the process of anticipating socio-cultural changes (trend book activity); allows the contamination of different contexts (students can use information collected by other students in different research areas); guides them through the definition of product service system solutions for hypothetical companies or institutions pushing them towards radical innovation in terms of the user experience and business model.

Each year the Product Service System class is made of approximately 20 Italian students and 30 international students coming from different countries[2] around the world and different educational backgrounds. This heterogeneity is a strength, but requires as well a particular international attitude of both the staff and the structure of the university. It is not only a matter of language, but mainly a matter of "openness". Openness to confrontation and willingness to change teaching methods which are suitable to global changes both on behalf of staff and students involved in the education process.

REFERENCES:

Alexander C. (1964) Notes on Syntesis of Form, Harvard University Press, Cambridge.

Archer L. B. (1965) Systematic Method For Designers, Council of Industrial Design, London.

Archer L. B. (1968) The Structure of Design Processes (Thesis), Royal College of Art, London.

Arrow K.J. (1951) Social choice and individual values , N.Y., J.Wiley & Sons.

Armour G.C.,Buffa E.S. (1963) "A Heuristic Algorithm and Simulation Approach to Relative Location of Facilities", Managment Science, vol. 9, n. 2.

Arnheim R. (1969) "Visual Thinking" , University of California Press.

[2]in the past three years the students have come from; Austria, Australia, Brazil, Chile, China, Colombia, Estonia, Finland, Germany, Ghana, Greece, Hungary, India, Indonesia, Iran, Israel, Lithuania, Netherlands, Poland, Russia, Spain, South Korea, Turkey, USA.

Broadbent G. (1973) "Design in Architecture" , John Wiley & Sons Ltd., London.

Cross N. (a cura di) (1984):"Developments in Design Methodology", J.Wiley & Sons.

Gregory S.A. (ed.) (1970), Progettazione razionale (The Design Method), Milano, Marsilio.

Hofstadter, D.R. (1985), Metamagical Themas, Basik Books, New York.

Jones J.C., Thornley D. (a cura di) (1963) "Conference on Design Methods" , Pergamon Press , Oxford.

Jones J.C. (1970) "Design Methods", Wiley-Interscience, London.

Jones J.C. (1963) "A Method of Systematic Design" in Conference on Design Methods, J.C. Jones and D.G. Thornley (eds) Pergamon Press, Oxford.

Jones J.C. (1970) Design Methods, J.Wiley & Sons, New York.

Lawson B. (1988) "How Designers Think", Architectural Press , London.

Lévi-Strauss C. (1964, 1st original edition 1962, The Savage Mind), Il pensiero selvaggio, Il Saggiatore, Milano.

Luckman J. (1967) "An Approach to the Management of Design" , Operational Research Quarterly , vol. 18 , pp. 345–358.

Margolin V. and R. Buchanan (1995) The Idea of Design. A Design Issues Reader, The MIT Press, Cambridge, Massachusetts, London, England.

Maver T.W. (1977) "Building Appraisal", in Computer Application in Architecture , J.S. Gero (ed.) ASP, London , pp. 63–9.

Maver, T.W. (1988) "Software tools for the Technical Evaluation of Design Alternatives" In T.W. Maver and H. Wagter (eds), CAAD Futures 87, Elsevier, Amsterdam.

Mendini A. (1969) "Metaprogetto sì e no", in Casabella, n.333, febbraio, pp. 4–15.

Milne M.A. (1971) "CLUSTR : A Program for Structuring Design Problems", Proceedings of the 8th Design Automation Workshop, Association for Computing Machinery, New York.

Mitchell W.J., (1977) "Computer-Aided Architectural Design", Van Nostrand Reinhold, New York.

March J.G. , Simon H. A. (1958) Organization, J.Wiley & Sons, New York.

Negroponte N. (1970) The Architecture Machine, MIT Press, Cambridge Mass.

Polinoro L. (1989) "Metaprogetto", in L'officina Alessi. Alberto Alessi e Alessandro Mendini: 10 anni di progetti, 1980–1990, F.A.O./Alessi, Crusinallo, pp. 50–59.

Popper K., (2002, 1st original edition 1934) The Logic of Scientific Discovery, Routledge.

Rosselli A. (1973) I metodi del design, Clup, Milano 1973.

Schön, D.A. (1987) Educating the Reflective Practitioner: Towards a New Design for Teaching and Learning in the Professions, Jossey-Bass, San Francisco.

Simon H.A. (1973) "The structure of Ill-structured Problems", Artificial Intelligence e pubblicato in Nigel Cross(a cura di) , 1984:"Developments in Design Methodology", J.Wiley & Sons.

Simon H. (1957) Models of man, J.Wiley & Sons, New York.

Susani G. (1967) Scienza e progetto, Marsilio, Padova.

Van Onck, A. (1964) "Metadesign", in Edilizia Moderna, n.85.

Learning Ecosystems Applied to Industrial Design Curriculum Development

EunSook Kwon, Ph.D.

Industrial Desig Program, Gerald D. Hines College of Architecture, University of Houston, Houston, Texas, USA, ekwon@uh.edu

ABSTRACT

By exploring an ecological system viewpoint while developing a design curriculum we constructed a learning environment which is a total system experience demanding reflection, expression, and critical thinking concerning the social and intellectual organization of everyday life. Using a four-year experimental case study of industrial design curriculum development at the University of Houston, Houston, Texas, this study explains how the unique characteristics of the ecosystem influenced this curriculum development; and how this new curriculum was developed on the basis of four ecological system principles application: aggregation, nonlinearity, diversity, and flows. During the development of this curriculum each design course and its pedagogy was connected to all other courses in the design curriculum through careful analysis of their interdependence. This was done to establish a codependent ecosystem community of living (students, educators, product manufacturers and consumers) and non-living (digital communication devises, materials and products) entities that work together within a social context of their environments.

Keywords: Ecosystems, design curriculum, sustainable process

1. ISSUES OF DESIGN CURRICULUM DEVELOPMENT

Within the emerging paradigms of the knowledge-based society and globalization, design education faces the need of reforming and restructuring its curriculum to address the many challenges and changes in how we educate people in our society. Curriculum, an integrated course of academic studies, is developed through a logical process of connecting the objectives of a particular program to curriculum components. The process of curriculum development is complex, which involves a series of varied negotiations among diverse components, i.e., vision, philosophy, content standards, pedagogy, performance expectations, rational for the use of technology, etc. These components are functionally bound in terms of the facts, concepts, tools, methods, practices, and commitments of the objectives.

Design curriculum development in higher education takes place within the environment of an educational institution containing academic and industrial elements, which includes a diverse array of development tools and methodologies. Through curriculum, educators develop a context of design learning that supports the acquisition of design knowledge and has the potential to connect students into a larger network with the design communities. Therefore, a core challenge of design education is how to develop curricular contexts and learning systems that extend themselves meaningfully into the personal and social life of everyone involved in the process; and to take it to a more flexible and sustainable level for the students' future competitiveness.

One of the most dynamic breakthroughs in how we can understand and guide change in educational learning environments can be achieved by creating and using learning systems. A learning system in education is an organized collection of parts (or subsystems) that are highly connected and integrated to accomplish overall learning goals and objectives. The notion of connectivity and interconnectivity was dramatically realized when the burgeoning

"Information Society" with its new technology shifted educational paradigms. Digitally connected learning broadens the scope of contemporary education within the globalization mindset, and it reinforces the educational visions and policies within a transparent, sustainable, holistic dimension. A digitally connected environment within a learning system provides a holistic perspective which also brings education into alignment with the fundamental realities of biological natural systems. Nature's connectedness within ecosystems as seen in the atom, organic systems, the biosphere, and the universe itself mirrors the dynamism of the fundamentals of connectivity and interdependence, which can inarguably be applied to design curriculum in the global learning context.

The purposes of this study was: (1) to explore natural ecosystems in order to construct appropriate ecological principles for application to design curriculum development; (2) develop a new industrial design curriculum for a 4 year undergraduate degree program based on these ecological principles; and (3) to analyze the efficacy of an ecosystem-oriented design curriculum and its effectiveness of curriculum development as a sustainable process.

2. DESIGN CURRICULUM DEVELOPMENT: CASE STUDY

The industrial design curriculum addresses design knowledge and its practices through hands-on experiences, and also addresses matters of form and function, innovation and creativity, discourse, materials and manufacturing processes, diversity and social harmony. These diverse contents and pedagogical principles must be carefully integrated and connected together to transmit the overall goal of academic and professional achievements. When this traditionally complex and intricate problem of curriculum development is overlaid with an ecosystem paradigm, the curriculum can be deconstructed and reconstructed to generate an educational model creating connectiveness, interdependence, interrelationships, and sustainability.

In 2003, the Gerald D. Hines College of Architecture at the University of Houston established a new Industrial Design (ID) degree program, as the first program of its kind in the State of Texas. The foundation of curriculum development was initiated on a premise of that constructing cognitive and social learning in the socially interactive context could provide an alternative perspective of enhancing the quality of design learning and design practice. Based on this premise, the design curriculum at the University of Houston was developed on the framework of constructivist design learning theory, with an emphasis on the active and reflective nature of learners in support of the learner-centered design paradigm (Kwon, 2004). Along with constructivism which was used for the foundational educational philosophy and methodology, the metaphor of nature and living organisms provided a seed in the first phase of curriclum development. Another driving force in developing a sustainable curriculum was the learning ecosystem, and its ecological principle application. This case study explains briefly how the sustainable design curriculum was developed in two phases.

2. 1. PHASE 1: DESIGN EDUCATION AS A LIVING ORGANISM

Design Education as a Living Organism (Kwon, 2007) emphasized the relevant epistemological and pedagogical theories used to construct a compelling and useful basis for design curriculum development, and also introduced the concept of design education as a living organism. The paper discussed how the unique characteristics of a living organism influenced an Industrial Design (ID) curriculum development with emphases on the three symbolic characteristics of an organism: the total eco-system, growth and metabolism, and reproduction. The analogy of the living organism provided a practical and pragmatic perspective to reinforce constructivist design learning and to transform design education as a continuum of personal growth and institutional development as a total eco-system.

Inspired by living organisms, the curriculum development incorporated the "wholeness of the system" and integrated other unique characteristics of the organism to reinforce the dynamic process of constructivist design learning. For example, a big-size system map was implemented to integrate all available courses and its academic sequences from freshmen to seniors. This map visualized the interrelationships among courses as well as the systematic concerns on the sequence and priority of learning. The concept of "metabolism" as the flow of matter and energy processes in an organism was also applied in order to facilitate the personal growth of the students in an integrated way to address the thinking about one's self, the community, and the world.

2. 2. PHASE 2: ECOLOGICAL PRINCIPLE APPLICATION

Learning from nature and its ecosystems has provided the development process with appropriate metaphorical roots for the curriculum design. For example, the metaphor of "production" refers to the student who is "the raw material" which will be transformed into a "useful product" under great care within high quality control system; the metaphor of "growth" considers the curriculum as the "green house" where students grow and develop to their fullest potential under the care of "wise gardeners" (Kliebard, 1991, p. 481). For the ID curriculum development in this study, the metaphor of "ecosystem" was applied at different levels. At one level, the ecosystem provided a way to address the complex process of connecting, through interdependence, all design learning components such as learning contents, pedagogy, media, and outcomes; at another level, the ecosystem allowed educators and students to think of the design learning process systematically in relationship to nature's complex adaptive systems.

3. LEARNING FROM ECOSYSTEMS

An ecosystem is a natural unit consisting of all plants, animals and micro-organisms in an area functioning together with all the non-living physical factors of the environment (Christopherson, 1997). An ecosystem results from the sum of a myriad individual responses of organisms to stimuli from non-living and living elements in the environment as thus are primarily governed by stochastic (chance) events. The evolution of living ecosystems is a cyclic process changing non-living materials and the responsive changes of organisms to the conditions surrounding them. This dynamic cycle creates the ecosystem's vibrant and information-driven process. Ecosystems are prototypical examples of complex adaptive systems. John Holland (1995), who coined the term "adaptive nonlinear networks", identifies four basic properties of complex adaptive systems: aggregation, nonlinearity, diversity, and flows. Generally, any ecosystem develops patterns of "aggregation" during its growth. Ecosystems also develop networks of components that are mutually connected. Any ecosystem can be characterized by its "flows": "flows" of nutrients and energy, "flows" of materials, and "flows" of information. The idea of "flows" has more than the movement of fluids. The "flows" may vary overtime, and become patterns that reflect changing and accumulated experiences. It is the "flows" that provide the interconnections and communication between parts, and transform the community from a collection of species into an integrated whole. Nonlinear systems are equal to more than the sum of their parts. "Nonlinearity" makes aggregation more complicated than linear averaging. Finally, "diversity" describes the quantity of variation with a vast range of different kinds of agents.

The following Table 1 presents attributes of these four properties with their visualized icons. With icons, these properties can be used as guides or principles for the complex and adaptive process of curriculum development.

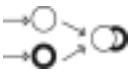
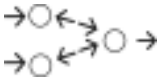
Properties	Icons
Aggregation	
Nonlinearity	
Diversity	
Flows	

Table 1: Four properties of complex adaptive systems

Through the study of ecosystems we can also address some of the fundamental questions related to the 2nd phase of design curriculum development, "What are the relationships between curriculum (the ecosystem) structure and its functions?" To what extent do the design learning components represent the properties and processes of quality education? These questions need to be asked in order to identify the effectiveness and efficacy of design curriculum development with the application of ecological principles.

3. 1. AGGREGATION AND NONLINEARITY

An important lesson gleaned from the ecological principle of "aggregation" was to categorize all courses based on their levels of design knowledge and technical skills, and to connect them mutually with carefully selected design themes/issues. The idea that aggregates design courses with a design theme creates a micro-system, which supports and reinforces the dynamic and interactive learning activities. With the dynamism of connecting tangible and intangible elements of design learning in a situated theme and context, we can connect learning activities, which are supported

and enhanced through interwoven learning experiences. The aggregated courses under a specific theme clearly reinforce learning goals and outcomes.

Usually changes that occur in ecosystems are gradual and incremental. Most of these gradual changes are in principle detectable and usually predictable. When abrupt changes in ecosystems happen they occur in a very "nonlinear" way. At this point nonlinear changes occur relatively rapidly as parts of the ecosystem shifts to a new state. The principle of "nonlinearity" can be utilized as a method to introduce an efficient model of adapting to new learning experiences within the conventional higher education system. By borrowing the description of "nonlinearity" from a complex adaptive system such as the ecosystem, we see that small changes in inputs can cause major changes in the outputs. For example, the ID program organizes one or two workshops a semester led by practicing designers who introduce through seminars and design briefs projects, which are related to their own working environment and experience. This intense and non-studio format learning environment has been shown to mimic the "nonlinearity" process seen in ecosystems by shifting the students' learning to a new state. This repeated process eventually narrows the gap between design learning in academia and design practice in the industry through the introduction of abrupt changes in the learning environment. Students learn from the invited designers at these workshops, and they also learn from their peer students because all study levels participate in this process together. The idea of "nonlinearity" supports the breakthrough pedagogical experiences of the workshop because there are no boundaries for the learning form, no fixed learning levels of participants, and there are no fixed class hours or environments. Students within the workshop devote one and a half days to solve the design problems and they do this surrounded by knowledgeable mentors and a supportive environment. The effectiveness of these workshops to introduce design practices and engender social interaction has been highly evaluated by students. The effectiveness of these workshops was significantly recognized by the educator when they saw that the students transferred their workshop experiences to the design studios and other courses. It

was clear that the interaction of the students with the professional designers within the workshop setting showed a higher impact of knowledge acquisition through a "nonlinear" process.

3. 2. FLOWS & DIVERSITY

Knowing is an activity, which is contextualized and constructed socially and culturally. In the ecological sense of the term, knowing is realized meaningfully when it affords networks within the world environment. In other words, knowing is a process of becoming connected to and engaged in dynamic networks in the world with a purposeful and goal-directed manner. "Flows" and "diversity" play a significant role in facilitating the knowing and learning process. Firstly, "diversity" describes the quantity of variation with a vast range of different kinds of agents. John Holland (1995) explains a complex adaptive system is a dynamic network of many agents, and the agents are the adaptive actors. Agents interact on the local level, self-organized, and produce emergent complex behavior. The increased interactions between agents allow the modification and diversification of agents. Again, an essential aspect of such systems is "nonlinearity, leading to historical dependency and multiple possible outcomes of dynamics (Levin, 1998).

Introducing "diversity" into the learning environment in order to create historical dependency and multiple possible outcomes can be accomplished through interdisciplinary learning. Group learning with students from "diverse" backgrounds is an important pedagogical method in enhancing the historical agent of "diversity" considered in the curriculum development. The inclusion of "diverse" students in design projects or workshops and the creation of "diverse" teams establish rich contexts for social learning and dynamic networks. A design studio project completed in 2005, "Design in Houston, Made in China," is a good example that demonstrated how interdisciplinary learning could be planned and managed within "diverse" disciplines (industrial design, graphic design, marketing, and manufacturing) and even with diverse agents in different locations. This was an intensive

project that lasted for the 13 weeks which established a complex adaptive system where patterns at a higher level emerged from the localized interactions of all the people involved. Figure 1 explains the different agents evolved in the projects, and their interconnected social networks.

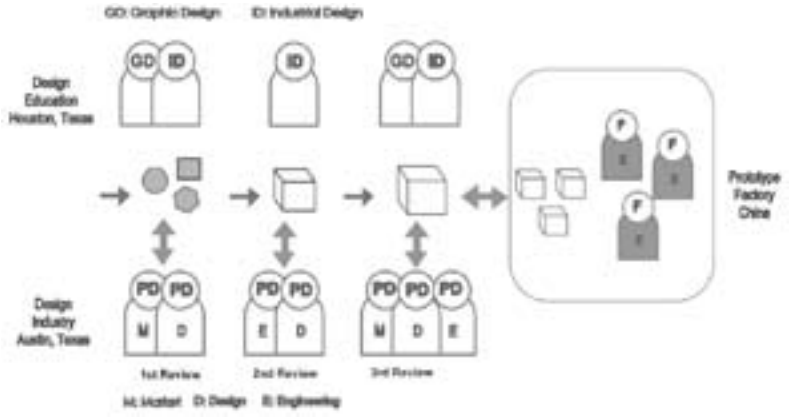


Figure 1: Application of "diversity" principle to a studio project

Understanding the ecosystem "flow" requires knowledge of the interactions of organisms within a specific ecosystem and their environment. The challenge in knowing the "flow" of energy and material within the ecosystem is defining or organizing the specific ecosystem that you are working with. "Flows" consist of the exchange of resources and other interactions between organisms or agents, and it refers to the recycling effect in the networks involving these diverse agents. In addition to the personal level of information exchange and networking, the "flows" of information can be created and managed in the curriculum development process using ecosystem principles. The ID curriculum uses the "flows" of design knowledge to interconnect design courses offered within a semester or consecutive semesters in order to emphasize, stimulate, and reinforce students' learning. Along with the recycling effect in students' networks, earnest and intelligent discourses between instructors initiate the "flows" of learning, and can finally realize an efficient and effective model of curriculum development. Figure 2 demonstrates an application of the "flows" principle for courses designed for the 3rd year students in two consecutive semesters under the theme of sustainable design.

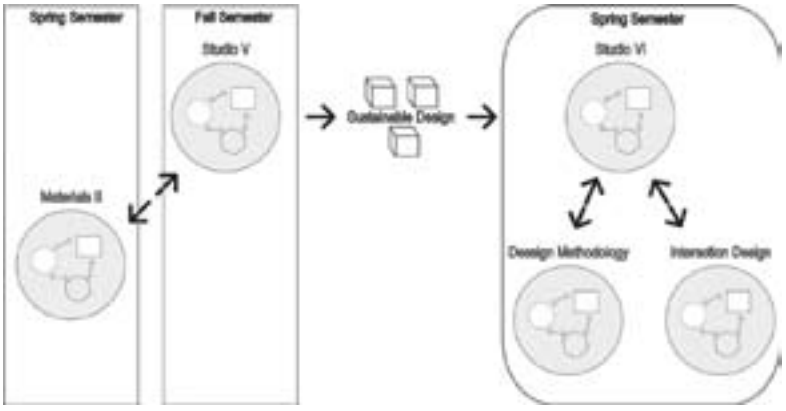


Figure 2: Aggregated design courses and its information flows with the theme of sustainable design

4. EFFICACY OF ECOSYSTEM-ORIENTED DESIGN CURRICULUM DEVELOPMENT

From the four year case study of curriculum development, the ecosystem was identified as an operational model and its well-known four properties of the complex adaptive system were applied as ecological design principles to the design curriculum development. The complex adaptive system helped us understand the entire curriculum system where more complex and interwoven learning activities are continuously generated and recycled. "Aggregation" provides a standard way of simplifying complex curriculum components by grouping similar learning objectives and activities. "Aggregation" in this sense becomes one of the core principles for the construction of design curriculum models. The aggregated categories become building blocks or units emerging with complex large-scale of curriculum development. When a curriculum model is tacit, the process of connecting and integrating building blocks proceeds on an evolutionary scale.

The principles of "nonlinearity" and "diversity" are driving forces to guide and generate high quality learning experiences to produce highly innovative and creative outcomes. Designing knowledge communities within and outside design studios becomes a key

for the students to accomplish learning objectives. Establishing the "nonlinear" and "diverse" networks allows them to experience more dynamic and efficient ways of managing design projects. The sustainable way of creating and implementing learning "flows" provides a practical path of accommodating "diverse" issues and themes that have dominated the current design world. With the ecosystem principle application, the ID curriculum became a total

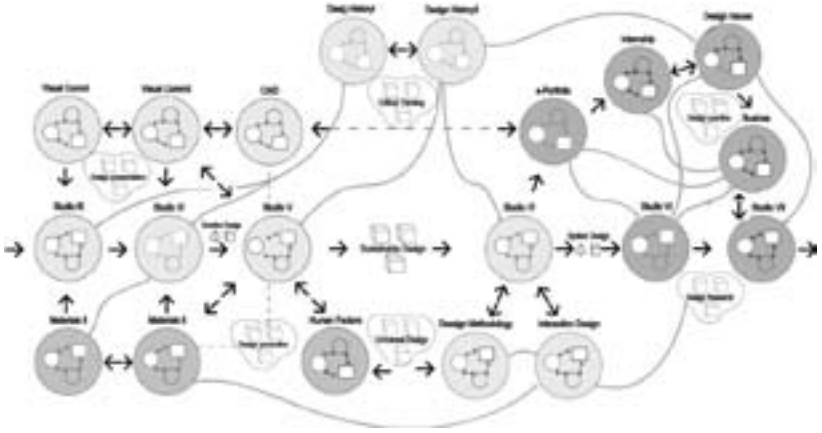


Figure 3: ID Curriculum Model with the ecosystem principles

entity of continual growth and evolution as explained in Figure 3. To keep the ecosystem-oriented curriculum successfully in balance, the important role of educators and students should be readdressed. In a complex adaptive system, a portion of any agent's efforts at adaptation is spent adapting to other adaptive agents. Active and meaningful participations of agents (educators and students) are significantly important to facilitate the contexts and contents of learning. This study emphasizes "holistic" educators and "new" students who form a living community together within an ethical framework that goes beyond the old paradigm of standardized and separated non-dependent learning pods.

5. SUMMARY

The efficacy and effectiveness of applying the ecosystem principles

to the ID curriculum development are discussed in this case study. The potential of the learning ecosystem can be seen to explore systematically the terrain of design curriculum through interdisciplinary work that includes the sociology of knowledge, curriculum theory, and technology. The natural ecosystem provides a way to reflect on the interdisciplinary nature of critical arguments, integrating educational philosophy, methodology and curriculum theory when defining the substance of educational practices.

In addition to the efficacy of curriculum development, the ecosystem-oriented design curriculum will generate the awareness of the vibrant interconnectedness of the global economy, which can be used to enhance universal competitiveness. The exploration of natural ecosystems can provide useful guidelines to direct development of future design curriculum worldwide.

REFERENCES:

Christopherson, Robert W. (1997). Geosystems: An Introduction to Physical Geography. 3rd Ed. Prentice Hall, Inc.

Holland, John H. (1995). Hidden Order: How Adaptation Builds Complexity. Addison-Wesley.

Kliebard, Herbert M. (1991). Metaphorical Roots of Curriculum Design. In Hlynka, Denis and Belland, John (Ed.), Paradigms Regained: The Uses of Illuminative, Semiotic and Post Modern Criticism as Modes of Inquiry in Educational Technology (pp. 481–482). Educational Technology Publications.

Kwon, EunSook. (2007). Design Education as a Living Organism: A Case Study of an Industrial Design Curriculum Development, Connected 2007 International Conference on Design Education. CD proceeding. University of New South Wales, Sydney, Australia. July 9–12.

Kwon, EunSook. (2004). A New Constructivist Learning Theory for Web-Based Design Learning with Its Implementation and Interpretation for Design Education, Dissertation, the Ohio State University.

Levin, Simon A. (1998). Ecosystems and the Biosphere as Complex Adaptive Systems. 1:431–436, Ecosystems Springer-Verlag.

Morf, A. 1998. An Epistemology for Didactics: Speculations on Situating a Concept. In Larochelle, M., Bednarz, N. and Garrison, J. (Eds.). Constructivism and Education. 29–42.

Cambridge: University of Cambridge.