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Visual Communication Skills for Business and Engineering Students

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Abstract: Much effort has been made at studying creativity and how this can be taught. The teaching of art and design has been expounded as one good way of nurturing creativity, particularly to non-art and design students. This paper explores this through an elective course on “Creative Design in Communication and Marketing” conducted at Nanyang Technological University targeting primarily undergraduates majoring in Business and Engineering. The pedagogical approach is presented with details of the course structure and delivery. Observations on the learning outcomes and the students’ learning experiences are made through analysis of their design works and their interaction and responses during the course. This paper concludes with an assessment of the implications, benefits and relevance of such a design course in nurturing visual communication skills in business and engineering students.

Keywords: Visual Communication, Creativity, Engineering Undergraduates, Business Undergraduates

Introduction

VISUAL COMMUNICATIONS INVOLVE solving a design problem with a creative solution which leverages on the visual senses. A creative solution is defined as one that is a solution to the client’s problem and appropriate for the client/product, spirit and objectives. It communicates clearly and is expressed through the design medium/language. It is functional, has impact, and is memorable, original, fresh, stimulating, exciting and stunning. It is executed appropriately and well (Landa, R. 1998, Hausman, 1975; Andrews & Smith, 1996; Newell & Shaw, 1972). Traditionally, the training of visual communication skills applies mainly to graphic design students. Training emphasizes creativity to come up with original solutions in problem solving integrating knowledge from different disciplines. With the advance of new technology, these creative solutions can be expressed in various media that suit the message. This paper explores the pedagogical approach to nurture creativity through visual communication skills. Instead of graphic design students, the targets are Business and Engineering students. This study is based on a course designed specifically to develop in Business and Engineering students the skills for creative use of visual communications. Presented in this study are the details of the course structure and delivery. Observations are made on the learning outcomes and the students’ learning experience. It concludes with an assessment of the implications, benefits and relevance of such design course in nurturing visual communication skills in business and engineering students.

Why Creativity for Business and Engineering Students

Creativity is regarded as a major source of national, competitive advantage and of personal success (Howkin, 2001). According to former US President George Bush, “The strength of our economy is built on the creativity and entrepreneurship of our people” (Bush, 2002). The present knowledge economy calls for people who have intellectual capacity – the capacity to create and produce knowledge (enGauge 21st Century Skills). People who are creative thinkers are not only capable of creating and producing new knowledge, they also understand how to take this new knowledge and technology to the next stage into the marketplace and to serve society. Together with the skills of effective visual communication, these creative thinkers possess the full power of creative persuasion in a globalized knowledge economy.

The stress on creativity and entrepreneurship in a globalized knowledge economy thus calls for a shift in university education from transmission of knowledge to nurturing creativity and innovation, from highly compartmentalized specialized disciplines to those more open to integration and collaboration of multi-disciplines (Duderstadt, 2008). Our pedagogical approach needs to be directed towards teaching the skill of creation to nurture creativity in all learners. Pedagogy which creates an environment for students to engage in creativity, innovative design, creative problem solving skills, and team building also enables students to be active in learning and discovery. Most psychologists and cognitive scientists from John Dewey to Seymour Papert have found that the most effective learning occurs through the active discovery and application of knowledge (Duderstadt, 2008). Therefore, creativity, innovative thinking and active discovery have to be seen as fundamental capacities of all individuals, not just the few (Danvers, 2003; Moreau & Dahl, 2005).

Nurturing Creativity using Visual Communication Skills

There is a wide range of methods within educational contexts to increase creativity (Timberlake, 1982; De Bono, 1983; Montouri, 1992). These include cognitive, personal, motivational and social interactive approaches (Gardner, 1982; Bull, *et al* 1995). The teaching of art and design has been expounded as one cognitive approach to nurture creativity (Read, 1958; Eisner, 1962). As Schubert put it, “Art experiences and related activities provide development and creativity to general intelligence, particularly the relationships of these factors to the ability to conceptualize, reason, make abstract associations, perceive, imagine, and invent” (Schubert, T., 1986). Others defined visual communication education as a sensory education in which emphasis is placed on both the aesthetic and the cognitive development of the student. Emphasis on learning is facilitated by experiential education, and promoted through the student making his/her own images of his/her world, both as a process of thinking and as a product which communicates his/her ideas to others (Grenfell & Krane, 1979). Most educators agree that visual communication involves creativity and problem-solving, theory and application, intuition and rationality, and empathy and self-expression, while some have called for more integrative pedagogy across other disciplines (McCarthy & Almeida, 2002).

Pedagogical Approach for the Non-design Students

This paper studies the pedagogical approach of a general elective course titled Creative Design in Communication and Marketing conducted at Nanyang Technological University.

It is open to all undergraduates, with the majority of those who have attended being Business and Engineering students. Surveys on those enrolled in the course indicate that most have very little or no background in the visual art before taking this course. Due to the popularity of this course, it has been running continuously for 10 semesters since its inception in July 2004. Because of the high demand, course capacity was increased from 40 to 50 students from the January 2008 semester and the course is usually fully subscribed. Students attend a three-hour lecture-cum-tutorial every week for twelve weeks in a semester. The objectives of this course are to nurture creative thinking in conceptualization; understand the planning and strategy involved in developing creative solutions including brand identity creation; and the training of visual perception, analysis and communication using design fundamentals. This paper reflects on the experience gained in the teaching of this course by the author who designed this course and has also been the lecturer since July 2004.

Course Content and Approach

Students were first introduced to various ways of creative thinking to generate ideas. These included divergent thinking (Guilford, 1959; Danvers, 2003; Scott, 2004), associative thinking (Young, 1975), lateral thinking (De Bono, 1970), analogical thinking (Gordon, 1971) and visual thinking, together with creative thinking techniques including brainstorming and free association with words, images, sound, smell, taste, touch and motion (Van Grundy, 1997). After each topic was introduced, students formed themselves into small groups of four to five to apply the knowledge learnt in an exercise. An “open-ended” mode of inquiry was encouraged in the exercise in order to get a free flow of original and novel ideas for divergent solutions. For example, in an exercise using divergent thinking, students were tasked to come up with a variety of solutions for a self-promotion program for a cake shop. An exercise using lateral thinking would require students to brainstorm for a unique and novel birthday present for someone who has everything. Students also practiced brainstorming using free association with words, images, etc. with topics like ‘childhood friend’, ‘diary of a bus driver’, ‘mountain climbing’, etc. Appendix 1 shows two of these exercises done by the groups.

In conceptualizing for a creative solution, students learnt the essentials of background research, and the strategy and approach to a creative outcome. Using the group project to design the brand identity for the launch of an event or a company that promoted earth friendly awareness as an example, students learnt to identify the design problem for a real world issue that countries are facing. This was followed by defining the objectives of their project and writing the message for their target audience. They also created their product distinctive feature, product positioning and choice of an appropriate appeal for their product. Students also learnt the fundamentals of brand identity design. Many real life examples were used as illustrations. The goal was to bring their learning experience as close to the real world as much as possible. An example was the use of Singapore Airlines as illustration. Through discussion, students learned how and why the global icon *Singapore Girl* was created. Virtually unknown in the 1970s, Singapore Airlines has become one of the most well-known airlines in the world with its successful brand strategy and positioning, winning many brand awards. *Singapore Girl* is the brand appeal that has been sustained and protected throughout the years even though the emphasis might vary.

They also learnt to perceive and analyze visual images using design elements and principles and, with the understanding gained, to achieve creative results in designing the visual identity system for their brand.

Course Structure and Delivery

This course stresses structured techniques which are found to be more effective than those that used unconstrained exploration or creative expression as a means to develop creative skills (Hokanson, 2007). It is especially so for a class size of 50 with the majority of the students having very little or no background in the visual art. The lessons are structured to nurture creativity using collaborative activity, idea generation and exploration, student-directed learning and the application of ideas (Fasko, 2001; Scott, *et al*, 2004).

Interactive Style of Delivery to Engage Students

Though the class size is 50, lectures were carried out with the intention to engage students fully. Thought provoking questions were posed to the students so that their comments and responses, supplemented by the lecturer's responses, formed the subject knowledge to be delivered. Students took turns to answer the questions so that everyone had the opportunity to contribute and became partners in the learning process. Questions, together with the heavy use of visual images on colour PowerPoint slides, videos and TV commercials, were organized to illustrate, to engage and to guide students to understand and perceive visual images. Witty remarks were often used by the lecturer to create a fun and interesting learning environment.

Group Learning to Encourage Creativity and to Construct new Knowledge

Classes were structured around collaborative and cooperative learning involving students from various disciplines to mix and generate ideas. After each topic on creative thinking or design concept, students were formed into small groups of 4 to 5 to brainstorm in a specified time given. This allowed students to rapidly generate creative ideas and apply the concepts learnt in a given exercise. The objective was to develop in them, through actual repeated practice, their fluency, flexibility and originality, three types of traits common in people of high creative ability according to Guilford (Moriarty, 1986). This also enabled them to construct new knowledge while engaging in group activities (McCarthy & Almeida, 2002; Switzer, 2004). They then presented their ideas and solutions to the class. Presentations by the groups also enabled articulation, expression and representation of what was learnt while meaning was shared with others.

Collaborate with Team Members through Hands-on Projects to Nurture Creativity and Ability to Work in a Team

Students also formed teams of four or five to work on a final project which was to create a brand identity for a product, for a company or for an event. These projects provided opportunities for students to conceptualize and experiment with original and novel ideas, and to brainstorm in a group to challenge preconceived patterns and to further explore new ideas. Students were encouraged to brainstorm thoroughly in a relaxed and comfortable environment. The aim was to facilitate formation of a new, one-of-a-kind identity as a creative solution

to a design problem. This process also helped to nurture creative thinking by providing opportunities for cognitive growth, to learn through sensory interactions, to explore and experiment in a team, to challenge one another's mind and to learn from one another's talent. The final project was again presented by the team to the whole class for further comments and discussions. Each team also submitted a report on how they conceptualized their idea, the creative strategy and approach involved, and the form it took in addition to all the design works for the brand identity system. A paragraph on individual contribution to the project had to be included in the report.

Feedback and Guidance from Lecturer

Students were given feedback by the lecturer during class after their presentations. Students also received group consultations during their project and verbal and written feedback after their project presentations. It was during these consultations that some of the problems the groups encountered could be brought to light and be resolved. Through questions on why they chose to do what they did, and suggestions of other alternatives, students were constantly encouraged to question and to improve their ideas and to push their creativity to a higher level. These processes of improvement are closely monitored and assessed by the lecturer.

Learning Outcomes

Factors for Assessing Creativity in Visual Communication

The three types of traits common in people of high creative ability according to Guilford were used for assessing creativity in the students. These are fluency – the ability to rapidly produce ideas; flexibility – the ability to produce original, divergent solutions in a number of categories or areas; and originality – a function of frequency of occurrence (Moriarty, 1986; Torrance, 1974).

Group Exercises

Students were given a specified time in class to come up with the solutions to the problems given in the exercises. Data collected from the group exercises done in the past 6 semesters show that 87% of the groups demonstrated fluency; 63% demonstrated flexibility; and 58% demonstrated originality. Appendix 2 shows two of these exercises that demonstrate creativity in brainstorming.

Group Projects

In addition to assessing students on their fluency, flexibility and originality, other criteria such as group brainstorming effort, concept, strategy and approach, message content, public appeal, and delivery were also used. Individual contributions were monitored to allow individual merit to be reflected in the student's grades.

Based on the quality of the team projects and presentations made by students in the course over the past 6 semesters, the students taking this course can be broadly classified into three categories.

The first category consisted of groups which had successfully created brand identities that were distinctive, with designs that are original, novel and attention grabbing. There are indications that they had gone through thorough brainstorming to generate multiple ideas before arriving at very creative results. The intended message for the target was clear, impactful and comprehensible. For example, the choice of colours, fonts, shapes, textures, etc. suited the message and the target very well. They exhibited excellent strategies and approaches and constantly improved on their designs. Their enthusiasm and strong interest enabled them to put in extra efforts and submitted more design applications than was required. Before they made presentations on their project, they used other media, such as video, to set the mood so that the audience could have a better idea about the nature of their project. It is encouraging that 47% of the students fall under this category. The results show that this category of students, while not majoring in art and design, can and has cultivated the interest in, and demonstrated the creativity and talents for, becoming excellent visual communicators. Appendix 3 shows a sample of a group project in this category.

The second category, comprising of about 35%, submitted works in which very good brand identities were created. The intended message for the target was clear. The form used suited the message and the target in general. There was originality in the designs indicating that these groups had gone through their brainstorming to generate a fair amount of ideas before reaching some reasonable strategies and approaches. They submitted a good number of applications and made good presentations. It was clear that these groups grasped the fundamentals, demonstrated potentials to be creative and were able to produce good results in visual communication to support their areas of work in business and engineering.

The third category consisted of students who submitted works in which the brand identities were not clear. Although there were some good ideas for the designs, these were not well executed indicating a lack of commitment or enthusiasm among these students. There seemed to be also a lack of thoroughness in brainstorming for creative ideas and the strategies and approaches proposed needed further improvements. This category, comprising of about 18% of all the students, only submitted applications which met the minimum requirements.

Learning Experience from Surveys of Students

Based on feedback from exit surveys of student, the students generally found their learning experience “*fun, interesting, challenging yet rewarding, enjoyable*” and some “*memorable*”. Most agreed the “*structure of instruction followed by class exercises is very effective in helping students apply what they have just learned.*” They also found relevant and interesting examples that were frequently used to support the concepts taught and to aid in their understanding of these concepts. Sample comments from students on some aspects of their learning experience in exit surveys are provided below:

Whether Hands-on Practice and Group Brainstorming Supported Nurturing of Creativity

“This project deviates from most of the projects we get in school as it encourages a hands-on approach and it is a project that is impossible to do without squeezing our creative juices. Throughout this project, students were taught the importance of brainstorming and how ‘no ideas are stupid’ as the creative spark can come from the most unexpected source. Overall,

this course is a visual feast and challenges all students to wear their creative hat and think differently.” “In this class, I really like the method our Professor used. I had a lot of brainstorming and I think a lot in the class.” “I gained a lot of inspiration during our practical sessions. This was a nice way to unleash creativity and new ideas came up which were always there but I was not aware of them.” “At first I didn’t like the weekly group exercises because I felt stressed having to come up with ideas within a short time span every week. However, I found that it trains me to think quickly and brainstorm ideas freely.” “Through the conceptualization process, I realize that my ideas can be very good and creative.” “The project was initially uninteresting. After brainstorming, more ideas flowed in and we were more excited about the project.” “It was an enjoyable process. The exercises and project allowed me to express my creativity and experiment with the different ideas. Sharing creative ideas within the group was very fun too as we challenged each others’ ideas.” “Theories were being applied through hands-on practices and we learnt more through group interaction.” “I felt like being an Art student. Instructions were clear and there was enough space to be creative. In the end there were so many good different solutions presented which was quite surprising.”

Whether Teamwork Contributed to the Generation of Ideas and a Sense of Accomplishment

“Group projects are fun and exciting, totally different from the projects that I’ve been doing for my major. Building on each other’s ideas produces a better final product.” “The idea for our final project was our own. And our teamwork turned out to be very good. We worked together so well.” “The projects allowed me to get to know people and to learn to better understand the creative differences between people. I also got to exercise my creativity and share ideas during the group discussion sessions.” “I love my teammates. We are all super motivated to finish this project. Although it is time consuming, I enjoy the process of starting from nothing and ending with something we are all very proud of.” “I learnt a lot from my teammates. All of us are very creative and responsible as we are able to churn out non-conventional ideas and are willing to put in effort to make our ideas work. I am very satisfied with the final outcome of our effort.” “My email account is flooded with discussions and the responses are fast and furious. It is nice to have teammates that are willing to put in their effort, making the learning journey fun and enjoyable.”

Whether there were Challenges Faced

“The main challenge was to combine different opinions of people coming from all over the world (referring to exchange students).” Some indicated “lack of technical expertise to fully express our ideas.” “It took considerable time for a design idea to mature, especially in the conceptualization and research stage. However, all these had to be condensed in the 3-month course, thus making the whole process fun yet challenging.” “The course provides challenging tasks, especially the project where lots of effort and thoughts were required to be original as well as a solution that was suitable to our design problem.” “The project provided a fresh new perspective to how agencies in real life execute creative ideas...We were initially very intimidated...we had to throw many ideas we liked because of our lack of skills...Nevertheless,

the end result was absolutely satisfying – we mastered Adobe and the various design concepts and tools with many sleepless nights of staying up to do the project.”

Whether Students Found the Course Beneficial

Student feedback based on the last six semesters indicated that 85.3% of the students found this course to be beneficial. Some of their comments were: *“Seeing how other people have done their projects has also inspired me to view and create more of my own designs and ideas.” “Some of my classmates’ works are rather impressive!” “I’ve learnt to think about the possible thoughts and processes which go through designers’ minds.” “The course is enriching, allows us to think out of the box.” “This course is one of the most successful and interesting course I took this semester. The highly interactive and hands-on nature of the course make every lesson a joy and not boring, not stressful. This is a good break from all the heavy academic subjects we face in school.” “The project has inspired me to take a course in Photoshop so as to learn a new IT skill that will help me in my future career.” “The skills I’ve learnt are lifelong and I’ll definitely use it in the future.” “I want to be a trendsetter for green!”*

Conclusion and Implications

Based on the study in this paper, it can be concluded that most Business and Engineering students can be trained to be effective visual communicators through coursework in visual communication. Creativity is embedded in and is part of the problem-solving process in visual communication. Creativity can be nurtured while acquiring the skills of visual communication. It can also be developed in a large class of 50 and to a broad range of learners who have little or no background in the visual art. Creativity training can be built into lecture cum tutorial classes in a learner-conducive environment which supports engagement, hands-on exploration and knowledge discovery. Brainstorming in small groups is essential to generate creative ideas and to seek multiple solutions and perspectives to a problem. Students learn that there are more than one way to approach creative problem-solving. Group projects bring diverse talents from different disciplines and even different countries to work together. In addition to learning from one another, they may find that complementary strengths can make group activity more effective.

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Appendix 1

For the topic *Diary of a Bus Driver*, the group brainstormed using words 'diary', 'bus', and 'driver' to generate long lists of associated words. They highlighted the words they selected to further brainstorm the associated images. The result was a big lock with a key hole revealing a bus driver looking at his rear mirror which reflected the different moods and characters of his passengers. These were the daily images the bus driver kept locked in his 'Diary'.

Similarly, for the topic 'Childhood Friend', this group brainstormed using words 'childhood' and 'friend' to generate long lists of associated words. From the words they selected, they brainstormed the associated images. The result was pages in a diary showing a lifelong friendship.

Appendix 2

Group exercises after each topic learnt

Group brainstorm using analogical thinking with the word 'Colorful'

Group exercise on free association using word and images

Topic given: Deep Sea Diving. Images are seen from the viewpoint of a dolphin.

Appendix 3

Brand identity design for a green educational campaign targeting the children

Company vehicle

Travelling exhibit - truck open up for display of posters & for educational activities to be carried out for children

About the Author

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Siu Kay Pun is currently a LECTURER in the School of Art, Design and Media, Nanyang Technological University (NTU), Singapore. She teaches visual communication and moving images. Most of her students are Business and Engineering students. Prior to her teaching career, she was a SENIOR MEDIA SPECIALIST and DEPUTY DIRECTOR with the Centre for Educational Development at NTU. Before joining NTU, she spent 12 years as SENIOR PRODUCER and later EXECUTIVE PRODUCER for TV programmes with the Singapore Broadcasting Corporation. Her research interests centre on visual literacy and visual communication.

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