Analysis of Emotion and Cultural Background on Affective Design Process

Amic G. Ho[✉]

School of Arts and Social Sciences, The Open University of Hong Kong,
Ho Man Tin, Kowloon, Hong Kong
amicgh@gmail.com

Abstract. The interplay of several factors in design included designers and users shaped the outcomes of design development process. There are some studies provided evidenced that emotion and cultural values influence the roles in design over all aspects of living and it is assumed that the process of design is not exempted from these pervading effects. Yet, they were still not yet be the top concerned topics in the affective design process. Hence, a strategy is needed for making use of emotion control and recognition of cultural background effectively in the design process. This study aimed to examine need for new methods and recognize the relationships between emotion and recognition of cultural background for the changing nature of design. A field experiment was adopted to examine the proposed design process. The participants' feedback and reflection were collected by observation and self-report from the participants for developing further in-depth studies.

Keywords: Emotion · Recognition of cultural background · Creativity · Design process

1 Introduction

Satisfying the growing needs for creativity and interesting outcomes was one of the challenges in nowadays society. In the case of design, designers are expected to come up with products that are both innovative and user-friendly to their users. In order to equip designers, the ability for generating innovative ideas, most studies have concluded that the creative processes and learning process in design study should include the training on the capability of cognitive thinking. This ability can leverage individual tacit knowledge. Most of these studies have advocated rational educating approaches. Similarly, most educators guide design learners in manipulating the learning process in design studies through problem-based creative processes methodology which focuses on training the ability of problem-solving skills [1–4]. Even so, many design learners still cannot resolve their design problems in a creative way. This implies the presence of other hidden factors hindering these learners' practice. Hence, identifying the hidden factors can facilitate design learners' creativity as well as enhance their design abilities as a result. In addition, although certain design scholars have investigated approaches for helping design learners, they have been forced to engage in cross-disciplinary research because of the lack of references or prior investigation under the topic of

creativity in the extant design literature. According to the insights derived from psychological studies, certain scholars have proposed that emotion and recognition of cultural background are involved in designers' thinking process. Emotion and recognition of cultural background are potential elements those affect how design learners generating ideas and their manipulation of their design processes. Therefore, this study proposed a strategy for emotion and recognition of cultural background development. A field experiment was conducted to examine how educators assist design learners to manipulate their design process by exploring the relationships between design, emotion and recognition of cultural background.

2 The Challenge for Conducting Creative Processes

It was commonly agreed challenge in design creative processes are improving the design process and design outcomes effectively. In order to overcome this challenge, it was essential to enhance design learners' project experience [5] and increase their familiarities on creative techniques and skills to master the complex design process. Therefore, some design scholars introduced the problem-based teaching and learning in design creative processes [6]. However, the educators still face the problems such as the method of providing a 'creativity stimulating environment', 'structuring the (design) processes', delivering and requesting information in an appropriate approach. It was understandable for the needs to encourage learns' creativity and innovative skills. The arising of the technologies lead the learners using various new media in their daily lives and their learning process. Such media-driven environment leads new challenges to learn and understand in different kind of methods. The educators, therefore, had the responsibility to lead the learning in a creative approaches and practices to get their attention. Creativity is one of the methods to create knowledge. Hence, the methods of simulating creativity have a spill-over influence on to support self-learning and even life-long learning skills.

3 The Current Creative Training Influence in Learning Programme

Conducted the review on the current studies, it was found that creativity, as a relatively complicated concept, involved several fields of studies [5–7]. Scholars studies various approaches to strengthen a relatively completed concept of creativity. The aspects of those studies were categorised as the followings:

- Psychometric approach: creativity theories of this aspect were regarded as a quality that can be measured.
- Psychoanalytic approach: creativity theories of this aspect were regarded as the unconscious execution for artistic design objectives.
- Self-expression with recognition of cultural background and mystical approach: creativity theories of this aspect were aimed to express oneself with unique methods.

- End-product approach; Creative experience was regarded as a kind of function to produce creative design experience which can satisfy the users' needs.
- Cognitive approach: this approach embraced 'phase-oriented studies', 'pragmatic methods' and 'thinking theory'.

Creativity was regarded as a miraculous talent of the individual. It attracted the interest of thinker for years. The research on creativity was started from the psychological studies [8]. Since the 2000s, design scholars started to investigate how creativity influence the design process. Since the publication of Goleman's book, Emotional Intelligence & Working with Emotional Intelligence, investigated the relationships between social interactions and emotional intelligence, learning activities focused on emotional concerns have been introduced in a more systematic way. Emotional intelligence was a concept which was developed on the foundation of Darwin's theories. Darwin proposed his investigation on the emotional expression for proposes of survival, in other words, to the capability of monitoring and discriminating the emotions of others' [10, 11]. Emotion was regarded as one of the factors to influence the manipulation of learning methods, such as problem-solving. Goleman's concept of emotional intelligence got the educators attentions and has been widely adopted in different disciplines. This led to the introduction of some emotional concerned concepts, for examples, emotional literacy, self-motivation, and emotional creativity. They are popular topics in the current creative processes al practices in England [12]. Emotion was regarded as one of the aspects of creative processes with policy (by using the term 'emotional intelligence'). It also regarded as a key aspect in primary and secondary curricula in Great Britain now. Design methods (e.g., problem-solving and creativity) have been adopted in certain courses as a tool to help learners understanding the concept of emotion and recognizing the emotional changes of themselves in the learning experience. In previous studies, emotional literacy strengthened learners' creativity and their decision-making ability. According to [13], emotional literacy was a concept which based on a positive emotion. They aimed to promote positive feelings in the learning process. They proposed that positive emotions can help learners to make relatively more effective decisions and creativity. In the reformed curricula, their concerns on positive emotion had been adopted in the creative processes al field. It was aimed to strengthen the abilities in problem-solving and creativity of learners.

1. Although designers' professional experience is crucial, they consider that their creative skills can be nurtured in design schools.
2. Some scholar tried to train up the creativity of learners through project-oriented pedagogy, which was executed as specific courses offered to design learners.

A study explored how training influence the creativity of learners [14]. They observed both the evocation processes of learners and the corresponding creative output. In the first part of their study, they invited 32 design learners and divided them into two groups. They were assigned to perform design task under the same requirement.

4   The Importance of Recognition of Cultural Background on Creativity

Recognition of cultural background is the foundation of the self-understanding of individual. It leaded the expression and reaction of people. Culture involved knowledge, experience, living, religious, history and meanings. Ho explored the emotion in design from the designer's point of view and invested how emotion and recognition of cultural background related to the decision-making process in design process [15]. Ho proposed an in-depth model to elaborate the findings from the literature review and his empirical studies, to illustrate how designer's emotions influence their design process. Ho also found that stimuli in the daily life of design learners affect the emotional responses of designers and lead them to conduct the initial processing. The stimuli involved technological, social, cultural factors those compose the induvial experience of designers [15]. They elicited emotional changes of designers. The emotional changes lead the initial processing to conduct the thinking process in the working memory, which considers the internal factors in the design process included information processing, human resources and material allocation [15], etc. During the consideration of the internal factors, long-term memory included different categories like individual experience, value and missions, learned knowledge and skills are recalled. They were worked as references to the decision making. Hence, judgement and corresponding responses are generated. In the order words, stimuli in the daily life elicit emotions of designers which lead the designers to make various decisions which affected by the internal factors. As a result, the whole design process was changed.

5   Infusing Recognition of Cultural Background into Creative Processes

Enhancing the recognition of cultural background is one of the methods to enhance creativity [15]. It is one of the methods for inputting new ideas, challenging conventions and communicating effectively. There were some scholars in Europe suggested to enhance the thinking ability of learners through cultural activities. Hence, it is essential to consider the recognition of cultural background as important as the training of imagination, diversify thinking during the undergraduate creativity education.

6   Field Research on the Manipulation of Infusing Recognition of Cultural Background into Creative Processes

6.1   Research Aims

In order to understand how the recognition of cultural background contributed to enhancing creativity, a field experience on the manipulation of recognition of cultural background in the creativity process was conducted. Total twenty designer students (ten design students adopted the field research and ten design students finish the project without any guidelines about field research) were invited to attend a local Hong Kong

study Trip. The method of conducting field research was taught and practiced among the students during this study trip. Through the experience and sharing in the study trip, the different of culture and daily living among the undergraduate design students were understood. The students were undergraduate students in the level of year 3. They had some design experience and manipulated several design projects in the past two years. They had fundamental knowledge about design and opened for trying new design and research methods.

6.2 Research Process

The study trip was four weeks' projects. The research process included into seven main activities:

- Seminar: to understand the influence of historical and social changes on affective interface design.
- Workshop: to share the experience on creating new interface and introduce the basic concepts of how visual elements interact with human's senses.
- Visiting: to understand the influence of historical and social changes on citizen's living.
- Tutorial: to provide guideline on the field research on the investigation of the relationships between everyday life and affective interface design. It included the practical research methods under field research include observation and original sources collecting.
- Field research: to investigate users' needs, design concepts, outside the design lab.
- Design process: include two states, interaction and visual design, to design a set of new interface based on the inspiration obtained from the field experience.
- Usability evaluation: to obtain users' feedback on the prototype for improving the design.
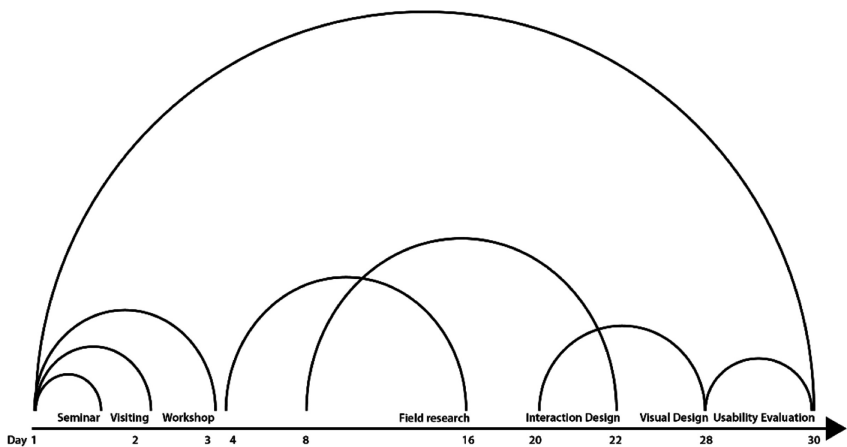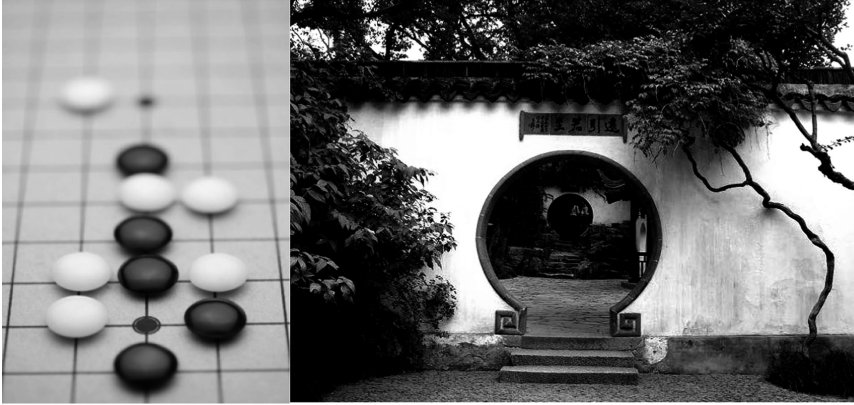

Fig. 1. Scheduled learning activities.

Fig. 2. This photograph of Chinese chess and gates in Chinese Garden, was captured on 13 July 2016 by student Helena Chan.

The activities were scheduled as the Fig. 1. On the first three days, students were invited to attend a general seminar, workshop and tutorial for creating affective interface design. Students were assigned to adopt field research for obtaining the cultural inspiration. From the second day to the fourteenth day, students conducted their research in various part of China. After obtaining the inspiration from the cultural elements, the participants developed them to a completed concept and they execute the design in following four weeks. On the thirtieth days, the students were gathered together and presented their findings those obtained from their research, concepts of their typeface design and the execution of the design outcomes.

6.3   Analysis Samples: Two Scenario Analysis Samples from Team a

One of the students, Helena Chan, visited Chinese traditional style garden. She photographed Chinese chess and gate (Fig. 2), which in local culture was believed to silent. Helena was inspired by the image; interfaces should be developed as a self-explanation system in terms of forms. She thus attempted to turn the symbol of silent found in Chinese traditional style garden with corresponding meaning. She applied this old-style decoration as the structure principle of her new interface design (Fig. 3). Thus, her field research observations provided her inspirations.

Similarly, another student, Anna Tan, was inspired by the old Chinese folk-style house (Fig. 4). Anna explored the spaces of old Chinese folk-style house and was interested in the usage of space and the living of local people (Fig. 5). These served as her primary design source, which she captured and analyzed.

6.4   Research Result

In this study, students provided their design process for field experience. It was obvious that field research would enhance investigation of creating Chinese typeface design in

Fig. 3. Interface design which based on the field research on 'silent'. This work was designed by students Helena Chan, 2016

Fig. 4. This photograph of an old Chinese folk-style house was captured on 14 June 2016 by student Anna Tan.

the daily living. The research processed and the found sources presented more in-depth perspective. Students could explore insights from the original sources. The research result with recognition of cultural background obtained from the field research provided strong foundation for the concept generations creatively. The students who adopted recognition of cultural background were easily investigating new concepts by themselves.

Fig. 5. Interface design based on the field research in old residential buildings in Yunnan. This work was designed by students Anna Tan, 2016

7   Conclusion

Creativity was concerned in the design studies for enhancing rapid knowledge driven society in the twenty-first century. It was believed that creative and innovation design contribute to economic and social changes as well as daily living. For equipping the competitive ability to designers, creative processes were regarded as the central in enhancing creative and innovative skills. Some scholars hence started to investigate more methods for increasing the designers' creativity including brainstorming, organizing on the thoughts and actions. It was found that different senses such as audio, visual, etc., all these types of connections influenced the level of creativity of the design. These experiences generally influenced much on the satisfaction of users on design. This could provide a new trend to the existing way of designing which emphasized on satisfying design functions and often ignored the resulted creativity. Researchers also revealed that at the heart of creativity, emotion and recognition of cultural background became a promising aspect and enhanced the influence of experience on the individual's memory. Studies in design and emotion and recognition of cultural background aimed to investigate how designed solutions could intentionally elicit emotion and recognition of cultural background of users. Design was shifted from its focus on generating outcomes with an attractive appeal to provide proper design solutions for satisfying users' needs in an innovative way; and further develop to the experience shaping. It was expected that designers are facing more difficulties than before. This study was the first step to learn about and introduce emotion and recognition of cultural background in enhancing creativity. Educators should have a strong awareness and in-depth understanding of the nature of creativity and the way of enhancing it. Judgment on the ideas' originality and the unexpected design experience are related to creativity. Therefore, the evaluation of creativity should be taken into

account learning and creative processes perspectives. This step had just been taken to address primarily understanding on how the emotion and recognition of cultural background to be the leading element of the training process of creativity.

References

1. Horvath, I.: Differences between 'research in design context' and 'design inclusive research' in the domain of industrial design engineering. J. Des. Res. **7**(1), 61–83 (2008)
2. Ruiz-Dominguez, G.A., Boujut, J.F.: A study of cognitive synchronisation in distant mediated design through design artefacts. J. Des. Res. **7**(2), 136–154 (2007)
3. Almendra, R.A., Christiaans, H.: Decision making in the conceptual design phases: a comparative study. J. Des. Res. **8**(1), 1–22 (2009)
4. Jared, G., Merlo, C., Legardeur, J., Pol, G.: CoCa: a tool for analysing collaborative practices to improve design process management. Int. J. Manuf. Technol. Manag. **22**(3), 247–258 (2011)
5. Taylor, C.W.: Various approaches to and definitions of creativity. In: Sternberg, R. (ed.) The Nature of Creativity: Contemporary Psychological Perspectives, pp. 99–121. Cambridge University Press, New York (1998)
6. Sternberg, R.J., Lubart, T.: The concept of creativity: prospects and paradigms. In: Sternberg, R.J. (ed.) Handbook of Creativity, pp. 3–15. Cambridge University Press, Cambridge (1999)
7. Villalba, E.: On Creativity: Towards an Understanding of Creativity and Innovation. CRELL (2008)
8. Ferrari, A., Cachia, R., Punie, Y.: Innovation and creativity in creative processes and training in the EU member states: fostering creative learning and supporting innovative teaching. Joint Research Centre. Institute for Prospective Technological Studies (2009)
9. Goleman, D.: Emotional Intelligence & Working with Emotional Intelligence. Bloomsbury, London (2004)
10. Bar-On, R., Maree, J.G., Elias, M.J.: Educating People to be Emotionally Intelligent. Praeger Publishers, Westport (2007)
11. Salovey, P., Mayer, J.D.: Emotional intelligence. Imagin. Cogn. Personal. **9**(3), 185–211 (1990)
12. Spendlove, D.: A conceptualisation of emotion within art and design creative processes: a creative, learning and product orientated triadic schema. Int. J. Art Des. Creative Process. **26**(2), 155–166 (2007)
13. Frederickson, B.L., Mancuso, R.A., Branigan, C., Tugade, M.M.: The undoing effect of positive emotion. Motiv. Emot. **24**(4), 237–244 (2000)
14. Bonnardel, N., Didier, J.: Enhancing creativity in the educational design context: an exploration of the effects of design project-oriented methods on students' evocation processes and creative output. J. Cogn. Educ. Psychol. **15**, 80 (2016). Springer Publishers
15. Ho, A.G.: The new relationship between emotion and the design process for designers. Arch. Des. Res. **27**(2), 47–57 (2014)