THE ALTERNATIVE OF PRODUCT CREATION: EXPLORING INNOVATION THROUGH CULTURAL ELEMENT

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\begin{abstract}
Culture always associate with human activity pattern which could give an identity. The culture will suffer loss and extinction due to less attention and modernisation. Designers have less awareness to use the cultural value in designing and face the hardship of translating a culture object into a product. Designing a product with a cultural element could highlight its sentimental and commercial value in the global market. Therefore, this paper aims at proposing a design process framework on how culture can be used to generate and interpret product designs. The framework explains how a culture object can inspire and utility into a product with the aid of improvised Norman’s Three levels of Design (NTLD). The methods involved in this study are Artefact Analysis and online survey. It is envisaged that the proposed framework model capable to provide valuable references for designing a culture-inspired product. On the other hand, the local identity could be brought up globally through culture-inspired products.
\end{abstract}

\begin{keywords}
Design Model
Culture Element
Design Process
\end{keywords}

\section{INTRODUCTION}

CULTURE is about the pattern of living of groups within a society which contains histories, beliefs, languages, arts, behaviours and so on (Itualua-Abumere, 2013). Culture could represent someone's identities or local identities and it is important to be preserved so that the future generations know the culture which has been passing down by their ancestors. Designing a product with local culture has become a critical problem in product design to highlight its cultural value (R. T. Lin, 2005; Wu, Hsu, & Lin, 2004). Designing a product with a culture element could create product local identities globally and raise the country’s economy. In the 70s and 80s, cultural-oriented products were highly preferred than the technology-oriented products and they are used to attract consumers in the fast-developing countries especially the European countries (Sparke, 2004, as cited in Wang, Qin, & David, 2013).

It is observed that designers are lacking the awareness to use culture value in designing. According to McBurnie and Clutterbuck (1987) stated that cultural neglect in product design is considered as one of the consequences of
globalisation. Many companies and designers in the present are more concerned about the technology, functions, and production hence culture elements and factors are slowly not be emphasised into the design. Designers are exhorted to foster and embed culture element and preference while designing by the International Council of Societies of Industrial Design (ICSID, 2002, as cited in Razzaghi & Ramire, 2005). Cultural based design or branding could catch one’s eyes and stand out from other competitors when expressing their identity (Holt, 2004, as cited in Wang et al., 2013). In other words, designers play an important role in designing a product with a culture element and believing that could enhance the product value in the global market.

2.0 Design Process and Culture

2.1 Culture-centered Design Process

Designing is about creation, innovation, and invention with planning, strategies and it may involve many experts. A design process is a systematic approach or a framework for designers and experts involve to follow when designing or developing better products. This is important as it helps to solve potential problems of the new products designed and helps to break down the complicated project into manageable sections. There are many stages in a design process which typically includes defining the problem, research, brainstorm and analyse, develop a solution, validate and improve. All these stages are used to ensure that all the products and creations created can be produced and sellable (Chicago Architecture Center, 2019). Authors believe that the proposed design process must apply with cultural value while designing a product in order to bring the sentimental value which shows the closest to human preferences and experiences like consciousness, perception and life’s lessons. It has been well supported by Hofstede (2001) that culture and cultural values involved significant roles over almost all aspects of human life (as cited in Razzaghi & Ramire, 2005).

Culture element could be one of the inspiration or subject matter during designing. According to Low (1998), “design is a culture-making process in which ideas, values, norms, and beliefs are spatially and symbolically expressed in the environment to create new cultural forms and meanings” (p.187). Cultural inspired product design is a process of embedding cultural features into a product which the culture value and aesthetic of the product could satisfy the end-user (Ho, Lin, & Liu, 1996, as cited in Hsu, Lin, & Lin, 2011). Hence, a culture-centred design process is significant for designers and researchers while designing where a culture object can be translated into product efficiently. Thus, authors adapted the Three Levels of Design (3LD) theory by Don Norman with proposing 3LD into culture-centred design process framework.

2.2 Three Levels of Design (3LD)

Authors believe that the 3LD is helpful in extracting denotative and connotative values from a cultural object and this will apply into culture-centred design process framework. The denotative values of the object are the literal meaning and the physical characteristic found where the connotative values of the object are anything or words that related to emotional meaning and cultural implications that developed from human pattern of living.

Figure. 1 shows the 3LD namely visceral design, behavioural design, and reflective design. Visceral
design focuses on the first impression and physical appearance of the cultural object which includes form, colour, texture, and details. The behavioural design focuses on the functions and its usability where the reflective design is about focusing on the rationalisation and intellectualisation of the cultural object. This theory is commonly applied in user experiences studies because the aspects or levels in the theory are highly interconnected and closely influenced to human’s emotional system. In our point of view, product designers and researchers can impose this theory when translating an object into a product.

There are few existing successful researches used the 3LD such as in the year 2007, Rung-Tai Lin has studied the Cultural Design Features and designed three products based on the culture levels and design features with Traditional Taiwanese “twin-cup” called Linnak. Based on the Figure 1 above, each design feature has its own classification, Lin used Linnak as a subject matter and designed products based on the design features derived from every classification or cultural level which are “Outer”, “Mid”, and “Inner” level (Lin, 2007). On the other hand, a group of researchers (Matsuhashi, Kuijer, & Jong, 2009) also referred to 3LD in designing sustainable practices. The researchers believed that a variety of insights could be widened by cultural diversity which could be used as an inspiration source for designing and they used these 3LD to collect information on sustainable everyday practices from different cultures.

2.3 Engagement of Culture, User, Problem and Designer in Cultural Product Designing

Consumers consider many factors when purchasing a product including functions, cultural meanings, aesthetics values and also emotional aspects (Wang et al., 2013). Figure 2 illustrates that cultural, user’s demand, designers’ perceptions and interpretational are the principles for cultural product development. Culture and user aspects are important factors to be considered by designers when designing a culture-product. Different places have different culture and people behaviour is shaped by the cultural values in a community. The cultural identity of the user could be highlighted when the cultural values are embedded into products (Moalosi, Popovic, Hickling-Hudson, 2008). Designers need to understand users’ experience and environment at the beginning to have the ability to transfer the cultural value context into an object. Users’ role will need to be considered into the design process and communication problems can be reduced when the research methods are combined with visual probes (Goncu Berk & DeLong, 2013). Designers will need to identify the problem existed and culture features to be embedded into the product designing in order to improve the product identity and fulfil the users’ experience.

![Figure 2. The Engagement of Culture, User, Problem and Designer in Cultural Product Designing](image)

3.0 Cultural Inspired Product (CIP) Design Processs Model

This paper proposed a CIP design model in Figure 3 for studying culture objects and shows how a culture object could be influenced and interpreted step by step into a product. The design model is proposed so that designers can use it as a reference while designing product with culture elements. Embedding cultural features into a product can highlight its sentimental and commercial value which at the same time can promote the uniqueness of the local culture globally. The design process model proposed is refined through
a few existing design process models and implemented with NTLD. There are three major phases composed in this model which are the “Research”, “Design” and “Testing”.

Phase 1 demonstrates the “Research” phase which comprise of “Identification” and “Analysation”. The selection of cultural objects will need to be identified first, then further researches will need to carry on in order to know better the chosen cultural object. The cultural object chosen can analyse based on NTLD, the keywords and related characteristics could be added into design brief or product design specification (PDS). Design brief and PDS are acted as a design parameter for designer during designing.

Meanwhile the phrase 2 is “Designing” phrase which includes “Translation” and “Implementation” that focus on cultural object features. The significant culture elements are shown in drawings and sketches via idea development process. Then mock-up and prototype are created in the next phrase to preview the adaption of culture element in product and acceptance of end user. Finally, the last phrase is “Testing” and validation in this design process model. Re-briefing or refining of the product will be carried out if the product does not comply to fulfil the requirement during the validation process.

4.0 Method

Figure. 4 illustrates the diagram of implementation of NTLD in Research Methodology. A set of online questionnaire is designed to identify the cultural object that suitable to be chosen as subject matter. The survey focuses on: a) Demographic Study, b) Consumer Understanding and Perception toward Culture, c) Identification of the Cultural Object, d) Product Design Features and Suggestions, and e) Product’s Specification and Characteristic Suggestion.

Artefact Analysis is useful to explore the material culture and subject matter in terms of physical appearance, symbolic meaning of the object, and inner feelings that can impact the consumer belief. The result of Artefact Analysis will be used for developing keywords and characteristics of the proposed product. These keywords also enable to generate PDS before the further design development taking place.

5.0 Keywords and Characteristic Extraction of Cultural Object Through NTLD

Commonly, the designers design a product based on PDS in order to fulfill the requirement of client or company’s needs. The implication of characteristic or image-words of the selected cultural object may help designers in styling and designing the product for the end users. For this research context, the connotative and denotative values of the cultural object are identified its semiotic and semantic meaning. It is a challenge for designers and researchers to synthesis the

The semiotic and semantic meaning of an object which may lead misinterpretation. By applying this theory, misinterpretation could be minimised and armour shield or as known as “Terabai” in Iban dialect is chosen as subject matter of this research. Terabai is a wooden shield that carved from hardwood with tribal pattern drawn or craved on it which uses as protection shield during the war, hunting and show victory and status of the owner during the past. Terabai is custom-made and its height is about two-third of its owner.

Table 1 shows keywords and characteristic extraction of cultural object for PDS, Terabai is analysed based with all the design features in 3LD theory accordingly from the physical outlook (Visceral Design) to social usage (Behavioural Design) and the inner feeling (Reflective Design). The attributes and descriptions of the Terabai are listed for further filtration and clusterisation which required skills. Then, attributes of the Terabai are clustered according to theme for keywords or design characteristics’ configuring. Each theme included descriptors which show common group of abstract meaning or duties and reflect to the theme.

The attributes are grouped into three main themes which are “Aesthetic”, “Material” and “Image”. The theme of “Aesthetic” included form and shape, colour, pattern and appearance of the chosen object. The second theme is “Material” and it comprises descriptors such as material utilisation, finishes, jointing system, and construction. The descriptors of “Image” theme consists of styling, trend and emotion. Once the theme identified, the keywords of design characteristic are extracted for further develop process. The keywords must be self-explanatory to the theme, for example appearance which means of the physical looking of the object and shows reflection of the theme “Aesthetic”. The keywords of design characteristic are brainstormed and derived from the listed characteristics. The keywords obtained are listed in PDS thus the culture inspired product design process is shortened.

6.0 Conclusion

Integration of culture into products can make out of possibilities and view as being advantageous and beneficial to promote and preserve culture, and it could also highlight its sentimental and commercial value in the global market. Culture inspired products can increase the local identity and stand out from other products. Designers must be able to translate culture object into a new product which fulfils the users’ experience. To designing a cultural product, designers can always look for the problem faces, identify the design feature level and design elements before translating a cultural object into a product.

Table 1. Keywords and Characteristic Extraction of Cultural Object for PDF
References


