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Integration of culture within Botswana product design

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Abstract

This paper investigates how culture can be integrated into designing products within Botswana's context. The concept of culture and design compliment each other and one is inconceivable without the other. Therefore, design does not take place in isolation but it is embedded in users' culture. Designers need to be mindful of the interdependence between culture and design because it might enable them to improve their concepts in responding appropriately to users' needs, wants and desires. However, it has been observed that there is little in-depth research on this topic.

In order to explore the relationship between culture and design, an experimental approach was adopted. The experiment was conducted with design students of the University of Botswana. This experiment involved analysing and identifying socio-cultural factors from Botswana's folktales and other sources that impact upon design. The challenge for participants was to transfer and apply the identified socio-cultural factors into product design features which have relevance to the local context. The socio-cultural factors were broadly divided into two broad groups that is, traditional and contemporary. The data comprised of visual and textual data. This data was then analysed using the qualitative content analysis methodology.

The paper concludes by discussing a proposed socio-cultural design model developed from the results which might assist designers to integrate culture by 'conscious design effort' rather than by 'accident or incidentally' in product design. This is ultimately expected to lead to more innovative, culturally sensitive and user-friendly products.

Keywords: Product design, Culture, Socio-cultural factors, Socio-cultural design model, Botswana

1.0 Introduction

Earlier links between culture and design became apparent in the domain of social anthropology where civilisation was evaluated through the evolution of objects and it was traced through the cultural characteristics left on those objects. Some researchers such as [1] argue that culture is linked with tradition as opposed to the notion of design which is associated with modernity and innovation. Reconciling the two concepts is a daunting task. However, culture generates diversity and it is naturally revealed in all human actions and artefacts they design. Moreover, one could argue that design shapes the culture and lifestyle of the modern society. Observing the design of artefacts produced and consumed in a society often reveals the cultural situation and the people's lives, education, needs, wishes, hopes and fears.

The relationship between design and culture has taken many twists and turns throughout the last century, as design is seen both as a mirror and an agent of change. It is observed that modifications in the former's evolution both reflect and determine developments in the latter. For example, one could argue that cultural beliefs and social practices create and reinforce patterns and ways of relating to a product or frames of meaning. This cultural framing affects people's relative working, the way in which they interpret the product defines the way in which they use or not use that product.

However, cultural rights have been the focal point throughout the century. Designers should focus on cultural rights [2]. The challenge for the future is to make culture the centrepiece of the world system, done in such a way that the world system is designed and developed in accordance with culture's highest, wisest and most enduring values rather than the basest and crudest practices [3]. In product design, this can be achieved by incorporating the historical and aesthetic values of users. This challenges designers to understand what cultural norms and procedures need to be integrated in product design, and how they can be embedded.

2.0 Design and Culture

It is observed that designers need to recognise that people are cultural beings and the process of integrating design and cultural factors in their practice should be emphasised. Design is firmly embedded in the user's culture: it does not take place in a cultural vacuum [4]. Users are not just physical and biological beings, but socio-cultural beings [5]; [1]. There is an argument that designers have not yet been able to easily encode cultural phenomena to the same extent as physical and cognitive phenomena. The influence of culture on technological innovation and deployment in a country like Botswana is profound and complex. Innovation and creativity must be assimilated within the context of Botswana's own culture because creativity does not happen inside designer's heads, but in the interaction between a user's thoughts and a socio-cultural context [6]; [7]. It is a systematic rather than an individual phenomenon. This notion might facilitate product acceptance and results in users' satisfaction. Satisfaction is derived from products that provide people with functionality, usability, interaction, experiences and pleasurability. Cultural factors in

design do not only strive to make technologies more appropriate for their social context, but also to make better use of culture itself as a resource for innovation. One could argue that consideration of cultural factors might pave the way to the diversification of design concepts and this facilitates product innovation. Such product innovation will have been assimilated within the user's socio-cultural context and this might lead to product acceptance and users satisfaction.

From the above facts, it can be deduced that designers who focus on the intelligence of their users rather than the intelligence of their technology will produce the innovations that really matter. Innovation starts with people, not with enabling technologies, and the designers' main role is to mediate between technology and culture and to add ethics and aesthetics to technology [8]. In this case, designers are agents of cultural change. Product innovation brings drastic changes of social values, shocks of reorganisation and restructuring, the introduction of new socio-economic restraining mechanisms and excessive shifts in social conditions [9].

The *National Policy on Science and Technology* [10] maintains that cultural issues should be integrated in the teaching of science and technology. Therefore, it is important for designers to know how they can undermine the indigenous cultural systems of the society [11]. It is through artefacts that cultural values are communicated. Design is therefore, an important medium of communication which expresses the values of the system within which it functions. Moreover, people are not only competent members within their own cultures but they are also interpreters of their own and other cultures. Therefore, designers interpret and transform their needs and wants into product features which will give products narratives as well as benefits. The following criteria could be applied to assist designers in this transformation [11]:

- (i) Interface and humans interaction to support the user culture;
- (ii) The artefact form or shape should correspond to the culture and life cycle which conforms to the appropriate aesthetics;
- (iii) The artefact form or shape should convey humour or joy of that particular cultural set up;
- (iv) Appropriate colours should be used to evoke desirable feelings within the same cultural context and;
- (v) Flexibility and adaptability of interaction related to culture.

In addition to these above points, indigenous knowledge is another important dimension which can be used in stimulating product innovation. The *National Policy on Culture* [6] infers that research should be conducted on how traditional technology can strengthen national cultural industries. The policy recognises that Botswana is endowed with talent in this area, but the level of development is still very low.

Culture is important to human-centred design as elaborated by [12]; [13]; [14]. Culture functions as lenses of perception. It provides a standard of value judgement based on experience and preference. This helps people to distinguish what is right or wrong, what is virtuous or evil, what is beautiful or ugly are all

greatly conditioned by culture. It influences people's outward expression and behaviour as well as the quality of our inward judgement. Therefore, it is a means of communication; it provides all sorts of nuances in communication and intimation.

Culturally sensitive products can be used to mark the boundaries between groups, to create and demarcate differences or communality between people [15]. However, Featherstone did not elaborate much on this point. It is apparent that artefacts in all cultures are symbolic; they are in effect symbolic in contemporary societies. Symbolism is consciously employed in the design and imagery attached to the products in the production process and symbolic associations are employed in using products to construct differentiated lifestyles models.

Designers need to embody culture in the products they design [16]; [17]. Therefore, the integration of culture plays a significant role in the effective design of products. Some authors such as [1] argue that designers should transmit products cultural values. Cultural values are indicators which the end-users use to serve as guides for what is appropriate behaviour; they tend to be relatively enduring and stable over time and widely accepted by members of a particular society.

Botswana traditions in product design, whether in leather, cloth, wood, ivory, gold or other materials, can be expected to flourish only if they incorporate users' culture. Botswana must control her industrial productivity, only then can one insist that industrial goods produced in Botswana reflect Botswana's taste and style [10]. This study argues for the importance of socio-cultural research in enabling product designers to better understand and design for their intended users. The primary objective is to develop an understanding of people's values and behaviours that can be translated into viable, information architecture and powerful design ideas. Therefore, the designer is in a unique position of being able to improve the quality of life in a number of ways, such as influencing the ergonomic, cultural and aesthetic quality of products. This might constitute design's positive contribution to Botswana's culture.

Most of the current research on the relationship between culture and human-centred design is European, American and Asian based and there is relatively little in-depth research on Africa let alone Botswana. Botswana should recognise the rapid international developments in science and technology that are re-shaping the societies of the world [18]. While much can be borrowed from other countries, Botswana will need to look within her own resources and culture to find the sources of innovation that will allow her to shape her own future. In this case, the country will need to harness all of her social and cultural diversity.

Design and culture are inextricably intertwined and should be seen as complementing each other. The meanings that products come to have should be constructed in the process of dialogue between culture, design and users. This might enable designers to design products that fit the cultural context of their users.

This integration enables designers to design products with relevant design features that give users narratives, stories, fantasies around them as well as benefits. This might result in culture being used as a new dimension of product competitiveness and as a means of satisfying users' needs. Culture might be used as a tool for reflecting users' identities and as a counter balancing force against the neo-liberal form of globalisation which seeks to universalise users' cultures. The next section explores how designers can integrate culture in designing products.

3.0 Method

A teaching experiment was conducted at the University of Botswana with thirty-five fourth year undergraduate design students. They were introduced to the concept of consciously integrating culture in designing products. Participants were presented with the socio-cultural factors (Table 1) extracted by content analysis from Botswana ancient folktales and other contemporary sources such as the *National Policy on Culture*. This was done to generate traditional socio-cultural factors from folktales and contemporary factors from current sources. The past informs the present and the future hence the importance of traditional socio-cultural factors [19]. Participants were presented with an open design brief which incorporated the factors in Table 1 and their challenge was to transform them into product features that will reflect and acknowledge Botswana's culture.

4.0 Results and Discussion

The traditional and contemporary socio-cultural factors were then divided into the categories of material factors, social practices, emotional factors and Technology/Design factors (Table 1). Since culture is dynamic, technology and design factors can be used in conjunction with material factors to improve social practices and in the process generate positive emotional reactions.

Table 1 Botswana socio-cultural factors

Material Factors	Social Practices	Emotional Factors	Technology/Design Factors
Arts and crafts	Assistance	Beauty	Computing
Baskets	Consultation	Excitement	Electronics
Minerals	Cooperation	Friendliness	Ergonomics
Owning cattle	Democracy	Fun	Hydraulics
Water	Development	Happiness	Mechanisms
	Exchange of gifts	Joy	Pneumatics
	Farming	Kindness	
	Music and dance	Love	
	Respect	Satisfaction	
	Self-reliance	Thanking	
	Sharing		
	Sitting around the fire		
	Sitting under a tree shade		
	Social gathering		
	Storytelling		

At the end of the experiment, participants were asked to write a report on which socio-cultural factors they have used and which product features represent them. Moreover, retrospective interviews were also conducted. The data generated by participants for analysis included textual data (retrospective interviews, design reports) and visual data (sketch books, design models and photographs).

The socio-cultural factors (Table 1) can further be re-categorised into a model developed by Jordan [20] of designing pleasurable products in human-centred design. A sample is illustrated in (Table 2). This approach has been adopted because it goes beyond products functionality and usability to having pleasure with products. Jordan [20] underscores that, whilst the benefits of design for usability are not in dispute, usability-based approaches tend to encourage those involved in product creation to take a rather limited view of people. Functionality and usability approaches are more concerned with physical and cognitive human factors whilst this approach goes beyond to include emotional, social and cultural human factors.

Table 2 Pleasure analysis after Jordan [20]

Physio-pleasure	Psycho-pleasure	Ideo-pleasure	Socio-pleasure
Arts and crafts	Consultation	Beauty	Excitement
Baskets	Entertainment	Consultation	Family
Beauty	Music and dance	Kindness	Friendliness
Excitement	Satisfaction	Respect	Joy
Minerals	Storytelling	Spirit of sharing	Owning Cattle

Physio-pleasure is concerned with pleasures derived from sensory organs such as touch, taste, smell as well as feelings of sensual pleasure. In products, it covers properties of tactile (touching during interaction) and olfactory (smell of new products). For example, a cultural factor such as excitement can be generated through tactile properties. Psycho-pleasure pertains to users cognitive and emotional reactions [20]. That is avoiding unpleasant emotional responses such as annoyance, frustration or stress when using products. Ideo-pleasure consists of users' values for example, tastes, moral values, aesthetic values and personal aspirations. These values are important in defining how users would like to be portrayed. Socio-pleasure is derived from the relationship with others for example, friends, colleagues and the society at large. This facilitates social acceptance within the society and enable users to be comfortable in these relationships. For example, friendliness facilitates socio-pleasure and the challenge for designers would be to design user-friendly products which generate such pleasure within the local cultural context. The above four-pleasure framework can be used as a means of structuring the pleasure issues associated with Botswana's culture. Perhaps, this might lead to culture being used as a pinnacle of good product innovation [21].

In light of the outcomes from this study, a Botswana's socio-cultural design model is proposed to assist designers to integrate socio-cultural factors in their practice. This model (Figure 1) has been developed from the analysis of the methodology which was used by participants during the experiment. For example, participants choose the socio-cultural factors which they then worked out how they can incorporate those into the intended product.

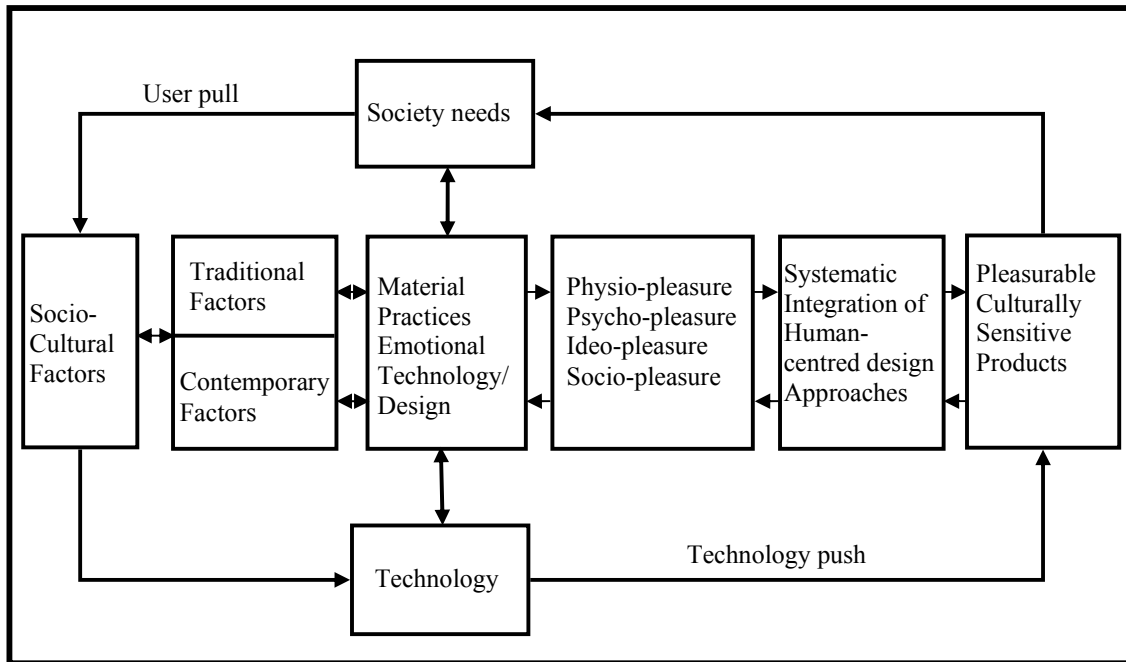


Figure 1 Socio-cultural design model

There is no explicit starting point in this model. Grounding product design in socio-cultural factors can start anywhere and it can arise from a wide variety of points. For example, culture can be integrated into product design by assessing the users' needs or advances in technology. Socio-cultural factors can be the first stage in an ongoing and difficult process of design but that at least provide some insights into user needs and perceptions as well as a method for ensuring the early, active, involvement of users in the whole design process. The socio-cultural factors are either traditional or contemporary. In both categories, the factors can either be material, social practices, states of mind or technological related. The model depicts the approach of bringing together traditional and contemporary areas of knowledge. The focus is on how the outputs can be practically linked, integrated successfully in a product development environment to stimulate creation of novel ideas. Identification of appropriate socio-cultural factors facilitates the next stage of pleasure analysis. The designer must know what kind of pleasure he/she wants to achieve with the product. If the product's outcome is to promote relationship among users, then more emphasis has to be paid to socio-pleasure. The former ensures that designers design truly human-centred pleasurable products.

The systematic integration of human-centred design approaches stage requires a highly focussed cultural and industrial design involvement and interaction to generate and improve ethnic motives in the designs that could lead to creation of new designs or enhancement of existing ones [14]. During the integration phase, the designer considers all systematic approaches in solving the problem at hand and this might include elements of product life from its conception and up to its disposal. Moreover, in this phase, designers have the latitude to use any design approach they are comfortable with and human factors

(cognitive, physical, emotional, social and cultural) should be taken into consideration. The integration stage also involve consideration of aesthetic issues, product function, sustainability, conformance to national or international standards, responding to user requirements, technical aspects and appropriate choice of materials. Apart from good design, materials often form the basis for product innovation. The choice of materials is dictated by the design and sometimes it is the other way round, where the new product is brought about by using a new or different material [22]. During the design phase, contemporary technology could be used in order to respond to users' current and future needs. The end result is to have pleasurable, culturally sensitive products which respond to users' needs in the most optimal way. Finally, the generation of novel ideas can be attributed to these three components; users' needs, users' culture and the technology available to designers [22]. However, this systematic socio-cultural design model does not guarantee innovative solutions that are pleasurable and cultural sensitive. Innovative solutions depend on creativity, intuition and empathy combined with the ability to visualise and specify ideas and concepts in some kind of material form. Creativity and ingenuity are essential requisites to a culture oriented product design.

5.0 Conclusion

The approach used for this study gave insights into how Batswana (people of Botswana) live their lives, their everyday circumstances, their routines, rhythms and their practical concerns. In this context socio-cultural factors were used as a way of uncovering or at least shedding light on users' social, emotional and aesthetic values and habits. These socio-cultural factors also provide an engaging and effective way to open up communication channels and foster an ongoing dialogue with users by involving them in the design process. Socio-cultural factors have enabled participants to overcome some of the distance that inevitably exists between designers and users and thereby, to gather a rich set of materials that grounds design in the lived realities and textures of everyday life.

Finally, the relationship between culture and design is manifest at three levels: in the structuring of the designers' activities, in the transposition (conscious or not) of socio-cultural values on products and in the perception of products by users. If designers are mindful of the interdependence between culture and design, this might enable them to improve their design concepts in responding to user's needs and wants. The proposed theoretical model even though it is at an infancy stage of development might ultimately assist designers in integrating culture within Botswana's context.

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