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Research paper



Redesigning the Borobudur chair to sustain local creative industries: introducing to wangun concept

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Abstract

Redesigning the already existed thing is a common practice in the world of design. This study objectively conducted to produce a fresh new look and commercially bargaining product of furniture in addition to pursue current aesthetic needs. This study focuses on reconstructing the Borobudur chair, a typical form of chair inspired from the 8th century Borobudur temple reliefs, which theoretically does not follow modern art. This proposes a traditional conceptual approach called wangun (beauty) inspired by the wisdom of local Javanese culture, which is termed as Ngowahi Rupa (the change of form). Ngowahi Rupa does not change the 'inner structure' of an object, the changes occur only at the 'outer structure' level. There were two distinctive chairs being redesigned in this study, the first type of chair can accommodate one person only, and the other accommodates three people. Both types of chairs constitute of a complete structure of chair such as the legs, seat stands, and backrests, which in the sense of wangun conceptually termed telu-teluning atunggal. The Ngowahi Rupa furniture making process not only demands visual aspects, but also the concept of the creative industry. The concept was applied in redesigning the Borobudur chair that synergically in accordance with the rapidly developed creative industries in Indonesia. The results of redesigning the old-type of chair objectively contribute to the advance of current furniture industry and trend, both in Indonesia and abroad, in addition to maintaining the excellence of the creative industry with regard to the economic concern.

Keywords: *Creative Industry; Wangun Concept; Borobudur Chair; Redesign.*

1. Introduction

Globalization is known for the rapid spread not only in terms of the information and technological advancement, it involves cross-cultural symptoms and diversity in various countries, where this has actually been going on for centuries. One of the effects of such phenomenon is on the transformation of traditional into modern society. Furniture is a kind of everyday artefacts produced during a change process. In such a cultural understanding, especially in the field of design, the link between aesthetic values to development policy, people's behavior and lifestyle are inseparable. Likewise, between one period and another has interconnected cultural links. This linkage has not been much glimpsed by design researchers, even as if it were separated from one element to another. Bearing in that conditions, such aesthetic value should be seen as part of a process of cultural transformation of a society as a whole. In this case the design can be mounted as a part of cultural objects that can express the meaning of the aesthetic values that accompany various forms of culture in every age [21]; Sachari 2006).

Apart from the changes, Borobudur chairs were many found in Karmawibhangga, which part of the Borobudur temple building located in Central Java, Indonesia. It was a historical site established in the 8th century. The existing reliefs surrounding the building philosophically evokes our interpretation on how the ancient people caught fish and sold them in the marketplaces, and the directions on how the rich keep an eye on the distribution of charity to the poor, on that reliefs too we can see people built buildings from woods, nobles and people saw acrobats, or a nobleman sitting on a chair [19]; [20].

Sitting on a chair in that unusual images found on some reliefs inside the Borobudur Temple. Most of the decorated images on the reliefs illustrate people sitting in cross legged and kneeling down with various modes of sittings. The portrayal of a sitting man on chair, mostly describes an individual who holds a highest status or a king sitting on a throne, and look very different from sitting in a chair, precisely on the Karmawibhangga O- 75 relief, with the interpretation of the scene; "Sitting on a chair, a noble speaks to those who listen solemnly" (personal observation, 2012, p. 67). The depiction of a person sitting on a chair in this relief is interesting to observe for the way people sitting in cross-legged did not touch down on the floor, but their legs nearly lifted and seated on a chair seat like a person sitting on the floor.

The study on redesigning the 8th century Borobudur chair in the light of the 21st century is an immense attempt of redefining the new culture for it can serve as a sign integrating both the past and present time. The idea of redesigning chair that once had been used for more than 1200 years ago for current purposes is an exciting endeavour of a design process. The redesigning process is undertaken purposively to re-connect the broken bond of cultural product in a long-time span. The cultural product heritage becomes valuable when it

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successfully fulfils the modern social and aesthetic needs. Previously in 2015, I have conducted a study on the reliefs of Borobudur chair and made a replica out of it. The Borobudur chair was reconstructed with a typical interpretation approach. In this sense, I would theoretically follow the anthropometrical, ergonomically, design, and historical interpretations to create a different chair making concept of Borobudur chair. Following the study, I draw sketch perspective, and then the mock-up or the chair replica [23]. In 2016, I have analyzed Borobudur chairs according to the replicas in developing designs or redesigning their shapes to be the most widely used chairs at homes according to age and current lifestyle, which showed a significant difference in terms of the social background needs. I hope that the aims in redesigning Borobudur chair can meet today's demands of the highly developed creative industry in Indonesia.



Fig. 1: The Redesign of Chaise Longue 'LC 4'Le Corbusier, Barcelona Chair Made by Ludwig Mies Van Rohe and Egg Chair by Arne Emil Jacobson (Source: Google Image Copyright).

There have been subsequently a number of studies on the case of furniture transformation across the times. Andrianou [2] studied archaeological evidence engraved on illustrated reliefs of chairs, beds and tables in the context of households and cemeteries from Greek relics dating from the 4th century to the 1st century BC. His research is oriented to discuss issues related to interior space organization. The correlation of ancient interior design and its reflection on household furniture in the modern era connects the sense of ownership and connectedness, and how the phases of progress take place. In his findings it was argued that interior design in houses or buildings of ancient times at least meet the same needs, serving practical and social functions, while also leaving room for aesthetic expression. Mols [13] studied forms and functions of the Herculaneum furniture, the techniques used by Roman cabinet makes and the last on the changing forms and uses of dining room furniture. Furthermore, there are a number of people who have done redesigning home furniture including chairs. Many of current industries have manufactured a lot of chairs as a result of redesigning from ancient models of furniture by changing its colours to attract consumers for commercial purposes. Some examples about famous designer's chair that have been redesigned, such as Le Corbusier's (1887-1965) Chaise Longue 'LC 4, a Swiss-born architect and designer known for its international style design. Barcelona Chair that has been redesigned, is the work of Ludwig Mies van der Rohe (1886-1969), an architect and designer of German furniture whom known as a pioneer of modern architecture. This chair was made by Arne Emil Jacobsen (1902-1971), an architect and furniture designer from Denmark.



Fig. 2: The Redesign of the Queen Anne Chair (1740) Into the Queen Anne Chair of Robert Venturi, Made by Robert Venturi and Denise Scott Brown (1980s).

There are plenty of ways in redesigning a chair, however, basically most local artists were just focused on making a slightly different on them, especially in terms of the color and some were on certain attract attention. Somehow, there is a different way and it has been done by an architect and also famous American designer, namely Robert Venturi (born in 1925) with his partner Denise Scott Brown (born in Zambia in 1931). In the 1980s they made a redesign of Queen Anne Chair (1740), a classic chair style. The result of the redesign was named Queen Anne Chair Robert Venturi. Robert Venturi uses the transformation concept form of "less is bore". This redesign generates a more modern chair and even belongs to the Post-Modern group with printed multiplex material, laminated plastic, and imitation leatherette holder covers [5].

What Robert Venturi has created was actually a result of his concern for Mies van der Rohe's modern concept called 'less is more', that he considered boring and changed the phrase into "less is bore". This concept was conceived to enable art connoisseurs and consumers of chair furniture products to be able to reminisce with the culture of the past and appreciate the heritage of noble values which are manifested in a more popular form carrying the concept of beauty and comfort. In this study, redesigning the Borobudur chair was done differently from Robert Venturi. The redesign of the Borobudur chair was first done by reconstructing the Borobudur chair based on relief on the Borobudur Temple, which produced a replica. The replica is then redesigned referring to the concept of wangun as well as consideration of the creative industry. This process is to fill the void that others have not yet done in redesigning the replica of the Borobudur chair into a newly designed chair [10].

With regard to the described problems above, a number of research questions such as what kind of redesigned Borobudur chairs can be developed for current interests? how to develop Borobudur chairs? How to make an artificial development of the Borobudur Chair?, how about the development of the Borobudur chair that can support creative industry excellence or have an impact on the economic improvement of chair craftsmen?.

This study produces in a newly introduced chair design inspired from the chair reliefs on Borobudur where the manufacturing process used a conceptual building approach as a manifestation of the creative industry. Other objectives are, e.g. How the image of a chair on the reliefs of the Borobudur Temple can be made in real form and develop designs through redesign. This is in accordance with the researchers' recent activities who concerns studying the Javanese aesthetic forms and finally proposed the concept so called wangun. This

article complements the previous study to apply the concept of wangun in various contexts of the research that the author has carried out, or more precisely to test the concept of wangun on various occasions including redesigning the Borobudur Chair. "The latest findings in this study lie in the form of new chair designs based on the development of inspired chair replicas on Borobudur reliefs.

1.1. Review of related literature

Western aesthetics claimed to be universal and, is called formal aesthetics. Western aesthetics constitute of the structured principles of forms. Some elements of forms including line, area, space, color, and texture, are adjusted to the principles of unity, contrast, rhythm, climax, balance, and proportion. Aesthetics are categorized into the 'aesthetic instrumental' which refers to something measurable [6]. Western aesthetic formula is taught in many of the art and design education higher institutions in Indonesia. In addition, Western aesthetics has always been a reference in analyzing the beauty of the local cultural products, which as far as I concern may still not be true, it is considered vital for the cultural background and different concept of creation [7];[10].

Analyzing Borobudur chair as a product of Javanese local culture using the traditional concept called wangun or the aesthetics of the Javanese noble values. In this concept, wangun as an aesthetic concept is based on the wisdom of Javanese thinking, especially those who implement kejawen values or are influenced by Javanese, Hindu, Buddhist, Islamic, and colonial indigenous cultures. The concept of wangun review of visual arts includes the form of wangun which consists of; 1) wangun and wangun standard structure elements which are generally acceptable among the Javanese people, 2) principles of placement arrangements or placement arrangements in the context of the image sector or general area in Java 3) members and authorities or regulations and restrictions that apply locally or in the Java region, 4) sacred, 5) meaning in the context of form wangun and broader meaning or meaning in various contexts. The concept outside the form and placement of wangun is called ora Wangun or aèng which means awkward [25]. As for the use of the term or strange concept terminology as a method to explore the development of the Borobudur chair design [28]. We also use Aèng as a concept to learn about building decorations in the Surakarta Palace [29].

The concept of wangun in the context of developing or creating a new model or redesign is by changing the shape of Borobudur chair which had previously been reconstructed. The redesign of the Borobudur chair conceptually applies ngowahi rupa or changing form, it does not work by changing the inner structure, which however, it changes only at the outer structure [25]. The terms inner structure and outer structure are inspired by Claude Lévi-Strauss, in the form of outer structures or surface structures and deep structures and transformation [8]; [1].

Ngowahi rupa is conceptually different from an idea of just changing an object form, commonly known as deformation applicable in the Western world. Deformation is a deliberate change of form for the sake of art, which often looks like strong though it seems no longer remain the original figure. This form change brings up another new figure / character which is different than before. As for how to change the form, among others; by simplification, distortion, destruction, stylization, or a combination of all the arrangement of the form (mix) [9]; [16].

2. Methods and data

The data used in redesigning the Borobudur chair through applying wangun conceptual approach was meant to sustain the local creative industry was actually our preliminary study conducted in 2015 entitled 'the reconstruction of the Borobudur chair (in an effort to support the creative local industry). Borobudur chair types among others;

1) Nobleman's chair for 1 person.
2) Nobleman's chair for 2 people without backrest.
3) Nobleman's chair (long) for 3 or 5 people with backrest.
4) Nobleman's chair (short) for 1 person
5) Priest's chair for 1 person without backrest.
6) Priest's chair for 2 people without backrest

Source: Widayat et al.,[23]

According to the types and function, Borobudur chair was distinguished into the noble's chair that accommodates only one person and the noble's (long shaped) accommodating three people with the backrest chosen to be redesigned. The first reason for redesigning these two types of chairs is since they have fittings such as chairs in general, which have chair legs, seat stands, and chair backs. The second reason is that if this chair is developed it has the comfort requirements to be occupied because it has a backrest. The third reason is that the Borobudur chair chosen can meet the needs of sitting activities for today's people.

The method used in redesigning the Borobudur chair technically refers to the research model [14], related to the location, forms, data sources, data collection techniques, data validation, and data analysis of the research. The data analysis used an interactive analysis model includes data reduction on Borobudur chair, presenting data related to redesigning the Borobudur chair (design stage), and drawing conclusions about the redesigned Borobudur chair. This activity is carried out interactively as well as the process of collecting data as a cycle process. The process of conducting the research moves between the components of the analysis, which were carried out during the process of data collection is still ongoing [12]; [17].

3. Results and discussion

3.1. Redesigning Borobudur chair through wangun conceptual approach

The processing activities of Borobudur chair replicas into chairs that have selling value and aesthetically begin with observing the Karmawibhangga relief at Borobudur Temple located in Central Java Province, Indonesia. I have found several forms of chairs, which then lead me to interpret one of the curves into a three-dimensional (3D) perspective sketch [3]. To interpret shape of the chair, typical clues are needed, including anthropometric interpretations or human size studies to create a more ergonomic furniture design. Using ergonomic interpretation which is human relationships with tools used such as chair for comfort, efficiency, ease of use and safety considerations [22]. Other interpretations are related to the use of chair material, chair construction techniques, the interpretation of the beauty value of the chair, and historical interpretation of past reconstruction especially those related to the chair, then the cultural interpretation in relation to the sitting habit. The interpretation of the chair's material needs to be done very carefully, whether the material of the chair is made of stone or wood [4]. The construction technique of wooden chairs on the reliefs of Borobudur Temple is hard to find, therefore

it is interpreted according to the chair construction model from the present age. The beauty associated with the Borobudur chair should be noted that it is used the concept of the beauty of the Hindu-Buddhist period, such as the concept of the division of nature, the nature of the lower, middle, and top. With regard to the history, there is a need for guidance in the form of objects (relics), all of which demand interpretation, while the interpretation of it is filtered through the mind of the reviewers while doing the study [11]. Related to the cultural interpretation, it is interesting to see the Borobudur chair as a cultural heritage in the historical context, which tends to see culture as hereditary heritage passed down from one generation to the next [18]. Based on this consideration, a replica of Borobudur chair was produced through the reconstruction process in our research back in 2015.

The process of redesigning the Borobudur chair uses the concept of wangun ngowahi rupa (the concept of beauty in changing form), starting from the replica or the reconstruction of the "Borobudur Chair", it is searched for its "inner structure" and found the concept of the wangun composition of the bottom, middle, and top or the form of telu-teluning atunggal, three forms in one unity. The concept of telu- teluning is already integrated into the mind of the Javanese people. Examples of this are contained in the concept of the cosmos, vertically the top realms for the gods, the middle realm for the home and the human, and the bottom realms for barzakh or hellfire (Frick 1997, p. 76). The next process is found at the outer structure in the form of bottom (chair legs), middle (chair seat holder), and upper (chair backrest). The form of "outer structure" is based on the concept of wangun that changed the form or redesign. Through this stage, a new Borobudur chair design is produced, which the initial stage is made in the form of a three-dimensional perspective sketch. According to the wangun concept it was exemplified the way ngowahi rupa works of ancestors, namely the transfiguration of temples in Java Indonesia of Central Java period to the East Java period. Ngowahi rupa by not changing the "inner structure" that is the telu- teluning atunggal form such as bottom, middle, and top, but can change its "outer structure", among which are the legs, body, and the head of temple [25].

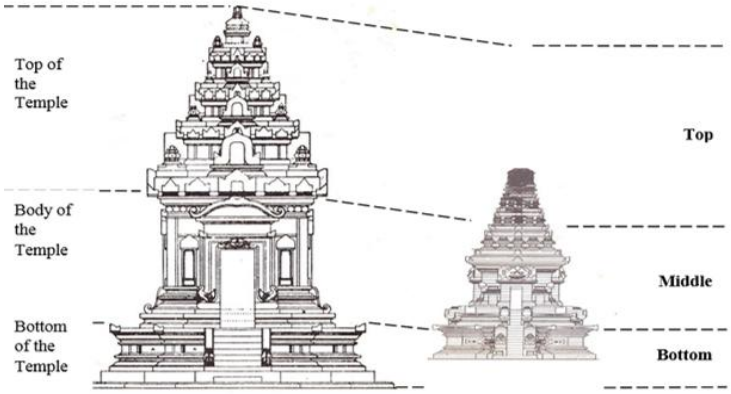


Fig. 3: The Outter Structure Including Bottom, Body and Top of the Temple.

Figure 3. Making a research on ngowahi rupa contemplating back from the Central Java period Temple to the East Java period, by not changing the 'inner structure' that is the telu-teluning atunggal form such as bottom, middle, and top, but can change its "outer structure", that is the legs, body, and the head of temple [28].

Stages of redesigning process or ngowahi rupa of Borobudur chair was begun by interpreting the reconstruction of Borobudur chair which produces a replica, followed by ngowahi rupa a replica of Borobudur chair precisely on the legs of the chair, seat, and backrest that is processed as follows; Research in 2015 starts from the relief of Borobudur chair→ interpretation → sketching → work image → Borobudur chair replica. The 2016 research begins with a replica of Borobudur chair→ redesign (ngowahi rupa) → sketches → work drawings → mock-up of Borobudur Chair New Model. Ngowahi rupa visual process can be seen in the following figure.

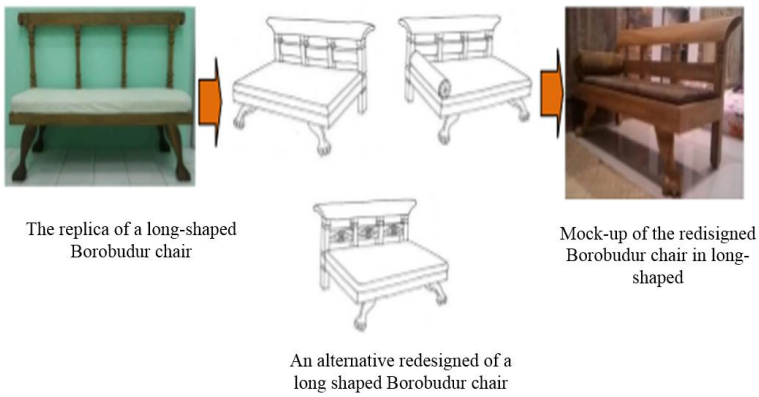


Fig. 4: Ngowahi Rupa Visual Process Implementation.

The figures displayed in above are accompanied by short notes that need to be known or to remind something about the size, material used and others. The scale for drawing furniture works in the form of tables, chairs using a 1: 5 scale [22] in redesigning Borobudur Chairs.



Fig. 5: The Developing Process of A Long-Shaped Borobudur Chair, A Redesign Form Under Ngowahi Rupa.

3.2. Redesigning Borobudur chair to sustain the local creative industry

Redesign of the Borobudur chair done with consideration that it can be produced for the prominence of today's society therefore it could economically support the creative industry. The point is the development of Borobudur chair to become a new design done to provide benefits for the present time. Reconstructed Borobudur chair can become a source of inspiration to be developed in order to support the present-day creative industry [26]. With regard to economic matters, the notion of economics itself is quite a lot, one of them namely: the science of the principles of production, distribution, and the use of goods and wealth such as finance, industry and trade. The development of the Borobudur chair in the economic context is how these chairs are produced, distributed, used, how they relate to finance, industry and commerce. Development process in the economic context is certainly not easy, because there are obstacles to be solved, some of them are as follows; 1) Art and cultural products obtain less attention from the government as if it allowed to walk alone without support. 2) Producing objects such as chairs in an economic context does not necessarily become the primary need of society.
The problems above are generally solved through various approaches. Concerning the economic problem of producing Borobudur chair can use the approach of the culture industry, creative industry or creative economy (the meaning is same). Creative industry consists of 16 fields, 7 fields related to the realm of art. It includes architecture; art and antique goods market, craft; design, fashion design; film; art); sound; the show [30]. The development of the Borobudur chair for the benefit of the present time in supporting the creative industry is related to design, or creativity in developing new designs or redesigning or ngowahi rupa. The success of the creative industry is needed some considerations of cultural policy, cultural strategy, and empowerment of the culture industry. The cultural industry considerations related to our research and based on expert opinion [15] explanation as follows;

3.3. Cultural strategy

Cultural strategy is carried out by increasing the study to sustain the development of creative industries. Research on creative industry products needs to be done continuously and developed into products that have a cultural message that affect the user. The Borobudur chair we studied is rich in cultural messages from the 8th century, where the Javanese sitting culture at that time was very varied and rich with the symbols of the social strata in accordance with the culture of that time.

3.4. Empowerment of creative industry

Serious cultural contents or those that lead to contemplation and study today seem defeated by the mild, glamorous, and sensational contents. This is because it is the market desire or according to the needs of the times. It is importance to studying a strong nation in dominating the market from the engineering side of rules and promotions on various occasions. The national creative industry needs to be defended to be resurrected, solid, and rich with creative potential. Because of lack of fund and global economic impact, the government needed some strategic steps related to the strengthening of the aspects of national identity; inter-sectoral coordination of culture, education, industry, and information; defense sector, protection; fund mobilization. When the study and development of the Borobudur chair from the design side that could support the creative industry has been done, it is required fund mobilization so that it can be useful for the people from the economic side. Associated with the fund, the role of government is really needed.
The explanation above is a summary from Sedyawati's perspective on the need for creative industry considerations in developing cultural products that we compiled with our study of redesigning "Borobudur Chair". The concept of creative industry is important considering Indonesia in general and Java is particularly rich in cultural products, such as "Borobudur Chair". The success of the creative industry aside from creative executant is also demanded the role of government or leaders from various levels, the product has a cultural message, and the availability of fund, along with a deep study related to the aesthetics of a wangun or beautiful cultural product. Based on the consideration, the redesign of Borobudur chair is expected to support the creative industry could be realized.

4. Conclusion

The reconstruction of the Borobudur chair into a replica of the Borobudur chair is the result of our research back then in 2015. In 2016 our study developed in relation to the design or redesign of two chairs to sit for one person and three persons complete with chair legs, seat holder and chair backrest. Redesign using the concept of wangun ngowahi rupa, resulting in the design of Borobudur chair that are varied, wangun and useful for the prominence of present time. Redesigning Borobudur chair is made a working drawing followed by mock-up scale 1:1. Redesign Borobudur chair is also developed with the consideration of creative industries based on an opinion of Edy Sedyawati, the results are expected to support the creative industries in the context of quality design and have economic value for the society supporters. The significant research findings are that what we do does not just stop until the design development stage, but we make the finished form, therefore, people can be enjoyed both physically and visually. Furthermore, forward handed (downstream of research products) redesign Borobudur chair is to the creative industry players, especially craftsmen, furniture industry entrepreneurs by way of mentoring. The purpose is to be able to be explored, marketed, and utilized economically. This step we take in order to inspire how the research about past design, design development for the present time, and downstream of this research product is done.

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