

APPLICATION OF COLORED GLASS TECHNIQUE FOR PRODUCT DEVELOPMENT OF THAI TRADITIONAL HOUSE DECORATIONS

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Abstract

The application of colored glass for producing Thai traditional house decorations is an innovation for decorating houses. The idea represents variations in society. This research is intended to analyze the forms and patterns of colored glass in different kinds of products. Additionally, the work shows different parts of Thai traditional culture while providing house decoration using colored glass. The attractive glass facilitates the teaching of Thai culture as people are naturally attracted to the beautiful decoration.

The collection consists of colored glass products for house decoration, architectures for colored glass decoration, experts in Thai traditional culture, stories of Thai traditional culture; and stained-glass artists. The focus groups include colored glass products for house decoration from Ban Tawai Handicraft Centre which consist of total 6 types: furniture, glass frames, paintings, portraits, painting of animals, and fortunate symbols. The architectures of colored glasses are at 3 places: Dhara Dhevi Hotel, Wat Ket Karam, Chiangmai Province, and Wat Chiang Thong, Luang Prabang. The concepts were developed by five experts in Thai traditional culture from Department of Cultural Promotion and Rajamangala University of Technology and produced by two colored glass artists from Ban Tawai Handicraft Village, Chiangmai Province. The works promote two stories of Thai traditional culture, consisting of the Songkran Festival-Thai New Year's Celebration and the Wai which is used by the Thai people to pay respect.

Research tools consist of an observation table of stained-glass products, analysis tables of house decorations, mural paintings of the Songkran Festival, and the 'wai', questionnaires for the experts in Thai traditional culture, draft drawings of products, a selection of Thai traditional culture and furniture styles, and evaluation of the satisfaction and sense of product styles.

The forms, patterns, and techniques of colored glasses usage for house decoration were found in some types of souvenirs and furniture, consisting of photo frames, murals, portraits, and animal and fortunate symbol platforms with the pattern of glass on the surface and groove of the product. Architectural decoration is symbolic, and the shapes of Puranaghata (a pot of prosperity) at Wat Chiang Thong, Luang Prabang, the patterns appear as the shapes of trees, animals, and the lifestyles of the local people. The contents of Thai traditions appropriate to create home decorative products and to create knowledge as well. They should be a matter of core traditions that helps people to remember easily to keep and maintain Thai culture. They should also be developed as product models with product design principles. Finally, they should create an interest in the patterns so that the important message can be communicated to the general public easily, with familiarity of the content, and with a colored mirror surface.

Keywords: Application; colored glass decoration technique;
product development; house decoration; Thai traditional patterns

Introduction

Colored glass decoration is a kind of technique that is used for decorating artworks or some other products. The main idea is to gather small pieces of colored glasses and then use them to creatively create gorgeous patterns. In the past, colored glass decoration was mostly found in special buildings like church windows. Later the technique had been applied for new uses, including the decoration of Gothic-church walls. The technique was intended to build positive emotions of faith and to disseminate and reinforce stories of importance from the Bible. (Soonpongsri, 2008). Images of Thai culture could be portrayed in the same way to reinforce the importance of these culturally important actions. Creating appealing decorative household items can also increase the commercial value. Thus, Thai traditional culture can be incorporated into the patterns and qualifications of sparkling colored glass, creating wonderful works of art that communicate cultural standards to the people. When a light shines on colored glass it symbolizes and reflects the emotions and stories of the people behind them, turning the artworks into products with important historical value as well as a new creatively innovative colored glass decoration. The special technique of Fang Mook is also included, in order to give colored glasses extra smoothness and improves aesthetic value.

According to the creative idea of telling religious stories from the Bible through colored glass decoration, the researcher noticed some teachings and behaviours in Thai society that could also be reflected and reinforced through this technique. These works highlight important aspects of Thai culture in an effort to help others better understand Thai society and traditions. Conveying the sense, creating and reinforcing memory, and teaching the correct application of the traditions are important goals of this work. Young people throughout Thailand should have an opportunity to learn the proper behaviour in Thai traditional culture in order to act properly in different parts of Thai society. By using these decorative pieces in the household families are surrounded with familiar reminders of Thai culture in the everyday lives of people. For example, a product communicating the importance and different forms of the ‘wai’ convey cultural messages that everyone can apply to their lives. A product stimulates communication about these traditions and practices. These factors

should be abundantly available and accessible in Thai culture. The use of such products being used for presenting Thai traditional culture is definitely important and must relate to the lifestyles of people from different societies and fashionable cultural currents. With the addition of these items into households everyone should gain more familiarity and cognition about these traditions. The end result is the promotion of proper behaviour in society and the promotion of peace to our society.

In conclusion this research employed the technique of colored glass decoration to convey images of important Thai traditional culture in an effort to improve the communication, dissemination, and maintenance of cultural issues. Ordinarily, when people feel interested in something, they will understand it better and be able to act properly. At the same time, burying glass in wood can create more valuable artworks with practical and esthetic usages. The creation of patterns from Thai traditional culture is about giving some kind of creative knowledge, making products meaningful, beautiful, and more outstanding. To be precise, this research was meant to apply Thai traditional intellect to creative contemporary products, in order to present good knowledge and proper behaviour among Thai people. The product looks to promote more peace to Thai society and the Thai people through the creation of mutual understanding. This goal will provide obvious benefits to ASEAN culture.

Objectives

1. To educate the forms and patterns of colored glass in different kinds of products.
2. To educate some parts of Thai traditional culture that suitable for house decoration.
3. To design and develop Thai traditional colored glass house decoration, with maintain valuable intellect.

Research Methodology

The first objectives is to educate the forms and patterns of colored glass decoration in various products and architectures, the researcher launched the operation in two towns. The first one is some house and architectures in Chiangmai (Ban Tawai Handicraft Village). The second town is some house and architectures in Luang Prabang (Wat Chiang Thong). The data about consisting of the forms, the patterns, and colored glass image organization. Were collected. The photography has also been included to make the analysis of the stated factors. The photography was provided After that, all collected data were analyzed to design Thai Traditional forms, the patterns, and the techniques.

- The populations are

1. Colored glass products for the study of the forms and patterns of colored glass decoration.
2. House decoration items for the application of form and pattern to the society of learning and intellect.
3. Colored glass architectures.

The sampling groups are furnitures, glass photo frames as souvenirs, portraits, animal drawings, and fortunate symbol platform from Ban Tawai Handicraft Village, Chiangmai Province. Total 3 architectures at Dhara Dhevi Hotel, Wat Ket Karam, also in Chiangmai, and Wat Chiang Thong, Luang Prabang, are also included.

The research tools are the records of pattern and form including colored glass image organization, the analytic schedules of patterns, forms, and various techniques of using colored glass for house decoration, and the analytic schedule of architectures and colored glass patterns.

- The creation of the research tools

The researcher determined all necessary points for the analysis and the sample. The purposes here are to clearly show the images of house decoration products, colored glass architectures, and the techniques of colored glass decoration. The tool examination was also operated by experts in art and culture.

- The research areas

1. Ban Tawai Handicraft Village, Dhara Dhevi, Wat Ket Karam, Chiangmai Province.

2. Wat Chiang Thong, Luang Prabang.

- The information organization and analysis

1. Gathering all document information, the forms of colored glass products, and stories of Thai traditional culture, before dividing them into categories and put them into analytic schedules.

2. Arranging all field information from notice forms and photographs.

3. Correcting all field information by the method of triangulation.

(Jantawanich, 2008), including timing inspection, personal inspection, and location inspection.

The presentation of analysis results

The researcher intended to present analysis results by using descriptive method, which already included the way of qualitative research. The idea is about bringing all academic information, object mixture, and schedules that showing comparison of Thai traditional colored glass products, for examples, comparing them to each other.

The second objective is to educate stories of Thai traditional culture that suitable for the creation of house decoration, and can make some creative knowledge. Moreover, many printing matters involved Thai traditional Culture were studied and organization of document about education of house decoration forms and colored glass product forms.

The professional of Thai traditional culture are university lecturers of Thai traditional culture, and colored glass artists.

The sampling group are divided into 3 categories including; 1) 5 professional lecturers from various University; 2) types of Thai traditional cultures; and 3) colored glass Artists

The research tools consist of analytic schedules, the selection forms of Thai traditional culture, satisfaction questionnaires for the creation of house Decoration patterns.

The third objectives is to develop house decoration products with the technique of Thai traditional colored glass with maintain the valuable intellect.

The research operation was divided into two different steps, consisting of product design and prototype creation.

The population are Songkran Festival image and Thai salute image, experts in Thai traditional culture.

The example groups are 3 murals of Songkran Festival, 3 murals of Thai salute, 15 drawings of main tables for living rooms. Lastly, there are 3 experts in Thai traditional culture from Department of Cultural Promotion and other three university lecturers, consisting of Dr.Pornnipa Buapim, an expert in Thai manner from Department of Cultural Promotion, Mr.Sawad Piamsom, the director of Department of Religion Art and Culture Promotion, Culture Office of Nakhon Sawan Province, Mrs.Chuleeporn Sarakij, the director of Department of Religion Art and Culture Promotion, Culture Office of Uhai Thani Province, Associate Professoir Suwat Sankattiyarat, a representative of Thai traditional art creators from Rajamangala University of Technology, Assistant Professor Bandit Inkong, a representative of Buddhism art creators from Rajamangala University of Technology.

The research tools are murals, the selection form of Thai traditional culture image, analytic schedules, realistic drawings and the satisfaction-evaluation forms of Thai traditional culture, the selection forms of furniture styles, the satisfaction-evaluation forms of product styles.

The creation of the research tools

The points for analysis, the created analytic schedules of various Thai traditional culture stories were created, for instances, the knowledge of Songkran Festival, how to dress properly etc. Moreover, furniture designs and professional examination, launched by experts in Thai traditional culture and the groups of university lecturers, were also included.

The research areas are Ban Tawai Handicraft Village, Chiangmai Province, and Wat Chiang Thong, Luang Prabang.

The information organization and analysis

1. Gathering all documents about the development of colored glass house decoration in Thai traditional style, which is able to maintain the valuable

intellect. Dividing all information into categories and put them into analytic schedules of murals, which present the beauty of forms, image organization, and perfect examples of proper behaviour. Field information is also included and presents household furniture designs in Thai traditional style.

2. Using all information to create satisfaction-evaluation questionnaires of colored glass house decoration in Thai traditional style.

3. Checking and correcting the analysis results the method of Triangulation (Jantawanich, 2008) which consists of information providers, locations, and different periods of time.

The result presentation the deceptive method that exhibit mural design, image selection on furniture designs

Research Procedures

1. Educating the forms and patterns of colored glass decoration in products and architectures.

1.1 Reviewing all documents about the related theories, ideas, and research results of house decoration and colored glass decoration development. The resources of these details were libraries in universities.

1.2 Exploring all forms of house decoration and patterns of colored glass decoration from books, other printing matters, and some online websites, in order to gain enough information of colored glass house decoration.

1.3 Dividing all house decoration items into categories, in order to conclude the forms, the patterns, colored glass decoration, from household furnitures, photo frames along with glass frames as household decoration and souvenirs, murals, portraits, animal drawings, and, lastly, symbolic platform.

1.4 Gathering all field information for the comparative analysis of different colored glass decoration styles, which can be found in products and architectures. The procedures consist of interviewing colored glass decoration artists from Baan Tawai Handicraft Village, Chiangmai Province, the notice forms of colored glass decoration, and other basic elements that relate to both information resources: Chiangmai Province and Wat Chiang Thong in Luang Prabang.

1.5 Making notes about the details of house decoration and the patterns of colored glass decoration. To be precise, these notes are notice notes.

1.6 Analysing the forms, the pattern of house decoration, the pattern, and colored glass decoration found at each place by using analytic schedules of product styles and colored glass decoration technique, along with drawings and photographs.

2. Educating the suitable stories of Thai traditional culture for house decoration creation and make creative knowledge happen.

2.1 Educationing, researching various kinds of information from online medias and some printing matters in university libraries.

2.2 Creating mind mappings to state the education from of Thai traditional culture stories. This caused more benefits to each step of the research procedures.

2.3 Creating analytic schedules of Thai traditional culture by looking for some popular ones in an annual period of Thailand and from the ideas of proper behaviour in the society. With these, the researcher were able to calculate the value of popularity from the check list and choose the most suitable stories of Thai traditional culture to create marvellous patterns of house decoration.

2.4 Creating questionnaires for the satisfaction analysis of Thai traditional culture stories: Thai salute and Songkran Festival.

3. Developing colored glass house decoration in Thai traditional style and maintain the valuable intellect.

There are two separated steps of these.

3.1 Designing house decoration products in Thai traditional style.

3.1.1 Designing of Thai traditional culture drawing.

3.1.1.1 Creating selection forms of drawings and product styles, using 30 customers who had bought wooden products as house decoration at Baan Tawai Handicraft Village, Chiangmai Province; then selecting the images and forms of products.

3.3.1.2 Designing 3 drawings of Songkran Festival, 3 drawings of Thai salute, then creating satisfaction-evaluation questionnaires and selecting only one drawing from each kinds of them.

3.1.1.3 Creating realistic and colorful drawings, then creating satisfaction-evaluation questionnaires of the cognition of decorating drawings.

3.1.2. Designing product styles.

3.1.2.1 Determining the ideas of furniture designs in Thai traditional style. which should be maintain the valuable intellect of the mixture of nowadays-fashion and Thai traditional idea.

3.1.2.2 Creating 15 drawings of product styles.

3.1.2.3 Gathering the 15 drawings and selecting only the best one by using selection forms.

3.1.2.4 Creating realistic drawings of products and then Stating all steps of production, presenting good images from different views. Size and material determination are also included.

3.2 Creation of prototype

3.2.1 Having with groups meaning of product designers, experts in Thai traditional culture, and entrepreneurs, in order to gain the same understanding of the development of product design and prototype creation.

3.2.2 Preparing equipments for colored glass decoration.

3.2.3 Selecting the stories of Thai traditional culture for the creation of house decoration.

3.2.4 Creating the prototypes of house decoration.

3.2.5 Evaluating the satisfaction of house decoration.

3.2.7 Having organizing a practical meeting and workshop, to the community at Baan Tawai Handicraft Village, Chiangmai Province. The target groups are colored glass artists, colored glass entrepreneurs, general consumers, and product designers. The purposes were to educate colored glass decoration technique and using colored glasses to decorate some products from Baan Tawai Handicraft Village, Chiangmai Province. With all these, these practice, the obtained products may be able to gain higher commercial value and other communities may have opportunities for receiving creative knowledge.

Research Results

According to the research procedures, there are two kinds of colored glass decoration: product decoration and architecture decoration.

1. The different forms and patterns of products decorated with colored glass decoration.

1.1 The forms, patterns, and technique of colored glass decoration in house decoration, had been found in many household furnitures and souvenirs from Baan Tawai Handicraft Village, Chiangmai Province. These things consist of photo frames as souvenirs, glass frames, murals, portraits, animal drawings, and fortunate symbol platforms. The Thai patterns of colored glass decoration in most products consist of: techniques; Lai Ya, Rong Lai Tem Puen Riab, Fang Mook and Waew Lai Ya, or a kind of wood carving, is determined patterns, cutting colored glasses into small pieces and put them into the gaps among all patterns (Chong Fai). Also, the style may include gilding and colored glass painting sometimes, in order to emphasize the gaps among patterns and the accordance of the art work. Rong Lai is using colorful glasses to decorate gaps or holes that have convex edges. to provide balance the glasses and edges of works, for instances, gables, arches, windows etc. Moreover, the technique is able to make all works stronger. Tem Puen Riab, or Krajok Puen Lai is all about glass works, for instances, Cho Fah, Bai Raka, Hang Hong etc. Fang Mook, also known as Kaem Bua; is the mixture of colored glass decoration and pearl decoration. (The Fine Arts Department, 2016) Waew is about using glasses to decorate pollens, Sai Lai Salak, or any pattern of mold lime ; for instances, Hua Khon, Lai Krajang etc. has given a huge inspiration to the creation of house decoration in Thai traditional style.

1.2 The forms, patterns, and technique of colored glass for architecture walls. That found in two towns: Chiangmai Province and Luang Prabang.

1.2.1 In Chiangmai Province, colored glass decoration only Wat Ket Karam and Dhara Dhevi Hotel. For the details of Wat Ket Karam, colored glass decoration was applied to the exterior walls of the Chapel, presenting symbolic murals of Puranakatas, which can be found in Lanna art style. The murals has been scattered around the building area, which is curved like the arch. The area around Puranakatas consists of the images of stars,

which had been designed to reduce the size of wall gaps, and the presentation of fortunate flower images, according to the falling-flower scene in History of Buddhism, when Lord Buddha became enlightened. However, the colored glass technique at Wat Ket Karam appears as the smooth texture of wall. The sticky mixture of lime and Tang Eiw Oil has been included also in order to connect the glasses and lime to each other, the colored glasses had been divided into square shapes before putting in rows. According to the image of Bodhi leaf. There are different colors on the trunks.

For the colored glass decoration at Dhara Dhevi Hotel, Chiangmai Province, it was found on the front walls of the Thai wooden house, where near the entrance of the hotel. The glasses appear as gorgeous images of Bodhi trees spreading their branches, along with birds, chicken, tigers, and lovely peacocks. These show a perfect atmosphere of nature. Also, there are many styles of colored glass organization, square, rectangle, long rectangle, that the glasses stay perfectly in place with the shapes of birds. For the work of multi-colored glass decoration, it looks most stunning when a light shine on the materials because there will be many colors appear, almost as same as a motion of something. Therefore, any person who see this work will be more interested, impressed, and like the work better. (Kupthanaporn, 2015) As the results, the researcher applied all these factors to the creation of multi-colored products in order to build up the impression of products.

1.2.2 In Luang Prabang, colored glass decoration was found at Wat Chiang Tong. The chapel is full of various forms and patterns of this marvellous decoration. The found techniques are: Tem Puen Riab, which presents the images of trees on the front side, along with lovely images of animals. Besides, the Tower of Lord Buddha's statue is also full of the realistic drawings of Thai villagers' lifestyles. The style of glass decoration appears as various shapes of squares in different colors, looking extremely fabulous, according to the shape of a tree. This style was applied into the images of buildings and residences, which were created by cutting glasses into square shapes and arranging them in different styles, for beauty and the perfect conflict of shapes. For the portraits, they were created by cutting glasses into pieces and putting these pieces in the perfect spots, making them match the form of the portrait. For the animal drawings, they were created by the same method as the

portraits, which here means cutting glasses, using pieces of glasses to create perfect forms and appearances. Definitely, these forms and appearances were created by considering real lives of animals, in order to exhibit the works realistic. For the landscape drawings, these works were based on people's lifestyles, beautiful days of villagers presenting many beautiful stories and images, such as, fishing for career, farmers' lives, or Nuad Khao (thresh) Tradition etc. These have been being respectable culture for a very long time. All basic elements are arranged perfectly. About colored glass decoration, there are both square-shaped style, First, the pieces of glasses are put on every parts of a smooth texture. The second is custom style which glasses are made into different shapes of different things and usually decorated with beautiful colors.

The styles of colored glass decoration found in both places consists of: colored glass decoration on smooth texture (usually found in huge products with flat and smooth textures) Rong Lai Using colorful glasses to decorate gaps or holes that have convex edges, in order to provide balance to glasses and edges of every works), Lai Ya (carving wood, creating deepness, then putting pieces of glasses into every gaps among patterns.), Fang Mook (creating gaps on patterns before putting pieces of glasses into these gaps) and, Waew (using glasses to decorate pollens or Sai Lai)

2. The suitable stories of Thai traditional culture for the creation of house decoration products,

The researcher summarized the suitable stories by considering important and popular traditions of central Thailand, in an annual period, definitely. These traditions are held in each of 12 months: New Year Festival, Magha Puja, Songkran Festival, Vesak (to walk around a respectable place while holding candles, joss sticks, and flowers in hands as a sacrifice), Salak Phat, Vassa, Seasonal Festival, Wan Ok Pansa, and Loi Kratong Festival. It was found that there are always merit-making activities, including bestowing foods upon monks, in every traditions. Some of traditions even consist of asking for wishes from elderly people. There is no wonder why there are many parts of Thai salute in every activities. To be precise, everything here is Thai traditional manners, which should be spreaded widely. However, the 9 types of popular traditions, had classified by using check lists, stating the levels of popularity, likeness, and

suitability, to select the best ones for the creation of house decoration. Finally, Songkran Festival was the most popular story. Therefore, Thai salute was selected as good behaviour in Thai society and Songkran Festival was also chose as a suitable festival for the creation of house decoration pattern from Satisfaction-evaluation questionnaire, the Songkran Festival had gained the value of 99.50% and Thai salute had gained 96.50%. Therefore these two stories are the best traditions to apply for our creation of house decoration patterns.

3. The development of colored glass products in Thai traditional style for intellect preservation.

There are two different steps, consisting of product design and prototype creation. For the step for product design, satisfaction - evaluation questionnaires, along with the images of Thai traditional culture and house decoration, were launched to customers at Baan Tawai Handicraft Village, Chiangmai Province.

The first step: Designing house decoration products by following the stories of Thai traditional culture.

1.1 Designing murals for the creation of house decoration in Thai traditional style based on two different traditions: Songkran Festival and Thai salute. There are 3 drawings of Songkran Festival (Figure 1-A, B, C) and 3 drawings of how to do the perfect Thai salute. (Figure 2-E, F, G)

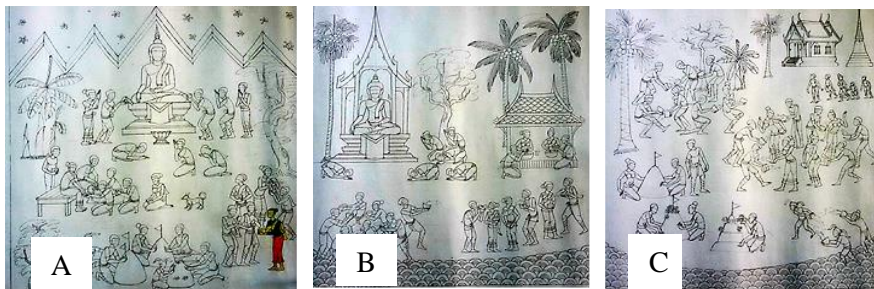


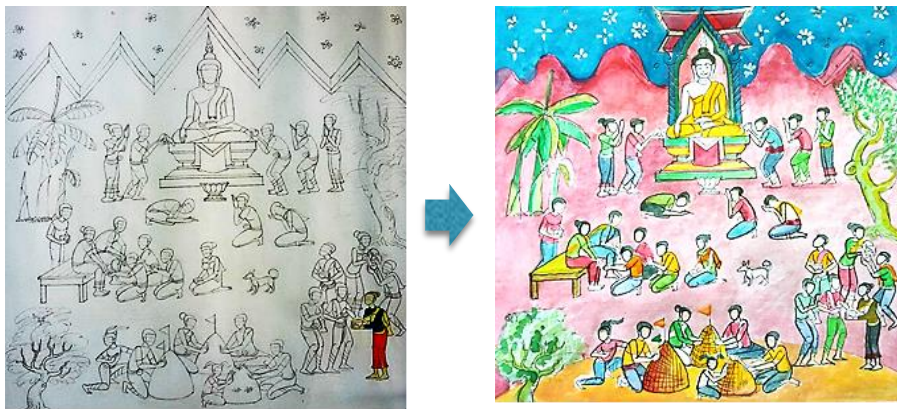
Figure 1: A, B, C The several drawings of Songkran Festival mural.

our in satisfaction-evaluation questionnaires for reducing to only one selected drawing.



Figure 2: E, F, G The several drawing of Thai salute mural.

Lastly, after the evaluation of satisfaction had been done and the drawings had been considered, the best one from each kind were selected. The murals of Songkran Festival (Figure3) and Thai salute (Figure 4) were classified as the most perfect ones because of beauty (according to the theory of image organization), behaviour, and the cognition of Thai traditional culture. Therefore the researcher applied these two drawings to the creation of house decoration, in order to keep revealing creative knowledge.



The selected drawing of
Songkran Festival mural.

The colored drawings of
Songkran Festival

Figure 3: The selected drawing of Songkran Festival mural.

The reasons here were the beautiful forms of image organization and a perfect example knowledge for good application.



The selected drawing of
Thai salute mural.

The colored drawings of
Thai salute mural.

Figure 4: The selected drawing of Thai salute mural.

The reasons here were the beautiful forms of image organization and a perfect example knowledge for good application.

1.2. The procedures of house decoration design.

1.2.1 Determining the ideas in order to design furnitures in Thai traditional style by using the shape of Kranok from Thai traditional art, triangle, square, circle etc. With these point, the beauty of Thai tradi The selected drawing of. apes should b The colored drawings of organi Thai salute mural ording to the the Thai salute mural for beauty, is also included here. Therefore, the shape of Kranok perfectly present the main heart of Thai traditional style, as it may sounds familiar to many people. Moreover, Kranok can also be combined with other shapes fashionably, creating even more benefits of products.

1.2.2 Creating 15 drawings of furnitures and selecting the best one all to only one.

1.2.3 Creating the realistic drawings of products for more realistic sight images.

1.2.4 Stating the procedures of production, which shows all details from different views of images. Real size and material determination were also included.

In the way of furniture design, the researcher already considered Thai traditional forms. Therefore, all furniture forms perfectly present Thai

traditional style, which can be found in patterns and wooden materials. Moreover, the areas for glass decoration, Were also considered to maintain the beauty of Thai traditional intellect. However, glass decoration is based on the consideration of areas. Therefore, the top view of furniture were presented because it can be seen easily, especially when furnitures are in use Moreover the materials for create fragile texture were determined for the glass decoration, it was operated by burying pieces of glasses under the texture of wood, as same as the technique of pearl decoration, in order to make the texture of glasses as smooth as the texture of woods, and good for usage. Not only the usage, but the higher value of refined work is also included. Fifteen drawings of furniture designs were created, and, the selected one would be put into the procedures of colored glass decoration.

3rd best design



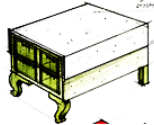
1.

2nd best design



2.

3rd style



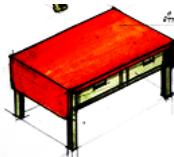
3.

4th style



4.

5th style



5.

6th style



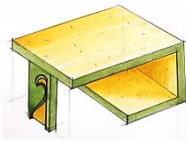
6.

7th style
(The selected one is 4th one.)



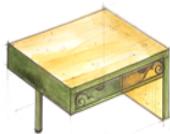
7.

8th style



8.

9th style



9.

10th style



10.

11th style
(The selected one is 5th one.)



11.

12th style



12.

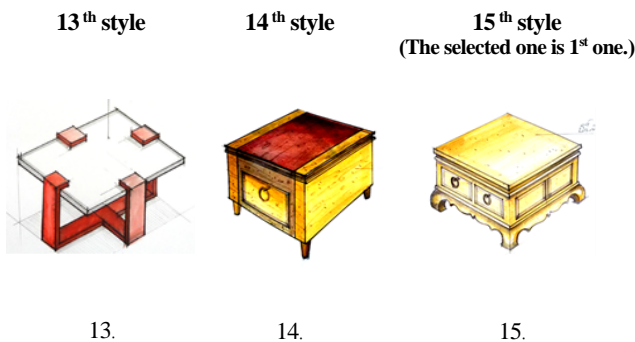


Figure 5: The 15 drawings of furnitures design

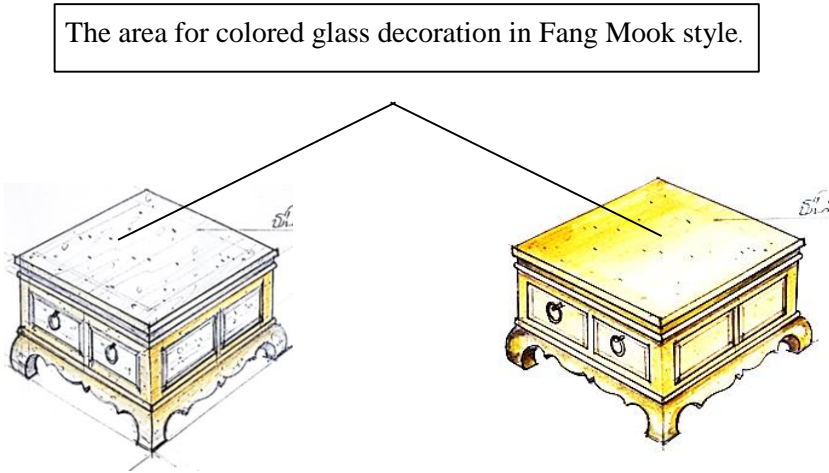


Figure 6: The selected furniture.
The square wooden furniture
with Khakoo style and 2
complete drawers from
Figure 5

Figure 7: The realistic colored
images Wooden
furniture with
Khakoostyle from
Figure 6 for create the
product prototype

The second step: creating the prototypes of house decoration products from Thai traditional style.

From meetings and conversations with the sample groups, of product designers, it concluded that the idea of creative learning from usable and beautiful products, were based on the development of valuable traditional intellect until an innovation of form happened properly and worthily. Therefore, the researcher applied the technique Fang Mook to colored glass decoration, in order to create smooth textures for both woods and glasses, make products easy to use, and increase the value of products. After finishing the works, satisfaction-evaluation questionnaires of house decoration products in Thai traditional style were launched to consumers. Many theories, for instances, colored glass decoration, designing materials, the theory of aesthetics, were applied to the analysis, in order to create more qualified prototypes. However, there are many basic elements to create the prototypes of house decoration products, Following

2.1 Creating the prototypes of house decoration products (murals) in Thai traditional style. (Figure 8)



Prototype of Songkran Festival mural.



Prototype of Thai salute mural.

Figure 8: the prototypes of house decoration products murals

2.1.1 Preparing photo frames for glass decoration (waterproof plywoods with 10-milimetred thickness) (Figure 9)

2.1.2 Creating drawings with carbon papers, putting them under the images for more accurate procedure. (Figure 10)

2.1.3 Cutting glasses into small pieces, getting them all ready for time saving (Figure 11)

2.1.4 Using Latex glue to get colored glasses attached to the textures of murals, instead of using lime, epoxy glue, or Tang Eiw oil, which are too complicated to use. Besides, murals are suitable for indoor use and rarely relocate. Therefore they can be used with sticky Latex glue instead. This technique was based on the intellect of wooden furniture artists. These artists usually use Latex glue for wood compressing. Sometimes they even compress the glue into wooden spurs to make them tighter, stronger, and be able to decrease working time. (Figure 12)



Figure 9: waterproof plywoods with 10-milimetred thickness



Figure 10:
Drawings
with carbon papers



Figure 11:
Cutting glasses
into small pieces



Figure 12: Using
Latex glue to get
colored glasses
attached to the wood

2.2 The creation of furniture prototypes. (Figure 13-14)

2.2.1 Preparing equipments for furniture glass decoration, consisting of a 500-watt electronic carver, in order to control the carving easily, nails, carving sets, cutter, or chisels.

2.2.2 Scraping woods and creating patterns following the drawings, in order to use cutter to carve and separate the texture of wood from each other. (Figure 15)

2.2.3 Eroding all gaps and distilling the texture of wood, following the forms of images, until the procedure is complete and the deepness is almost as same as the thickness of glasses. (Figure 16)

2.2.4 Burying glasses under the texture of wood, following the method of Fang Mook, in order to make the products stronger, because, however, the products will be used frequently. (Figure 17)

2.2.5 Evaluating the satisfaction of furniture and mural prototypes, which reflect the stories of Songkran Festival and Thai salute.



Figure 13: Creation of furniture prototypes (Songkran Festival)



Figure 14: Creation of furniture prototypes (Thai salute)



Figure 15: Scraping woods and creating patterns following the drawings



Figure 16: Eroding all gaps and distilling the texture of wood following the forms of images



Figure 17: Burying glasses under the texture of wood, following the method of Fang Mook

The results of the evaluation of decorative products both decorative wall and furniture all in excellent level. Therefore the prototypes are suitable for product creation, following the way of colored glass technique application for Thai traditional house decoration. With these, creative knowledge should happen. For Songkran Festival, it reflects the understanding and knowledge of itself, proper behaviour, how to dress properly when doing the activity at each place etc. For Thai salute, this is also a good example of Thai society. Many drawings of Thai salute, decorated with colored glass technique, gain a lot of attention easily and they have become more memorable. Therefore, the

presentation of suitable Thai traditional culture stories, for creative knowledge and house decoration design, is always based on the development of house decoration in Thai traditional colored glass technique, It is a brilliant commercial intellect and has many different patterns. All new products should have a part of maintaining this valuable thing forever.

Discussion and Conclusion

1. From the analysis of the forms, and the patterns of colored glass decoration, the researcher discovered that the forms and patterns appeared in household furnitures and souvenirs, these things had been mostly found at Baan Tawai Handicraft Village, Chiangmai Province. There are many types of products there, consisting of household furnitures, photo frames and glass frames as souvenirs, murals, portraits, animal drawings, and fortunate symbol platforms. Next, about the colored glass decoration in architectures, this type of technique were found in two areas, Chiangmai Province and Luang Prabang. In Chiangmai, the type of technique were found at Wat Ket Karam and Dhara Dhevi Hotel. Wat Ket Karam itself is full of colored glass decoration on the exterior walls of the chapel, which appears as symbolic like Puranakata, a form of Lanna art. However, the most beautiful and interesting part of these works is the glasses that will be sparkling when a light shines on them and reflects back. This result conespording to a research of Montida Kupthanaporn (2015), which explained about the beauty of light when it shines on colored glasses in church before reflecting back. This phenomenon gain a lot of attention and impression. Therefore, it perfectly shows how colored glass decoration works with the pattern design of house decoration and gain attention from people. Next, Dhara Dhevi Hotel, this place was found with colored glass decoration on the front walls of its Thai traditional house. The decoration appears as the shapes of Bodhi trees with beautiful curved branches, the forms of animals in nature, the forms of peacocks with different colors and beautiful patterns on their wings. The type of colored glass decoration technique here is Tem Puen Riab, that consistied of many forms, square, rectangle, long rectangle, pointy-cornered square, in order to be fit for the shapes of birds. These shapes are put in rows continuously and in oblique directions, depending on the shapes. There are different colors, for

more beauty. And, the colored glass decoration in Luang Prabang was found at Wat Chiang Thong. The Chapel was decorated in the type Tem Puen Riab. The front walls are full of the shapes of trees along with the shapes of animals, which created a very beautiful look. The tower of Lord Buddha's statue was decorated with the murals of locals' real lifestyles. The glasses were divided into pieces of squares and these pieces were put into rows, looking glorious with different color tones, following the shapes of trees. All lifestyles of locals are perfectly presented through these works, according to a research of Assavinee Wanjing (2001), which applied many stories of traditional culture, local lifestyles and the history of Phutthaisong County, to the creation of colored glass decoration and culture preservation in communities. All these consists of the motion of stories and beautiful natural lights that always reflect, which build an extra gorgeous, interesting, and outstanding image. Therefore the researcher took these ideas and applied them to the creation of forms, and patterns of colored glass decoration, in order to make all works more beautiful and reveal the knowledge of Thai traditional culture suitably to all people in Thai society. According to a research of Panchat Inkong (2003), which educate the preservation of Thai traditional drawing through business arts and the adminiatration of business arts, in the type of products with Thai traditional drawings. However, the truth here is: Locals' lifestyles, fortunate things, and Thai traditional culture,are the easiest factors to notice and understand, due to their uncomplicated stories, which make people remember the 3 things and apply these to their lives better than ever. Another research that also states the same ideas belongs to Pakphoom Hannapa (2010), who told about Buddhism through images and texts, in order to teach all Buddhists how to act properly. Beside of images and texts, the research is also presented through some parts of literatures for higher quality of learning. Same as colored glass decoration, it should be presented through images for the convenience of understanding and application too.

The technique of colored glass decoration can be found in the form of square shapes being put all over a smooth area, or the form of glasses being divided into pieces and used to create determined shapes with beautiful colors. All of these information to the colored glass decoration idea of Fine Arts Department (2016), which educated colored glass decoration before finding out that there are 5 types of it: 1) Colored glass decoration on a smooth area 2) Rong

Lai 3) Lai Ya (Putting pieces of glasses on gaps among patterns) 4) Fang Mook and 5) Waew (Using pieces of glasses to decorate pollens or Sai Lai).

By considering the suitability of each area, the researcher applied these 5 techniques to the creation of house decoration products, both murals and normal household decoration products, in order to create beautiful and usable works.

2. About suitable stories of Thai traditional culture for creating house decoration and building creative knowledge, it was found that these stories should definitely be based on the popularity in central Thailand and the frequency of activities, according to the idea of Lek-Prapai Wiriyan (2017), which says that traditions in each month of every communities in central Thailand became more well-known. That means, traditions in central Thailand are perfect to be applied and spreaded to other groups of people, for more interesting. Central Thailand is an area that full of many types of people, anyway. Therefore it will be easier than ever to spread traditional culture to everyone. For the close analysis of Thai traditional culture, the researcher found that merit-making activities, as bestowing foods upon monks, are also involved in every traditions. Some of traditions consist of asking for wishes from elderly people. There is the reason why Thai salute always appears in every activities. And Thai salute is something good for proper manner, which should be preserved and promulgate. All off these accord to the idea of Department of Cultural Promotion (2002), which expressed that all types of Thai traditional culture, including traditions, festivals, and minor rituals, should always be preserved and followed, especially if they have been being respected or done by people for so long. The reason is good fortune and happiness. Besides, everything here also goes with the result of annual popularity-evaluation check list. Songkran Festival and Thai salute were the most popular ones. Therefore the researcher applied them to the creation of house decoration, in order to bring benefits to commercial purposes and gain attention from many people. And, with attention, people can applied what they know to their real lives and proper behavior.

3. The development of colored glass decoration technique in Thai traditional style is a cause intellect. preservation of valuable intellect. However, it consists of 2 different steps: product design and prototype creation.

3.1 In order to create murals consumers necessary to consider the stories of Songkran Festival and Thai salute, before choosing 3 images from each story. The criterions of selection are beauty, image organization, and being good role model in real life. Moreover, consumers were also evaluated their satisfaction of Thai traditional culture cognition, about Songkran Festival and Thai salute. The result shows an excellent level. Therefore the two stories of Thai traditional culture are perfectly suitable for designing the patterns of house decoration.

3.2 The creation of household furnitures.

Design concept in furniture design by blending Thai into the content Thai culture and geometric shapes The layout is based on general design principles. In order to have a pattern based on the popularity of consumers in Asian cultures. Therefore, the style of furniture is based on the main material is wood. Utilize the functions of the product completely. And presented with furniture sketches, A selection of furniture, rendering and working drawings to create house decoration products Songkran festival and Thai salute. Therefore, the prototypes of murals and furniture are perfectly suitable for the development of colored glass house decoration in Thai traditional style. Creative knowledge should happen with all these. The image of Songkran Festival presents the understanding of itself, what people do and how to dress properly in this festival etc. At the same time, the products based on this factor are memorable and can be easily applied by consumers. In addition Thai salute it is proper behaviour in Thai society. Of course, with colored glass technique, Thai salute will be more interesting, interesting, and memorable. Anyone can see the tradition anywhere. Therefore, the presentation of Thai traditional culture story, for creative knowledge, is always based on the development of colored glass house decoration in Thai traditional style. The valuable intellect in preserved, along with new forms of products, which came from the innovation of commercial intellect.

Recommendations

1. The Recommendations for the application of research results

1.1 All entrepreneurs of colored glass house decoration should always be supported with the knowledge of illustration, in order to learn more about beauty. With this idea, entrepreneurs will be able to gain more attention from consumers. Conclusion is, there should be some special courses or trainings for entrepreneurs to join. Any organization can arrange this or host place, for instances, Department of Industrial Promotion, Department of Skill Development, Community Development Department, or any academy with Hands On courses, probably.

2. The Recommendations for next-time researches

2.1 The education of other types of local intellect is definitely necessary, in order to create more knowledge and commercial value. From this point, many communities will gain better incomes.

2.2 The demand of other colored glass product types should be concerned for making more inter city products.

2.3 The technique of burying colored glasses for pattern creation should be educated for the great benefits of all entrepreneurs.

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