WALL ART DESIGN FROM FABRIC WASTE

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ABSTRACT

The goal of this research is to determine how to turn fabric waste from sewing businesses and industries into a new wall art product design that incorporates eco-friendly materials and add value to the waste. Research and development methods along with qualitative research were used to conduct the analysis.

The results of the study can conclude that fabric remnants can be managed by converting them into decorative items. The aesthetic requirements of the products can be achieved by considering the nature of the fabric remnants, color blending of the fabric waste, balance, rhythm, and harmony in various design compositions.

Keywords: Wall art, Fabric waste, Waste, Design

INTRODUCTION

In the modern world, the textile manufacturing sector and its allies are crucial. They are important socio-economic endeavors that generate wealth and several jobs. Textile leftovers, on the other hand, are generated at every stage of the textile production process, from textile manufacture to garment production to customer service, and they occur throughout the supply chain, customer usage, and end-of-use disposal (Mifetu, 2021). It has been recognized that the manufacturing and use of textiles pollute the environment through supply chain operations and waste generated by consumers. It also requires tons of industrial chemicals and a lot of water for processing, and it has a major negative impact on the environment. There is an enormous amount of waste generated, most of which is disposed of irresponsibly and harms the environment instead of being appropriately managed. The fashion industry generates a remarkably large amount of waste fabrics. The fashion cycles bring about styles to become dated before textile products reach the end of their usefulness, creating waste that is bad for the environment.

According to Evans & Ross (2003), there are four different ways to dispose of trash: burning, recycling, burying in landfills, and reusing. A systematic transition towards a circular economy is necessary to mitigate the effects of the textile industry on the environment and climate, while preserving its economic and social benefits.

Waste management can be addressed by recycling and repurposing fabric scraps in the fashion industry. Recycling waste can significantly assist in mitigating the environmental effect of the textile industry by reducing the requirement for landfill space (Rubino et al., 2018). The concern of fabric scraps indicates that repurposing waste textiles in a novel manufacturing process could contribute to responsible disposal of waste whereas raising the value of newly produced goods (Rubino, 2021). The product designer can find the way to solve these problems by integrating knowledge with sustainable development that meets current needs without compromising the needs of future generations. According to this study, recycling can significantly reduce the amount of embodied energy that would otherwise be wasted, which is thought to reduce the amount of unwanted fabric waste. Furthermore, the process of reusing delivers value-added results.

This research aims to design and develop new products made from fabric waste. In this study, fabric waste was used as a raw material to produce wall art for adding product value. The researchers integrated knowledge of product design to increase the value of waste materials. Therefore, researchers made the decision to use waste fabric as an input for making wall art. This is just one of many waste management and removal techniques that are pertinent to the idea of ecological and economic design.

RESEARCH OBJECTIVES

1. To design and develop wall art made from fabric waste.
2. To create a prototype of wall art made from fabric waste.
3. To evaluate the designs of wall art made from fabric waste

RESEARCH METHODOLOGY

Wall art design from fabric waste is an applied research study to create new product under the scope of reuse waste materials that leading to the design and development of wall art products. Through the mechanism of the research process, techniques for designing products are brought to create economic value added. The research methods are as follow:

Research Procedure

Part 1: Data survey and collection using a literature review and a field study. The information gathered is examined and condensed. The summarized data was used to establish the conceptual framework for working on the design.

Part 2: Design and Development

2.1 Establish the design's conceptual framework.

2.2 Create sketch designs and design development.

2.3 Construct a prototype for a product.

2.4 Evaluate the designs for improvement.

This research began with a review of the literature, a field investigation to verify data on fabric waste, and an analysis of the qualitative data for discussion. It's an applied research study in the sense of research and development, which is a process that creates and validates the effectiveness of products. The study was conducted systematically and procedurally, i.e., a primary study (literature review and field study), design planning (determining a conceptual framework and creating forms for designing wall art products), application (creating a model and production), and evaluation of the design.

Data Collection and Data Analysis

Data was gathered from the internet, a library, videos, articles, and pertinent research studies, in addition to photographs, interviews, and questionnaires. After analyzing the data, a conclusion was reached that could be used as a reference when creating wall art out of fabric waste.

The five product design experts were chosen to consult on the design outcome as well as its resolution, which was consistent with the objectives and design assessment. The prototype wall art was evaluated by design experts based on four criteria: beautiful patterns and colors, be unique, be contemporary, and suitable for house decoration. These evaluations were gathered via an assessment form. Levels of agreement were indicated using a five-point Likert scale.

RESEARCH RESULTS

The goal of the study was to design and create wall art for interior decoration using waste fabrics, so the waste fabrics were gathered and arranged according to types, sizes, colors, and textures for the experimental wall art production. Four types of fabric waste from industries and sewing companies were selected and used in this research as seen in Table 1.

Table 1: Four types of fabric waste from industries and sewing companies

Type	Name	Shape of fabric waste	Fabric properties	Size
Natural material	Cotton		Cotton is a natural plant-based fiber that is soft and fluffy, strong, absorbent, and prints well. It has good color retention and is easy to handle and sew.	Width 12.0 cm. Length 14.5 cm.
Synthetics material	Lacoste fabric (Polyester)		Lacoste fabric has good moisture absorption, a smooth and clean surface, flexibility, excellent breathability, is crumple-resistant, and lasts a long time.	Width 4.0 cm Length 50 cm
Synthetics material	TC fabric (Polyester)		TC fabrics exhibit soft, smooth texture, flexibility, resistance to wrinkles, easily dye, and maintain their shape well even after repeated wear.	Width 13.5 cm Length 21.5 cm
Synthetics material	Rib Fabric (Polyester)		Rib fabric has great stretch and elasticity, retains its original shape after stretching, is durable, and is resistant to wear and tear.	Width 14.0 cm Length 32.4 cm

The researcher then created new decorative fabric flowers from four different types of fabric waste, considering straightforward methods of production and simple techniques.

Due to the variety and irregular nature of the fabric remnants collected, various techniques of garment and fabric product construction were analyzed, and hand-needle work was selected as a suitable method for producing the decorative pieces. (see Table 2)

Table 2: The decorative fabric flowers from fabric waste

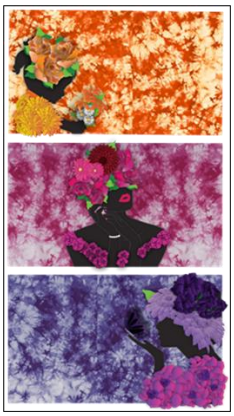
Design	Fabric Flowers
Design 1	
Design 2	
Design 3	
Design 4	
Design 5	
Design 6	

After creating the decorative fabric flowers from fabric waste, wall art design concepts were developed with consideration for the types of waste materials and remnants of fabric that were available, as well as the purposes of the home décor pieces. The decorative fabric flowers were used as decorative ornaments to create sketches for wall art designs.

According to the objective of the research, this wall art design revives scrap fabric and restores its value. Additionally, the fabric is a symbol of fashion and beauty. Hence, the researcher has a design concept that considers the sweetness and beauty of women of different ages, including the use of flowers to create liveliness in the design. All the sketch designs were brought to five product design experts to be evaluated on the following criteria: beautiful patterns and colors, be unique, be contemporary, and suitable for home decoration. A five-point Likert scale was used to indicate levels of agreement. The results of the wall art designs from fabric waste evaluation are shown in Table 3.

Table 3: The evaluation results of five product design experts on the wall art designs from fabric waste

Sketch design	List	Mean	S.D.	Level of satisfaction
Design 1 	Beautiful patterns and colors	3.80	0.75	Good
	Be unique	3.80	0.75	Good
	Be contemporary	3.60	0.49	Good
	Suitable for home decoration	3.60	0.49	Good
	Total	3.70	0.62	Good
Design 2 	Beautiful patterns and colors	3.80	0.75	Good
	Be unique	3.40	0.49	Average
	Be contemporary	3.60	0.49	Good
	Suitable for home decoration	4.40	0.49	Good
	Total	3.80	0.55	Good
Design 3 	Beautiful patterns and colors	4.00	0.63	Good
	Be unique	4.00	0.63	Good
	Be contemporary	4.40	0.49	Good
	Suitable for home decoration	4.00	0.63	Good
	Total	4.10	0.60	Good

Sketch design	List	Mean	S.D.	Level of satisfaction
Design 4 	Beautiful patterns and colors	4.60	0.49	Excellent
	Be unique	4.20	0.75	Good
	Be contemporary	4.40	0.49	Good
	Suitable for home decoration	4.20	0.75	Good
	Total	4.35	0.62	Good
Design 5 	Beautiful patterns and colors	4.60	0.49	Excellent
	Be unique	4.60	0.49	Excellent
	Be contemporary	4.60	0.49	Excellent
	Suitable for home decoration	4.40	0.49	Good
	Total	4.55	0.49	Excellent

The outcome of the evaluation by five product design experts of the sketch designs of wall art from fabric waste revealed that design 5 received the highest score, followed by design 4 and design 3, respectively. When considering each aspect of design 5, it was found that the aspect of beautiful patterns and colors, be unique and be contemporary got the same highest score ($\bar{x}$ = 4.6), followed by the aspect suitable for home decoration ($\bar{x}$ = 4.4), Then the researcher chose design 5 for developing and making a product prototype. (See Figure 1 and 2)

Figure 1 : The development of wall art from fabric waste
Source: Nichanant Sermsri

Figure 2: Wall art prototype
Source: Nichanant Sermsri

CONCLUSIONS

This research aims to find ways to use fabric waste as materials for producing wall art for interior decoration. The research results can be summarized as follows:

Fabric waste management from textile industries can be addressed by recycling and re-purposing fabric scraps in new products. The wall arts above were made by applying research and development methodologies, which means that they have gone through numerous processes before generating fixed designs. The wall art designs are expected to help accomplish sustainable waste management while increasing the value of new goods.

This study finds a way to reduce fabric waste into wall art decorative items as a viable alternative that reduces environmental pollution. Wall art products made from fabric waste are unique based on the differences in texture and color of the fabric. Many fabric handling techniques are also used to enhance the beauty and uniqueness of the pattern. Most of the production is done by hand, which makes the work even more charming and valuable.

In summary, the fabric waste obtained from industries and sewing companies was investigated to be utilized as the material to create an upcycled wall art product by integrating the design knowledge with sustainable development that meets current needs and using the basic technique for the production. It is a way to create more new products. Incorporating fabric waste into a new product might help accomplish sustainable waste management while increasing the value of new goods.

RECOMMENDATIONS

According to this research, future wall art design guidelines from fabric waste must combine innovation, modernity, and design creativity to meet beauty and uniqueness, together with the harmonization between old-fashioned and modern design. Moreover, decorative products must have additional functions besides their main function to increase the value of the goods. (Chandhasa and Pattanapanithipong, 2022). Discovering and applying new emerging elements in modern times will increase the innovation of wall art products.

ACKNOWLEDGEMENT

We would like to show our deepest gratitude to Suan Sunandha Rajabhat University for providing us with a scholarship and the opportunity to do this research.

REFERENCES

Chandhasa, R., & Pattanapanithipong, P. (2022). Souvenir Products in Thai Buffalo Conservation Village, Suphan Buri Province, Thailand. *Journal of Positive School Psychology*, 3601-3612.

Evan, D., & Ross, S, "The environmental effect of reusing and recycling a plastic-based packaging system. *Journal of Cleaner Production*, 11(5), 561-571, 2003.

Mifetu, G. M. (2021). Possible Ways of Minimizing Fabric Waste: A Case Study of KAD Manufacturing Limited, Ghana.

Rubino, C. (2021). *Sustainable Materials from Textile Waste*. Retrieved 16 March 2022, from https://iris.poliba.it/handle/11589/228319#. YXnMxZ5BzIU.

Rubino, C., Liuzzi, S., Stefanizzi, P., & Martellotta, F. (2018). Textile waste in building sector: A review. *Modelling Measurement and Control B*, 87(3), 172–179.