

## A study on the enfolded technique of origami art sensible among five years children in Perak, Malaysia



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### ABSTRACT

Visual art plays an essential role in children's life. Through art exposure, the children are competent to explore their luminous world; by exploring and experimenting with their biological sensory and surroundings. In fact, the children improve artistic skills by developing through their personal interaction in an experiential learning concept. Previous research has found that the children's creativity skills include cognitive, psychomotor and fine motor ability capable of enhancing through hands-on origami activities. In relation, the research has replicated and expanded the origami concept, which is only focused on the origami folding technique. Origami is the art of paper folding. The origami terminology derives from two combinations of Japanese words which are ori (folding) and gami (paper). The art presents a delicate three-dimensional construction of a geometrically formed animal from a single squared paper that requires multiple intricate folding techniques. This process justifies several origami folding techniques are identifiable. Eventually, some of the technique is very complex and requires a highly skilled ability to crease, which is inappropriate for early childhood stages. Apart from that, there are minimal studies has been done concerning the origami folding technique that is formidable for the early childhood stage. Therefore, the research intends to identify the precise origami folding technique that is suitable for five year old children and discover their potential. The paper has employed a qualitative case study within the pragmatic paradigm, which involves the observations and documentation on the literature instruments. The study involved a group of five year old children to represent the early childhood stage. The research was conducted in a private kindergarten and intentionally focused on two specific areas which are the urban and suburban area in Perak as to discover the significant result. The paper presented the current result based on the analysis found. The research outcomes have an immense potentiality to contribute a new knowledge towards modern art, children's creative development and as a reference in the academic studies.

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### 1. Introduction

The art of paper (origami) is a unique artwork as it is enriched with an aesthetic value that visualize the Japanese philosophy, culture and heritage. The origami art does not only focus on the exquisite artwork, yet it is also capable of educating the

children in a diversity of perspectives. Previous research discovered that children's creativity is capable to enhance their knowledge through origami activities. Eventually, the established origami folding technique is not perfectly suitable for the children's coordination and psychomotor skills. The issue has affected the children's capability to construct a delicate origami artwork as it requires a sophisticated technique. In relation, the research has taken upon the issue to identify the precise folding technique that is suitable for the five year old children.

The research anatomy has engaged the qualitative study within the pragmatic paradigm,

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which involves the documentation on the literature and the observations instrument to manage a depth study. The research has designed a creative project that is specifically made for five year old children to achieve the research aim; to identify the precise origami folding technique. This creative project is delicately structured to ensure that it is full of exhilaration to grasp children's intention to participate as it involves children as the primary respondent. The project task is designated based on the children's most preferred animal as the main theme. The task engages with relevant art and craft materials that are children friendly to ensure their safety. In relation, the project offers a diversity of forms from experiential learning concepts through hands-on origami activities including experimenting with various folding techniques on the surface of paper to construct an exquisite three-dimensional form, an origami surface decoration which is full of playful elements. The observational study was conducted at two different areas in Perak state around the urban and suburban area. The research has presented the result based on the data analysis derived from the conducted observational study. The research outcomes have an enormous potential to contribute new knowledge on various aspects of visual art and as a reference in academic studies.

## 2. Literature review

### 2.1. Origami art

The Origami terminology is derived from two combination Japanese words which are *ori* (to cut) and *gami* or *kami* (paper), (Bolitho, 2014; Mitchell, 2010; Hayakawa, 2009; Gardiner, 2008). Origami can be defined as a three dimensional (3D) paper craft that intentionally focus on the paper folding to construct a delicate artwork. The research has identified the origin of the origami subjects focused on the animal, such as *tsuru* (crane), *tatsu* (dragon), *neko* (cat), *sakana* (fish), *usage* (rabbit), *chocho* (butterfly), *kaeru* (frog) and *kame* (turtle). The Japanese culture displays that every origami subject has its own cryptogram and play a significant role in the origami art that represents their ethnicity. (<http://thepapercraneorigami.com/animal-symbolism>).

### 2.2. Enfolding technique

Origami is a unique artwork, as the design is focused on the three-dimensional form constructing method. The origami artwork requires multiple folding techniques in a single squared paper to create an exquisite artwork that is enriched with aesthetic value, depth and dimension. Therefore, the precise folding technique is the essential element to construct the perfect origami artwork.

According to Mouvement Francais des Plieurs de Papies (MFPP), there are five basic origami folding techniques including the valley fold, mountain fold,

pleat fold, inside reverse fold and outside reverse fold. Jean-Claude Correia, the founder of the MFPP origami club, holds the international origami conference (Trebbe and Corkett, 2012).

In relation, Bolitho (2014) affirmed that there were several origami folding techniques to form a flawless origami artwork. The folding techniques are basic folds that includes the mountain and valley fold, reverse fold, outside reverse fold and sink fold. Hayakawa (2009) affirmed that there are two types of folding techniques such as the mountain and valley fold. Gardiner (2008) affirmed that there are fifteen types of origami folding techniques including the book fold, cupboard fold, blintz fold, pleat fold, biset fold, inside reverse fold, outside reverse fold, double reverse fold, inside crimp fold, petal fold, squash fold, open sink fold, rabbit ear fold, double rabbit ear fold and swivel-fold.

## 3. Methodology

The research anatomy has focused on the qualitative research design throughout the pragmatic paradigm. In order to manage a depth studied, the research has implemented the literature review documentation along with the observational studies. Fig. 1 shows the research design framework.

### 3.1. Documentation on literature review

The research has obtained primary and secondary data from all resources and information that are related to the study. The data collections are derived from differential instruments such as journals, books, and online resources.

### 3.2. Creative project

Origami is a fun art activity as it consists of several amusing, creative elements. In order to identify the perfect folding technique, the research has designed the creative project to achieve the research aim. The project exquisitely design by giving a full engrossment on the children creative elements which it offered a diversities form of experiential learning method (edutainment) through an enjoyable origami hands-on art activity; including the three-dimensional form construction, folding activity, surface decoration experience and full of play element. The project was structured to ensure that the activity can attract the children's interest to participate and attain the research intention.

Moreover, the project is engaged with the children's friendly art equipment in ascertaining the safety issue. The creative project was purposely designed to identify the precise origami folding technique that is suitable for the five year old children. Fig. 2 shows the creative project that has been implemented in the study.

This creative project involves three phases including a three-dimensional form construction, surface decoration session and play activity. It

focused on the children’s favorite animal subject as the main theme. The project is compulsory for every

respondent to participate in all designated activities.

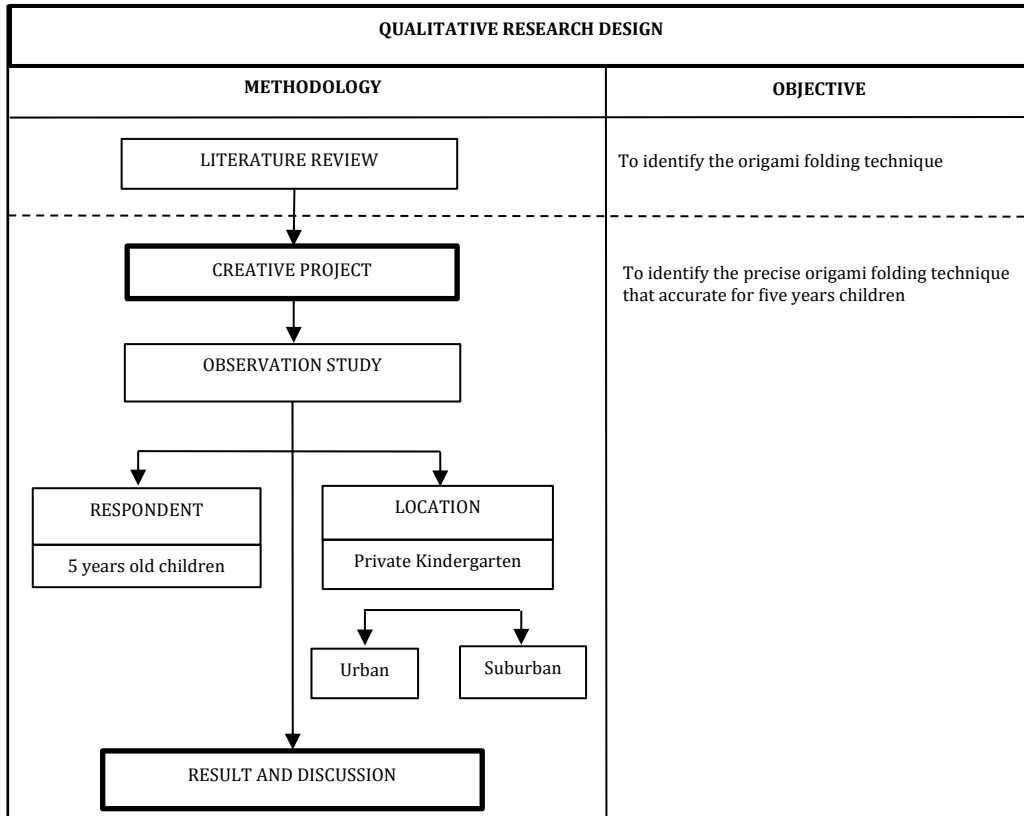


Fig. 1: Research design framework

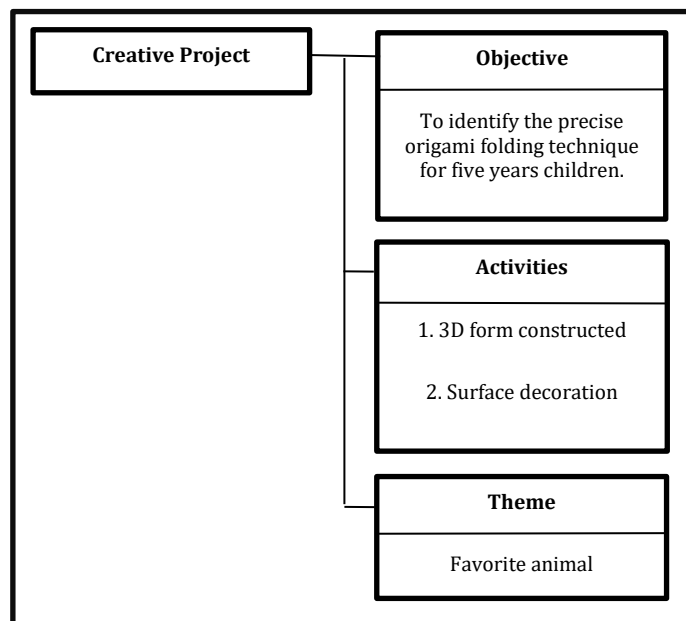


Fig. 2: Creative project framework

### 3.3. Observational study

The observational study was carried out at two different areas in Perak which is the urban and suburban area. Every area has involved in a group of five year old children who represented the research respondents. Concerning the ethical issue, the research has designed the ethic outline to conduct the study as it involved humans as the significant participants; children as the primary participants.

The ethical consideration is the essential element in constructing the social science studies. [Isa and Forrest \(2011\)](#) affirmed that the ethical regulation is essential in social science research as it creates the awareness of human life and rights within the researcher and the participants. Regarding the issue, every research element that are related to the ethical issue was addressed by the provided consent form which it acts as the agreement between the researcher and the participants.

The research began to carry out the study at the selected private kindergarten during the morning school session as the respondent consists of preschoolers. The activity took about one hour and thirty minutes duration time which began at 11.00 am and ended at 12.00 noon. The research has conducted the project inside the kindergarten classroom to ensure that the learning environment is

comfy and secured for the children because the conducive learning environment plays an essential element in the activity to ensure that the respondent enjoyed the process. Before conducting the creative project, the researchers have ensured that the activity is secured and appropriate for the intentioned respondent. Fig. 3 shows the observational study that was conducted in the study.

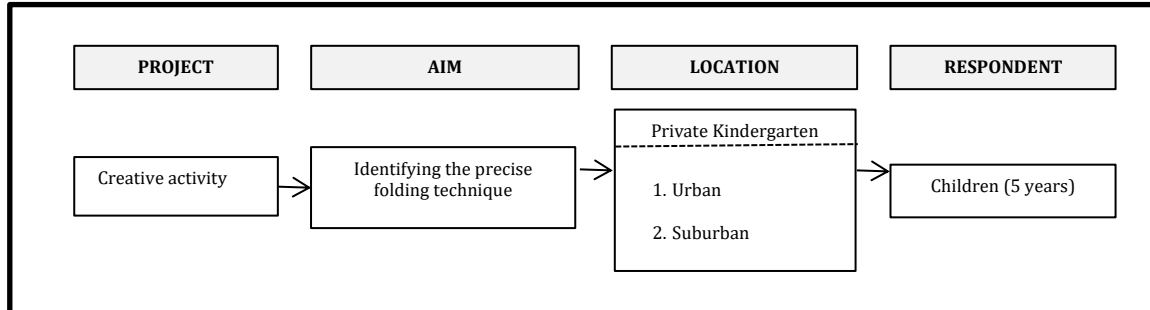


Fig. 3: The observation study

The creative activity involved two phases including the folding and decoration session. The project task has been explicitly focused on the menagerie subject as the main theme. Every respondent are required to construct an origami form and decorate its surface. The project began with the first session which is the folding technique. Every respondent is required to construct a 3D favorite menagerie form based on their interpretation and experience. It is also compulsory for every respondent to apply any folding technique to create the art form on a piece of a single squared paper that is provided by the researchers.

During the study, the researchers were acting as the primary observer in every conducted activity as the direct observation provides a comprehensive of the real-life perspective. After completing the activity, the researchers collected every data (menagerie artwork) made. The researchers also recorded the entire project using a digital camera as the primary documentation device. Every attained data is utilized as the content analysis. Towards the end of the project, every respondent received a goody bag as the token of appreciation.

**4. Results and discussion**

Concerning the data that achieved from the literature study, the researchers discovered several types of folding technique that have implemented in the origami art. The technique included mountain fold, valley fold, pleat fold, reverse fold, inside reverse fold and sink fold, book fold, cupboard fold, blintz fold, biset fold, double reverse fold, inside crimp fold, petal fold, squash fold, open sink fold, rabbit ear fold, double rabbit ear fold and swivel-fold. These technique has been utilized widely nowadays in order to construct an exquisite origami artwork. Eventually, the researchers discovered that some of the established origami folding techniques are not eligible for the five years children.

**4.1. The precise folding technique for five year old children**

Regarding the conducted observational studies, the researcher has identified the precise folding technique for the five year old children. Every achieved data has been organized into a thematic approach to identify the significant information for the content analysis. Throughout the thematic approach, it was easy to determine the possible relationship between every collected data and able to build up the understanding within the study context. Table 1 shows the data achieved from the observational study.

Table 1: The observational studies result

Area	Folding Technique			
	Mountain / Book	Valley	Bisect	Cupboard
Urban	5	5	3	4
Suburban	5	5	2	2
Result	10	10	5	6

Referring to the data achieved, the researchers determined that there are only four folding techniques suitable for the five year old children. The techniques are including the mountain or book fold, valley fold and bisect fold and cupboard fold. These folding techniques are classified as a fundamental technique in the origami art. The study showed that the five year old children have limited coordination and psycho-motor skills to construct a complex origami folding technique. Even the conducted study at two different areas which is in the urban and suburban visualizes the parallel result. This shows that the children creativity in the two areas is similar to one another.

**4.2. Origami as children’s art edutainment medium**

The observational study has displayed that the respondents enjoy participating in the creative project. The children expressed their excitement

during and after the activity. For instance, during the activity, all respondents have an amusing experience through exploring the origami folding technique and experiencing with the art and craft materials in the origami surface designing activity. The experiential learning concept has affected children's creative development; coordination, psychomotor and critical thinking ability in a positive way. Subsequently, after the origami form was constructed, the children began to play with the artwork. As a result, the research has identified that the origami art is one of the best edutainment media in enlightening the children creativity. Therefore, it is essential to implement the precise folding technique in the process of designing the origami art for the children.

## 5. Conclusion

Origami can be defined as one of the most intelligent children art edutainment media as it consists of a several of intelligence features that is competent to enlighten children's creativity respectively. The research emphasized a full engrossment on the creativity relationship between the origami art (folding technique) and the edutainment concept specifically focused on the five year old children.

Concerning the analysis result, the research objective has been successfully achieved. The study has identified four precise origami folding techniques that is suitable for the five year old children including the mountain or book fold, valley fold, cupboard fold and bisects fold. The research finding has an immense potential to be implemented as a folding technique in the children's origami design. Therefore, the children will have the opportunity to enhance the creative skill through the origami art.

Future research may need to focus on complete stages of the early childhood to attain a full phase of the children's origami enfolded technique, and a comprehensive perspective in the local context as

there is a limited study which was conducted in Malaysia.

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## Compliance with ethical standards

## Conflict of interest

The authors declare that they have no conflict of interest.

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