

The process of making batik wayang beber using digital canting with sungging painting coloring technique



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ABSTRACT

This article carries the application of creating *wayang beber* patterns with *sinjang batik* techniques. This research aims to answer the endless question regarding the variation of *batik* patterns. *Batik* patterns are not only used in clothing but also as decoration. In this case, *batik* is used as decoration with *wayang beber* patterns using *batik* painting techniques. The research was carried out by making an example of a model, starting with looking for possible utilization by using a design from a computer graphics program. The research scope is limited by the creation of the *wayang beber* patterns and their application. The steps of designing are to create a prototype model, starting with conducting emic and ethical research. The next step is contemplating the whole pattern development design using digital technology. This is done by looking for suitability based on aesthetic principles and followed by *pentantingan* using the SGL-4332 series digital *batik* canting machine. For the final step, colouring is carried out using the *batik* painting technique, which is done manually using the rules of *sungging* gradation. This research produced a prototype model of *wayang beber* creation with *batik* techniques, which can be used by *batik* craftsmen to bring out new innovations in their work.



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1. Introduction

The world is rapidly moving towards becoming entirely digital, and most people have already adapted to a new way of life that is intimately tied to technology [1]–[3]. Technology has developed into tools that can meet most human needs. Technology has been used by people to help them work more effectively [4]–[6]. The information needed may be obtained quicker and more easily thanks to the digital age, and the development of innovation in many industries is focused on this technology, which streamlines the work process [7]–[9]. Based on this point, there are many opportunities for innovation development, especially in the arts, particularly traditional arts, that can be combined with technology. This research refers to the original Indonesian arts, namely *batik* and *wayang beber*. *Wayang beber* is the oldest *wayang* found in Indonesia; even various kinds of literature mention that it is older than *wayang kulit*. This *wayang* is one type of *wayang* that is located in the Java area, made from paper and drawn according to story scenes and staged in the form of a picture show that is stretched in the form of pictures or scrolls that distinguishes each scene/event in the story that is carried by folklore, namely stories Panji [10]. On the other hand, art based on tradition, such as *batik* and *wayang beber*, still rely on manual technology that relies on the creator's expertise or skill. *Batik* is a masterpiece of art belonging to the Indonesian nation that developed hundreds of years ago, precisely during the Majapahit kingdom [11]. At the beginning of its appearance, *batik* was predicted to come from China or India [12], [13]. Lombard disputed Rouffaer's assertion, claiming that the batik-making method originated in Java, specifically in the coastal region [14]. The growth of *batik* includes art and technological aspects which belong to the former cultural heritage predated from the palace community [15], then expanded into the outside of the palace environment, and now it has become

the main national culture-based industry [16]. *Batik* is a tradition that exists and grows in society, so it is not difficult to find its existence in daily life. *Batik* has taken root for the Indonesian people since its stipulation as an intangible cultural heritage on October 2, 2009 [17]. For example, the production of *wayang beber*, takes quite a long time and meticulousness. This is because conventional *wayang beber* is made with intricate manual techniques. Bagyo Suharyono stated that: *Wayang beber* is made with good *sungging* technique, which is meticulous and intricate [18]. The human figure is made with styling: the figures as the story character appear larger than those who are not. The face shape is made half-slanted, while the body shape is lengthened [19].

Wayang beber shows images of *wayang* characters that, in addition to being coloured (*sungging*) are also rolled on paper made of bark. Therefore, *wayang beber* can be classified as Sequential Art. Sequential art is a collection of works of art with continuity between one another, both images and stories that are juxtaposed, that is, next to each other or close together [20]. Each roll contains a single scene or *jagong* consisting of several characters. The story is taken from Panji's story, which in one *jagong* is rolled by a rounded-edge wooden roller. For the stage show, the roll will be simply opened or unrolled. In 1378 Prabu Brawijaya ordered one of his sons Raden Sungging Prabangkara who had the skill to perfect the *wayang Beber* by painting so that it changed from black and white to colour [21]. At first, *wayang beber* was part of the need in the performing arts, but as *wayang beber* show began to become unpopular, the image of *wayang beber* as a traditional art began to shift in the realm of visual art appreciation. *Wayang beber* evolved into the art of decoration, which refers to the art of tradition, and has undergone a revitalization, reinterpretation, and even modifications that enrich the characteristics of the traditional art itself. Tradition art usually becomes a part of life in a society that is the legacy of its ancestors and lives inherently within the society. Nonetheless, traditional art will unavoidably be impacted by technological advancement. There is no exception to the existence of traditional arts that have been regarded as cultural identities for the supporting community [22].

People's supporting attitudes regarding traditional arts are changing as a result of the development demand. It is handled not only as a cultural identity that accommodates the ritual needs of its supporting society, but traditional arts are also required to be adaptive to the times that can contain elements of development itself in order to adjust to societal changes. In reality, there will be alignment in its development. This is in accordance with what Zhu stated that the existence of traditional art in the current era of economic globalization is in harmony between traditional values that serve harmony and mysticism with contemporary values, which tend to be organized by the development of information technology, cultural consumption, and mass media play [23]. With this development, traditional arts face new value challenges that give birth to practical devices which are based on information, communication, and technology. With these devices, producing and reproducing as many cultural expressions as possible in the digital age has become an inevitability. As a result, a strategy is required to revitalize traditional art in order to keep existing while balancing time's demands. Traditional art, which has been an expression of supporting society to create harmony between humans and their environment, must adjust to the needs of society in line with the time's demands [24].

Based on this thought, the author has an idea to develop traditional art in the form of *wayang beber* combined with *batik* techniques by doing the design and *canting* process (applying the wax in *batik* making) digitally. In general, the process of making cloth motifs is by making dots on the cloth using wax or liquid *batik* wax [25]. However, in this work, the researcher will use digital technology in the manufacturing process. The technique of making *wayang beber batik* motifs uses a combination of writing and painting techniques from five *batik*-making techniques, namely according to the division of Indonesian *batik* according to Bagong Kussudiardja consists of five types; (1) finely written *batik*; (2) primitive written *batik*; (3) *batik* stamp; (4) *batik* printing; (5) *batik* painting [26]. However, the colouring is done manually, using *batik* painting method, creating a combination of digital and manual techniques reflecting modernity and traditions. The production process applying this painting *batik* technique shows a more dynamic *batik* development than *wayang beber*. This is due to the fact that *batik* is a work of cultural heritage that has evolved over time. The changes that have happened have demonstrated that the art of *batik* crafts is highly dynamic and can adapt to the dimensions of form, space, and time [27]. It is intended that study like this would result in creative and innovative work, with new works emerging from traditional art ideas and techniques. Preliminary field observations linked to this research demonstrate how the development of *wayang beber*, *batik*, and their present reality are; (1) There are no or few who use digital machines in *batik* making; (2) no *wayang beber* is found made using *batik* method; (3) in the current period, it is important to have innovation and

creation that can respond to the changes and problems of the era. Based on these issues, it is suggested that a model of traditional art development based on the cultural origins of Nusantara (the Indonesian archipelago), particularly *wayang beber*, be used. It is expected that as a result of this research, traditional art, particularly *wayang beber*, will survive and thrive in society with valuable new innovations.

2. Method

The research was carried out by making an example of a model, starting with finding visual forms through the design of *wayang beber* using designs from computer graphics programs. Essentially, an example of the model is done to try, find, and confirm so that this research design may obtain the most appropriate design based on visual art principles. The designs of both picture background decoration and colours in the shape structure of *wayang beber* figure use computer graphics medium. The scope of the research includes the limitation of the target and object of research. The research target is limited to the issue of *wayang beber* design that is developed to adjust the size of *sinjang* on *batik*. The object of this research is *wayang beber* made with *batik* technique. The design steps to produce a model in the form of a prototype begin with conducting emic and etic research and then conducting experiments through contemplation by developing a *wayang beber* design on the scale of the *jarit* (*sinjang*) size, then the *canting* process (or *nyanting*) is carried out using the SGL-4332 series *batik* machine, followed by the colouring process with *batik* painting technique. In summary, it is described in the following Fig 1.

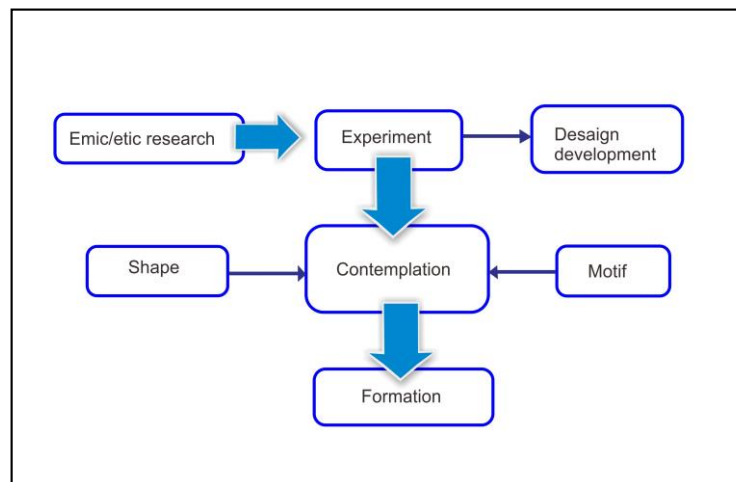


Fig. 1. The figure of design steps for obtaining the prototype model [28]

3. Results and Discussion

Since being designated as an intangible cultural heritage, *batik* is increasingly at the peak of popularity. There are more and more *batik* enthusiasts as a reflection of the cultural identity of the archipelago, which is implemented by collective awareness of Indonesian citizens to wear *batik* clothes because *batik* is the ancestral heritage of the Indonesian nation and the uniqueness and uniqueness that distinguishes the Indonesian nation from other nations [29]. The development of motifs always develops from various sources, one of which is sourced from other regional arts, including *wayang beber*. The creators of *batik* ornaments in ancient times not only created something that was beautiful to the eye but also created something beautiful. They also give meaning or meaning that is closely related to the philosophy of life they live. They create traditional *batik* motifs with sincere and noble messages and hopes in order to bring goodness and happiness to the wearer. When traditional *batik* motifs were created, they could not be separated from the influence of customs and culture, as well as religion [30]. The research was carried out in stages with qualitative data analysis. This product application process refers to the form of manufacturing process innovation refers to the innovation process, which is a process in which a firm can provide a better manufacturing or service process than the current operation [31]. The research steps that have been carried out are;

3.1. Design Making

Batik is one of the creative industries and potentially has become a favourite fashion in Indonesia [29]. The process of design making in this study was done using a computer with the CorelDraw program. It started with observations about the forms of *wayang beber*, figures in *wayang beber*, the story of *wayang beber*, also the typical colour and pattern of *wayang beber*. The design steps are carried out as follows.

- Specifying line drawing; line drawings in the form of Jpeg format are used as a reference in the creation and development of *wayang beber* design. Some of the line drawings that the author managed to collect include the following.
- Main character creation; A piece of *batik* does not only store the aesthetic values of the interlacing of decorations and colour combinations. However, more than that, it also stores value systems, symbols, philosophical meanings, and adaptation strategies of the supporting communities [32]. Because there are differences in value systems, symbols, philosophical meanings and adaptation strategies, the expressions of *batik* works made by one community will be different from other communities [33].

The decorative motifs of *batik* in this study are based on the beliefs and customs that exist in an area. This is in line with the *batik* ornamental variety in general and is closely related to the following factors; (1) the geographical location of the area of the batik maker concerned; (2) the nature and way of life of the area concerned; (3) beliefs and customs that exist in the area concerned; (4) the surrounding natural conditions, including flora and fauna; (5) the existence of contacts or relationships between *batik* areas. In making the main character, it is done after determining the theme of the *wayang beber* to be made. In general, *wayang beber* characters are depicted with a stooped body, having large heads, shoulders and arms with unusual compositions based on saga stories in temple buildings [34]. The topic of this study is the fight against the coronavirus outbreak. Thus, a character who explains being immune to the coronavirus is required. Raden Panji Asmorobangun, a *wayang beber* play figure, is chosen. This character will afterwards be arranged with the coronavirus, which depicts the fight and immunity against the virus. Meanwhile, the author divides the form structure of the Panji Asmorobangun figure into three parts: top, middle, and bottom, which corresponds to the analysis of the findings of Pratama and Oemar research published in the educational journal *Seni Rupa* (visual arts) in 2016 and is described as Fig 2.

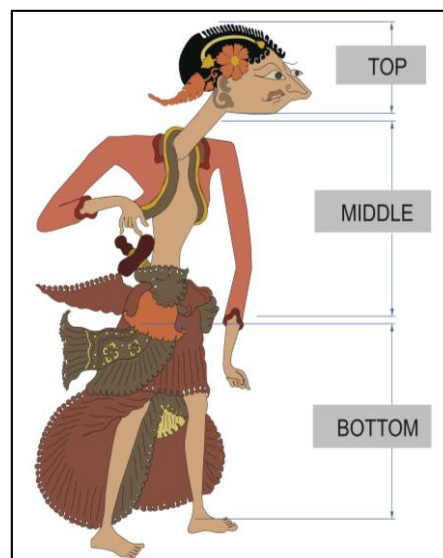


Fig. 2. Image Classification of Panji Asmorobangun figure [35]

Based on the classification of the visual form of the figure above, each part may be known in detail, especially the elements of the form that make up each part of the figure picture, as the author displays in the following Table 1.

Table 1. Table of Raden Panji Asmorobangun figure detail shape

Category	Body part name	Term name in wayang	Appearance
Top	Hair	<i>Seritan alus</i>	Black straight hair
	Ear	<i>Kuping</i>	Having similarities with humans but larger in size
	Eye	<i>Mripat kedelen</i>	Narrow-shaped eyes
	Mouth	<i>Cangkeman mesem</i>	Smiling lips
	Nose	<i>Ambangir</i>	Pointed sharp
Middle	Neck	<i>Gulu</i>	With necklines
	Chest	<i>Dodo</i>	Flat-shaped
			Slightly longer than the real proportion of human hands
	Hand	<i>Siku</i>	The fingers of the left-hand hold the fist The fingers of the right-hand bends on the ring, and the middle fingers
Bottom	Foot	<i>Suku</i>	Tapering down The size of the thighs upwards is shorter than the thighs down

In addition, Raden Panji Asmoro's figure also wears several accessories set. Accessories set are fashion equipment including in the form of worn jewellery. This is a reinforcement of the character attached to the figure, which in this case is the figure of Raden Panji Asmorobangun. Table 2 shows the accessories and fashion styles of Panji Asmorobangan.

Table 2. The table of accessories and fashion style of Raden Panji Asmorobangun figure.

Classification	Style element	Term name in wayang	Realization
Accessories and jewellery	Clothes	<i>Ageman</i>	Red coloured Covering parts of the body from the abdomen to the calves
	Kris	<i>Keris</i>	Visible halfway Yellow gold-coloured
	Wristband	<i>Kara</i>	Two circles Yellow gold-coloured
	Earrings	<i>Subang</i>	Ordinary circles without bottoms (<i>bokongan</i>)
	Ear accessory	<i>Sumping</i>	Leaves and flower shaped

After understanding the figure character to be featured in the primary theme of this *wayang beber*, the next process is digital designing using the Corel Draw application on the computer. Tracer is one of the features included in Corel that is used to trace and cut the image object to help with the process of creating figures. However, in this study, the author performed it manually with the pen tool. This is to make graphics in line format that the SGL-4332 series *batik butimo* canting machine can read, see Fig 3. After successfully creating a figure, the following stage is to make other picture objects such as coronavirus, leaves, and clouds. The object of these images is used as a master or reference form to be copied when duplicates are needed. If a slightly different form is necessary, the master image can be modified. The following are the alternate design outcomes from the study.

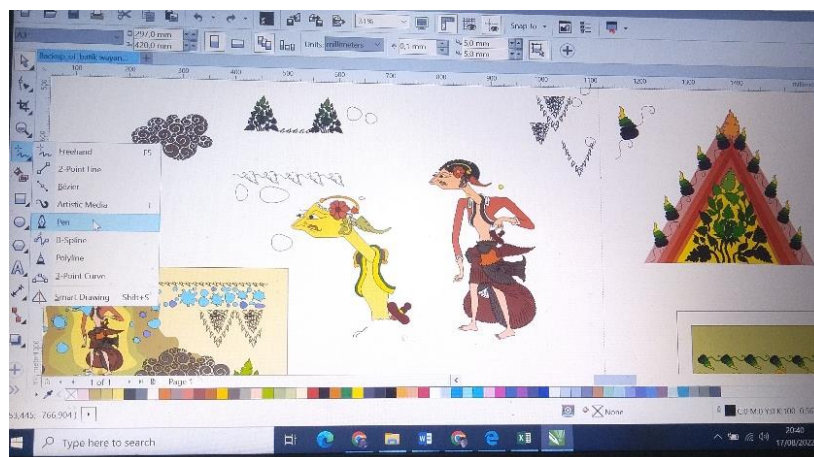


Fig. 3. Image of the use of the pen tool in making a wayang beber design on Corel Draw computer program

3.2. Digital Nyanting Process

The application of the wax or *nyanting* process is done with the *Butimo* brand digital canting machine SGL-4332 series. The steps taken in this process include the following:

- Setting down a primetime cloth on a flat board. For the best results, the fabric must be entirely stretched tight so that the central section of the material is not curved.
- Inserting the *batik* wax into the needle tube. In this process, the batik wax is cut smaller so that it can easily get into the needle tube; also, ensure to check the wax filter so that the wax dirt does not enter the needle and clog it.
- Opening the design that has been made on the *butimo* machine computer. In this process, the starting point of work is also set, including the height and speed of *canting* needle. After setting up the speed and having the needlework, the operator can wait until it finishes. Fig 4 shows some images from the editing process using the SGL-4332 series *butimo* machine:



Fig. 4. Image of the *nyanting* process using the SGL 4332 *butimo* machine

3.3. Colouring

In this study, colouring was done by painting using *remasol dye*. Indeed, when speaking *batik* usually has a certain standard in the making. UNESCO's Convention pointed out that Indonesian *batik* is classified into three categories; (1) written *batik* (handwritten *batik*); (2) stamped *batik* (stamping *batik*); and (3) combination *batik* (handwritten and stamping *batik*) [36]. Based on how it is made, *batik* can be divided into three types, namely: hand-drawn *batik*, stamped *batik*, and painted *batik*. Of the three types of ways of *batik* making, the author uses the painting technique as the colouring method since it is considered the most suitable way to apply in *batik* making in this research. *Batik*, in addition to being a work of handicrafts, can also be reviewed as a technique which is included in the group of *resist dye*. From this aspect, the *batik* technique has the opportunity to become a medium of expression. This can be seen in the creation of painted *batik* as a new breakthrough. Painted *batik* was created since *batik* artists became more courageous and creative in the work of *batik* crafts innovation.

The result is usually for decorative purposes so that painted *batik* does not need to be done on both sides of the fabric but only on one side of the face [37]. How to make painted *batik* does not have any standard guidelines, such as hand-drawn *batik* and stamped *batik*, which have many references or standards on how to make it. This study tries to combine the latest technology with manual techniques in the making process. The *canting* process is done with the *Butimo* machine, while the colouring is done with manual painting. The painting process uses a brush tool that gives a unique colour scratch on the *batik* result. The colouring technique by painting like this in *batik* world is often called *colet* technique. The *colet* technique is often interpreted as a brush technique because it gives colour with the brush tool by drawing on a certain motif ornament that is bounded by wax lines so that the colour does not seep into other areas. In *batik colet* colouring technique, colouring in some places using a *colet* system with a brush with only one-time dye, except *soga* colour, while other colours use *colet*. This *colet* colouring is known as *dulitan* in northern coastal places like Gresik, and the resulting *batik* textile is known as *dulitan* cloth.

This *colet* method is considered more practical than *kerokan* (scrapped) or *lorodan* (wax removal) Fig 5 (a). This technique usually uses the colour substances such as *remasol*, *rapid*, *naphthol*, or *indigosol*. The *colet* technique is usually for colouring the main motif. In *colet* colouring technique, See Fig 5 (b), the colour substances solution is sometimes given a thickener to prevent its spread to other ornament areas, anticipating if the wax holding the paint area is not so good [38]. Furthermore, Sewan Susanto explained that, in colouring with *colet* technique, it is necessary to pay attention to the following things. A solution of colour substances with a high concentration in the cold state is brushed on the fabric where the area to be given the colour is well restricted by the wax. Dried, left open for a while until dry properly. Fixate or raise its colour according to the type of colour substances used in dyes. This *colet* or painting technique has some advantages and disadvantages in the colouring process. Some of the advantages of the painting/*colet* technique are that the colours produced in one piece of *batik* may vary, it is flexible, the use of colours is relatively efficient, it has vivid colour, it is possible to choose which *batik* ornament to paint and which one not to paint, and it is water-saving. Meanwhile, the disadvantage of the painting technique/*colet* is that the colour can spill over into other motifs or ornaments.



Fig. 5. (a) Image of the work after the wax removal (*lorodan*) process, (b) Image of Coloring Process with painting *colet* technique

4. Conclusion

Based on the discussion that has been outlined, it can be concluded that this research finding shows the importance of utilizing traditional art development models, especially *wayang beber*, to other forms of variation, such as *batik*. Thus, traditional art, in this case *wayang beber* will be able to adapt to the current era's advancement. In this research, the traditional art of *wayang beber* has been developed so that useful new innovations could emerge. The findings of this study in the form of new innovations in the development of *wayang beber* include the following; (1) *Wayang beber* design that utilizes digital media, making it very easy to store, create, and publish. This practicality can be said to be an adaptation following today's digital era; (2) Prototype of *wayang beber* work in the form of *batik*. It is expected that this finding can be used as a model and reference for actors/activists of *batik* industry and traditional art in general. The findings of this study are hoped to improve understanding of *wayang beber* varieties as well as *batik* variations, therefore, also indirectly increasing economic value. Furthermore, it is expected that this study will contribute to the emergence of new inventions, enhance technique or method creation, and serve as a model for traditional art development. Finally, the findings of this research can bring positive impacts on the advancement of Science, Technology, and Art.

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