

TRAINING MODELS OF BATIK MOTIF DESIGN DEVELOPMENT FOR DESIGNERS IN MICRO ENTERPRISES

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Abstract: This participatory action study aims to develop a training model to develop designs of batik motifs for designers in small businesses in Indonesia. Partners of batik motif design at work are batik skippers and the batik motif design has been validated by expert of batik design. Research participants consist of 6 designers and a batik skipper in small business of Dewi Ratih batik in Pilang village, Sragen regency, Central Java province, Indonesia. There are two processes of data analysis. The first process, qualitative descriptive method is used to explore and compile the draft model of design development training motif for the designer. The second process, the method of reviewing the participatory act of the designer and the skipper to test the draft of the model produced in the first process. The results of study show that the training model of design development motifs for designers in small business includes 4 stages, namely any design needs analysis, program planning, facility and engineering infrastructure, and training measures implementation. The training plans programs includes compiling training objectives, materials, media, methods and facilities. The purpose of training is to improve the quality and number of design products. Training materials consist of batik motif patterns, types of batik motifs and the meaning of batik motifs. The prepared training media includes fabrics, patterns and master motif pictures. Training methods include demonstrations with some motif drawing strategies. Training facilities consist of tables, carbon and lighting. The training is conducted based on adult education and self-learning concept, the work process is directed to the designers' creativity development by adjusting the level of competence, and adapted to the socio-cultural environmental conditions of the society, in addition to natural environment of the local area.

Keywords: training, development, motif, batik, designer.

1 INTRODUCTION

Indonesian batik has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) of the United Nations (UN) as a world non-border heritage on October 2, 2009. Such recognition claims batik to meet 3 requirements of the 5 intangible cultural domains, among others: (1) oral tradition and expression, including language as the vehicle of the intangible cultural heritage, (2) social practices, ritual, and festival events, and (3) traditional craftsmanship [1].

Batik is one of the Indonesia's export commodities. The value of Indonesian batik exports to foreign countries over the past four years has always been increasing. In 2011 the value of batik exports amounted to 43.96 million US dollars, in 2012 the exports rose to 46.16 million US dollars, in 2013 the value of batik exports rose again to 47.54 million US dollars and in 2014 rose again to 48.97 million US dollars [2].

In Indonesia, the business world is dominated by micro, small and medium enterprises (UMKM). In 2012 there are 99.99% MSMEs, and they are able to absorb the workforce as much as 97.22% [3]. Similarly, batik business is also dominated by micro, small and medium enterprises, i.e., Dewi Ratih's batik business in Sragen regency, Central Java province, although her business is considered small scale (Republic of Indonesia, 2008) but it has about 200 employees or craftsmen and 88% of them are local and home craftsmen. Similarly nDerbolo, batik business in Sragen regency has about 100 employees and 85% are home batik craftsmen [4].

One of the most facing problems by batik industries in Indonesia is minimum number of professional motifs designers [5]. Normally, batik designers are professionals of old ages, while young designers tend to having lack of ability in exploring creativity; they are just able to move the master motifs

on fabrics. This condition apparently happening due to low wage offered for designers, this generally occurs in the regeneration of designers in Batik industry, one of which occurs in Yogyakarta region [6]. In addition, motif designers in general do not have educational background on their design motifs. The wage for designer motifs in mass amounted to Rp 3.000 s.d. Rp 7.500, - per piece of cloth, surely it depends on levels of motif difficulty. Minimum wage agreed in Sragen regency, in 2013 amounted to Rp 864.000, - (information retrieved from Central Java Governor, SK No. 561.4/58/2012). The amount of batik craftsmen wage above the UMK (district minimum wage) is usually the main dye batik craftsmen, which is Rp 50.000 x 25 per-25 working days = Rp 1.250.000.

Batik is a creative product manufactured by local society [7, 8] and the batik design motif is one of the dominant factors in increasing the selling value of batik products. Thus, to increase selling value of batik products, there should be improvement made in term of the motifs design quality, in addition to improvement on the quality of motifs, which certainly requires focus on training design development motif for the designers. In addition, design training will improve the designer's skill, creativity, design and motif quality [9]. While the quality of the produced motifs highly integrated with the wage rate, for that reason training will increase the designer's wage [10].

Creative ideas, according to Kaufman [11] should inevitably meet three conditions, namely having different ideas, new and innovative; should be highly qualified, and appropriate to the task or relevant. The process of making batik, especially batik tulis (hand-written batik) is rich with the craftsmen's high senses of creativity. To create qualified batik products, the crafters' creativity should be grown in accordance with their respective characters. In a way to cultivate the artisans' creativity, it can be pursued in two ways, according to Rogers & Munandar [12, 13] is by creating both psychological security and psychological freedom. Psychological security means that produced creative products should be accepted as they are, there is no need further evaluation process which suppress or cause threat effects to the artisans. Psychological freedom means that the craftsmen are given the freedom to do their creativity during the batik making process.

Frese, et al [14] in a previous study revealed how important to initiate coaching to business owners to empower community resources and maintain the existence of SMEs in the midst of the influence of globalization which has extended to the industrialization and economic sectors. In his study, there was no specific mention the type of business in the training process because of the heterogeneity of participants. Hidayat, et al [15] explained in their research study that skills training can encourage product quality design and motif

development at PT. Batik Trusmi Cirebon. This study focused on improving quality in limited liability companies, not on Small Business.

Some previous researchs only focused on the importance of conducting training to business owners in empowering community resources and maintaining the existence of SMEs. In addition, another previous researchs only focused on skills training to encourage product quality in the design and motives of limited liability companies. The novelty of this research was focused on training models for motifs design development for designers in small business.

2 REVIEW OF RELATED LITERATURE

2.1 Training

Training is as an addition of skills, knowledge or attitudes to improve performance in carrying out the work [16]. According to Leonard Nadler & Zeace Nadler [17], training is an activity designed to improve the ability of employees in performing a particular task or job that must be done immediately. According to Gilley and Egglund [18], training is a lesson learned to improve today's work-related skills. In line with this understanding, Hickerson and Middleton [19] define training as a learning process designed to improve the performance of people in doing the work. Training is a centralized activity to improve the ability of employees by increasing their knowledge and operational skills in running a job.

Thus, the definition of training in this study refers to the learning activities consciously in the self design of batik motifs that have the potential in improving the ability of knowledge, operational skills and their attitude in drawing (making batik) in order to produce qualified batik motifs and in the maximum amount.

Training on batik motif design development, as a system, consists of sub-system which includes input, process, output and outcome. Instrumental input, are all the instruments required in the training implementation process. These instruments include facilitators, training objectives, training materials, training media, training methods, training models, resources and evaluation systems. Input environment is the environment where training, natural environment resources, social environment resources, cultural environment, value system and the environment from which the trainee resides. Process, is the whole training implementation activities. Output / outcome is a change in the behavior of the participants of the exercise which include changes in knowledge, skills and attitudes. Outcome / impact is the impact of training activities, can be the improvement of motif quality, increasing the number of batik motifs and increasing the wages of designers.

There are several introduced models in training to design, five models of which are:

1. ADDIE (Analysis, Design, Development, Implementation and Evaluation) model,
2. ASSURE model (Analyze learner, State objective, Select media and material, Utilize material, Require performance learners, Evaluation / revise),
3. Morrison model, Ross and Kemp,
4. Dick and Carey model, and
5. Job skill training model by Louis Genci.

The ADDIE training model consists of five components, namely analysis, design, development, implementation and evaluation.

The ASSURE training model is a model formulated for teaching and learning activities. This model consists of six steps, namely analysis learner, stating objectives, select instructional method of media and materials, utilize media and materials, require learner response, and evaluate and revise.

The training model of Morrison, Ross and Kemp focuses on problem identification, analysis of participant characteristics, subject identification and task analysis, stating the training objectives to the training participants, sorting the contents in each training unit, designing the training strategies in order that each trainee can comprehensively master the material, and methods of delivery, developing evaluation tools, and selecting sources which further support learning activities in training.

Dick and Carey's training model is a result oriented and system one of procedural design model, which, so that by applying this model will produce learning materials that can be used to improve the quality of learning and applying the systematic steps. The steps of this model begin by identifying the training objectives, analyzing the training, identifying the input behavior and characteristics of the students, formulating the performance objectives, developing the benchmark reference tests, developing learning strategies, developing and selecting training materials, designing and executing formative evaluations, revising the training materials, and designing and implementing summative evaluations.

The training skill for the job model developed by Louis Genci includes four steps: reviewing the reasons and establishing an exercise program, designing the execution stage, selecting an effective presentation, and implementing and assessing the outcome of the exercise. The developed training model is more relevant to the skills training model. The model developed was assessed by the participants' needs and in designing the program added the required facilities and infrastructure required by the participants.

Suminar, et al [20] in previous studies have examined the empowerment of the Samin Tribe

in economic improvement through batik training, although it is not specifically explained procedurally the stages in the training process. Ariefianto [21] said that in increasing impulsive offerings on the commodity of Batik, training was held by CLC Handayani for women craftsmen from Kemirian Tamanan Bondowoso. In this study focused on the role of CLC Handayani compared to the procedural training conducted.

2.2 Theory of behavioral learning

The batik motif design training development is proposed into a bottom-up manner, among others, based on the designers actual needs, the level of design knowledge, the condition of both facilities and infrastructure owned and used by the designers, the socio-cultural environment, and local natural environment. The structured training of batik motif designers is in line with the theory of people-centered development, in which a development should be oriented to improving human life' quality, which should not only rely on the economic growth through the market and strengthening the state [22]. The concept of people-centered development views people's creative initiative as the main development resource and views the material and spiritual well-being as the goal to be achieved through undergoing a development process.

The design development training is a typical learning which engages a lot of skills, so it includes motoric learning. Motoric learning is a learning process referring to the dimension of motion; learning is manifested through muscular responses expressed in body movements or specific body parts [23]. The motoric elements of skills include physical abilities, mental abilities and emotional abilities. Physical abilities include strength, endurance, agility, flexibility and sensory acuity. The ability of the mental function provides the desired movement of motion to the body's motoric system. Mental abilities include the ability to understand the decided movements, to understand the stimulus, to make decisions, to understand the spatial relationships, to assess moving objects, to assess the rhythm, to assess the movements of the past and to understand the mechanics of motion. Emotional ability is one factor supporting the occurrence of effective and efficient movement. There are several affecting factors to the motoric learning process, i.e. individual, environment, equipment or facility and learning facilitators.

There are two basic theories of learning, which is the Behaviorism (Watson, Thorndike, Pavlov, Skinner, & Hull) and the theory of Cognitivism (Gestalt, Piaget, & Norman). Each of these learning theories has implications for psychomotor learning such as design development training. Behaviorism is a theory of behavior changes as a result of experience. Behaviorism views individual only from his/her side of physical phenomena and

ignores the mental aspects. The characteristic of this theory is to give priority to the elements and small parts, mechanistic like machine, emphasizing the role of environment, emphasizing the exercises, emphasizing reinforcement and emphasizing the mechanism of learning results.

Behavioral learning theory includes respondent learning, learning contingency, learning operant and observational learning. Skinner's operant conditioning theory of learning, focused on the relationship between behavior and its consequences, is the use of unpleasant and unpleasant consequences to change behavior. If a person's behavior is immediately followed by pleasant consequences, the person will, therefore, engage in that behavior more often. Thorndike's law of effect learning theory suggests that if an action is followed by a satisfactory change in the environment, it is likely to be repeated in similar situations and getting increased. On the contrary, if a behavior is followed by an unsatisfactory change in the environment, the likelihood of the behavior being repeated decreases. Thus one's behavior at some point plays an important role in determining the person's succeeding behavior. The implications of behaviorism theory in design development training, that is, good motor skills can be achieved by repetitive exercise, the participants are given a chance to try and fail, the participants are empowered, motivated and encouraged, and the evaluation on the results of exercise relies on the appearing products which consider the psychological aspect.

Mohan [24] in a Research Report conducted on Behavioral Learning Theory stated that the pattern of skills can be formed through training conducted, in this context through Coaching & Mentoring (C&M) as instructors in the development of motor learning. This study has not been in depth how the skills in producing batik products can be formed. In addition, in previous studies, Kumar, et al [25] explained that the skills of a skill can be achieved by habituation, such as human motor skills in biting and swallowing Gua Zi, will reflexively do so because of the habituation process.

2.3 Adult learning method

Based on characteristics of the studied participants, learning can be divided into two, namely learning for adults (andragogy) and learning for children (pedagogy). The definition of adults, in the context of designing of these motifs, is socially and psychologically mature, i.e. individuals who have had social roles such as job roles, husband-wife roles, parent roles, etc., in addition to being able to direct themselves like making their own decisions [26]. According to Mujiman [27], adult learning is built on four assumptions, namely:

1. Adults direct their own learning objectives,

2. Knowledge has been a source of learning for further learning,
3. Adults learn after he himself wants learning, learning activities were done to meet their life needs, and
4. Adults learn because they seek competence to meet their higher needs, such as the needs of potential self-development, they immediately feel the results of learning, what is learned should at least be usable.

According to Uno [26], the concept of adult learning is a non-authoritarian, more informal, lesson-oriented lesson that is generally aimed at finding understanding of experience and/or thought-seeking in order to formulate standard behaviors. Five keys to successful teaching of adults, namely:

1. Adult learning activities should be relevant to the needs and interests of participants learn, so as to provide satisfaction;
2. The orientation of an adult in learning is centered on his life, so the arrangement of learning should be relevant to his or her life situation;
3. Experience is the most important learning resource for adult learning process, hence the learning method is experience analysis;
4. Adults have a deep need to be self-regulating individuals. Thus, the teachers' role is more as a facilitator than as a transfer of knowledge or experience to the learners. It is suggested that the lecturer should be able to provide an evaluation of what the learners agree on;
5. There is a difference of personality between each individual participant learn, which is caused by the difference of age, educational background, social status, etc.

The use of a particular type of learning method in the training is largely determined by the learning objectives, the characteristics of the participants, the learning aids available, the state of the learning facility, the time available, the training venue, and so forth. Whichever method is chosen should be able to create a fun training atmosphere, be able to develop self-learning motivation. Some of the learning methods commonly used in the training include: lecturing methods, individual assignments, group assignments, demonstrations, class discussions, and panel discussions, in addition to simulation methods, games and comparative studies [26].

Lynne M. Celli & Nicholas D. Young [28] suggested that adult learning methods or andragogy have different ways of learning, where adult learning will be more effective through active experimentation, concrete, reflective experiences and parts of learning with auditory, visual and kinesthetic. This study does not specifically explain design skills training.

2.4 Designing process

According to Clipson, batik motif is part of textile; hence the development process of designing batik motif can be studied through textile design process theory [29]. The motif design process theory includes four activities, among others the problem identification, planning analysis of production, creative process and production process (Figure 1).

At the process of designing a textile, especially batik motif, the first step to be done is the preparation to identifying the problems in regard of designing the motifs; on how sort of design can meet the needs of a targeted community. In the world of small and medium scale batik industries, such problems identification mainly observed by businessmen or skippers. The reason is, in marketing batik the skipper is the individual who would face consumers directly, so skipper understand the true tastes of consumers with various backgrounds. The results of the identification of motif problems undertaken by the skipper are then submitted to the designers.

The second stage is the stage of production planning analysis. In production planning, the industry aspect focuses on paying attention to potential customers such as potential users, consumer purchasing power, competition with other products, and so forth. While from the perspective of the environment it should be noted the social aspects of society, community culture, the economic

levels of community, in addition to emerging technologies. On the basis of such mentioned steps, it leads to compiling the initial idea of motif design.

The third stage is the stage of the creative process. According to Tabrani [30], the creative process begins with the stage of the development of ideas, namely what happens until the maturation of an idea. This is followed by the stage of implementation, i.e. follow-up phase of the idea that includes eight stages namely: preparation, material gathering, empathy, incubation, hatching, external aspects of implementation, integral aspects of implementation and the highest level of creation. All levels of the execution phase are not always consecutive, but may jump to each other, change their order.

Creative products according to Besemer and Treffinger [5] are classifiable into three categories: 1) novelty, 2) resolution and 3) elaboration and synthesis. Creative products on "batik design" are produced by employers and their employees through four stages of the creative process, namely: preparation, incubation, illumination or inspiration and verification or elaboration [9, 10].

The fourth stage, the production process is a process of drawing motif design on the paper, the transfer of motif images on the media cloth, cap or screen. It is adapted to the technique used. The next process of batik making is coloring process.

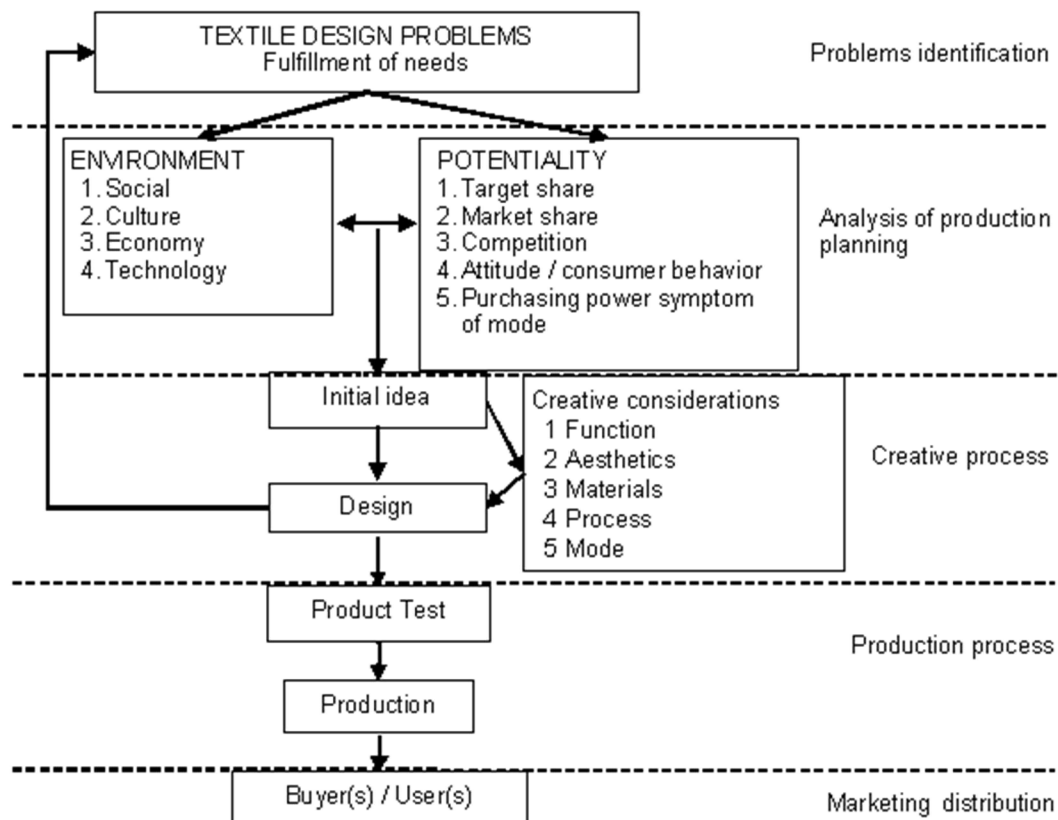


Figure1 Clipson's textile design process [29]

According to Rizali [31], several important factors in designing process towards industrial products is usability (useable or not), producability (marketable), aesthetics (showing aesthetic appeal), profitability and reflects a social impact. In designing a product, there are several aspects which deserve consideration, among others; functional, technical, ergonomic, economical, environment, social culture, and visual aesthetics aspects.

2.5 Batik motif theory

Batik is a *wastra* or cloth that is made traditionally and is mainly used in traditional dimensions of a variety of ornamental patterns that make use of dye technique with the night batik 'candle wax' as a material of color barrier [31]. Katura [32] states that batik is a work of art on cloth that uses the technique of staining that uses night / wax heat as the color barrier. Minister of Manpower and Transmigration through *Standar Kompetensi Kerja Nasional Indonesia* (SKKNI) 'Indonesian National Competency Standards' 314 of 2013, states that batik is Indonesian textile whose motif is made by dyeing technique. In the process of making, batik using *malam* (hot wax) as a color barrier attached by using canting and or stamp tool. Thus, a *wastra* or cloth may be called batik when it contains at least three basic elements, namely: (1) obstacle technique using *malam* or hot wax as a color barrier; (2) how to embed or incise the candle using canting and/or stamp, and (3) patterns that vary in typical batik. In the development of the process of batik to date, based on the technique, batik can be divided into three, namely batik tulis, batik cap and batik combination of both technique.

Motifs or patterns are frame images that embody batik as a whole [33]. Indonesian batik decoration pattern is quite diverse. Hoop has documented the ornamental designs of Indonesia in the form of visual in a book which can illustrate a picture of batik motifs under today's development. Batik patterns or Indonesian batik motifs have been classified in several classes. Pringadie [34] classifies batik motifs into two, namely geometric motifs and cement motifs, while geometric motifs include *banji*, *ceplok*, *ganggong*, *kawung*, woven, and machete motifs. Tirtamidjaja [35] distinguishes batik motifs into two, namely geometric motifs and nongeometric motifs. Susanto and Hamzuri [36, 37], classify batik motifs based on the composition and forms of decoration into four, namely geometric batik motifs, cement, buketan and modern. Additionally, Roojen [38], distinguishes the motifs into two batik, classic batik motifs and coastal. Classic batik motif includes banji, kawung, ceplok, slash, nitik, plants and animals, cimukiran, and isen. Coastal motifs include Indo-Europe, Chinese coastal batik influences, pattern and style combinations, morning-afternoon batik, Hokokai batik and Cirebon batik.

3 RESEARCH METHODS

This research was a case study in small business of Dewi Ratih batik which consists of 6 motif designers and a skipper, and they are the respondents in this study. Dewi Ratih batik is located in Pilang village, Sragen regency, Central Java province, Indonesia. Batik products were produced the most of the Solo's classical batik motifs through the technique of writing, stamp and the technique of combining the two [39]. The data were collected through observation techniques [40], in-depth interviews [41]. In order to obtain correct data and research results during the data collection process, it was applied the techniques of triangulation on data sources, peer-debriefing, and reviewing key informants, and then the data were analyzed under the flow model [42].

Table 1 Research participants

No	Names	Age [year]	Working period [year]	Education	Information
1	Wartitik	55	-	SMA	Skipper
2	Sutarto	75	23	SD	Designer
3	Darman	71	18	SD	Designer
4	Maryoto	58	13	SD	Designer
5	Mardadi	58	13	SD	Designer
6	Daryono	51	13	SMP	Designer
7	Marsudi	40	6	SMA	Designer

This research was undertaken through qualitative descriptive approach and participative action study. The first stage, qualitative descriptive method is used to explore and compile the draft model of design development training motif for the designer. The collected data concern about conditions of the facilities and infrastructure design including motifs, the process of designing motifs the pattern of working relationship between the designers and skipper, backgrounds of the designers, master, the resulting motif images, the batik product, wage and the wage system, the socio-cultural condition of the society, the natural environment. The data were then analyzed to be drafted into a draft model of motif design development training. The second stage, the method of reviewing the participatory act of the designer and the skipper to test the draft of the model produced in the first stage. The results of the experiment were analyzed and made recommendations, based on the recommendation of the draft revision, then the revised draft was re-tested and then the draft was refined to further enable standardizing model.

4 RESULTS AND DISCUSSION

4.1 The socio-cultural condition and natural environment of the society

This research was conducted in Pilang village, Sragen regency, Central Java province, Indonesia, which is typical rice field area located along the river of Bengawan Solo. Agriculture is the dominant sector which absorbed most workers (56%), while the industrial sector absorbed 6.5% workforce or 38.498 people. Most of the rice fields in the area receive technical irrigation, allowing the area to be planted twice a year. In the rice planting season, the batik craftsmen who have both rice fields and gardens and those who do not normally cultivating other people's rice fields.

The socio-cultural life atmosphere of the community in the environment around the batik center is a traditional agrarian society [37] and people still uphold the culture of mutual help. Almost all of Pilang Village residents embraced Islam [43]. According to batik Rofiah and Mulyani, who actively joined religious activities, informed that: "In the village of Pilang there is a religious gathering (Islam) for housewives and fathers. Religious teachings for fathers, held at citizens' houses alternately twice a week on every Wednesday night, and at mosque on Thursday night".

Problems arising in the design work related to the social and cultural activities of the local community, which includes social activities, customary activities, religious activities, and so forth. The value system that develops around the designing area includes the values shared by the surrounding community, beliefs and superstitious myths held by the community, and knowledge possessed and developed in the community. The people of Java in general and the people of Sragen in particular used to hold traditional ceremonies, such as wedding ceremonies or *mantenan*, upacara *mitoni* or *tingkeban* which is

the ceremony at the first age of 7 months pregnancy, *babaran* or the baby birth ceremony, *selapanan* is a ceremony held at the time baby reaches at the age of 35 days, ceremonial circumcision, and death ceremony.

In the area around the artisans, mutual help activities among residents who are having *gawe* (performing traditional ceremonies) are still running well, for example if there are villagers who have *gawe mantu* (marriage), the neighboring surrounding residents shall help each other. Residents of the women community usually help contributing with materials for the *gawe* such as rice, sugar, oil, cigarettes, and so on. While the people from the men usually provide assistance in the form of energy, such as joining *kajang*, participate in making *tarup*, arranging chairs, and so forth. Teenage-age residents usually help to serve as a *sinoman* 'one who serves dishes to the guests'. At the time there is a resident who is building a house, other people around it also do mutual helping '*sambatan*'. In this case the society among women helped contribute material to the residents who built the house, while the men help the power (splice) to build a house. Thus, at the time part of the people who are stating *gawe*, such as setting up a house, wedding receptions, the birth of babies, *aqiko han*, circumcision, death, and others, batik motif designers proved to prioritize activities to help residents who are in it, they leave the batik activity.

4.2 Motif designers and skipper

Dewi Ratih's batik industry has about 200 artisans, 25 craftsmen working inside the factory and 175 others working outside the factory, and 6 motif designers who all working outside the factory or working at their own homes. The working relationship between the designers and the skipper is direct (Figure 2).

Table 2 Participants and motif picture characters

No	Name	Age [year]	Working period [year]	Educataion	Status / Character image motif
1	Wartitik	55	-	SMA	Skipper / batik entrepreneur
2	Sutarto	75	23	SD	Classical Javanese batik motif, plants, animals, complicated, small, soft, <i>alusan</i> Java classical batik motif, geometric, stripes, <i>alusan</i> /fine
3	Darman	71	18	SD	Classical Javanese batik motif, plants, animals, complicated, small, soft, <i>alusan</i> Java classical batik motif, geometric, stripes, <i>alusan</i>
4	Maryoto	58	13	SD	Large, simple, spread motifs on all fronts, long lines
5	Mardadi	58	13	SD	Spread motif in all fields, repeted
6	Daryono	51	13	SMP	Animal motif, simple
7	Marsudi	40	6	SMA	Geometric, abstract, simple, rough motif

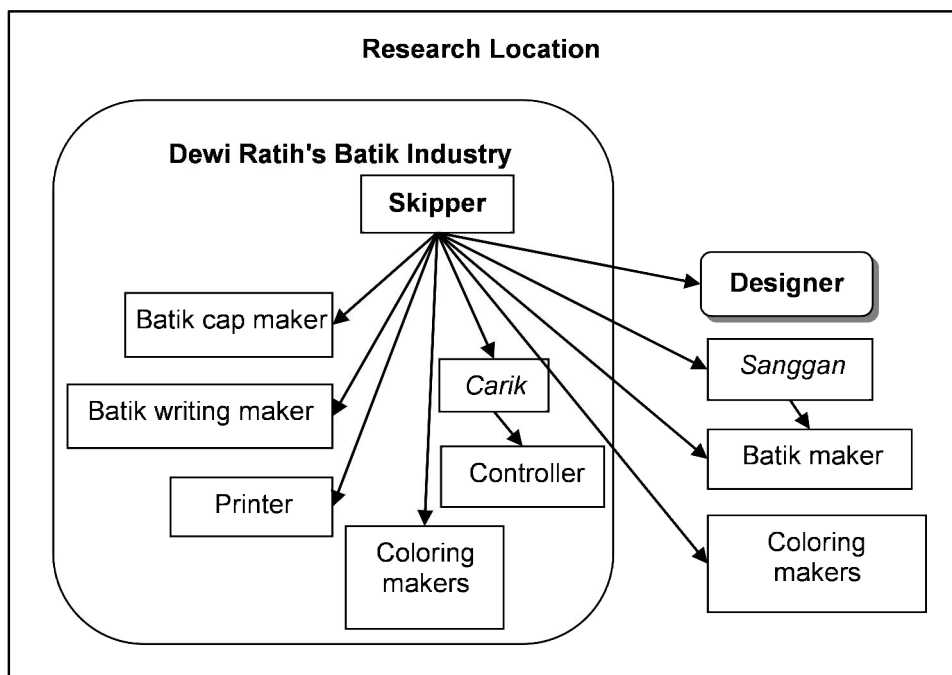


Figure 2 Working relationship between designers with skipper in direct confrontation

Each designer has a different motif picture character, and the skipper is able to distinguish each drawing made by the designer. Motifs made by Sutarto (75 years old) in the form of classical batik motif of Javanese grip, is complicated, shaped small fields, fine, and many use elements of plants and birds, which is made on making a *jarit* pattern. Darman's fine motif reflects many elements of geometric fields, lines, and fine 'alusan'. Darman often makes batik motifs on long-sleeved shirt patterns. Maryoto's motif takes the element of animals made them in simple ways. Daryoto's motifs are large-shaped simple, long lines and spread on all surfaces of the fabric. Mardadi's motif is often repeated and spread on the surface of the fabric. Marsudi motifs are mostly simple abstract shapes made on the pattern of short-sleeved shirts. The six designers of the motif none of which have a formal education background in the field of artistry or in the field of design batik motifs. The formal education level of the designer consists of four people graduating from elementary school (SD), a graduate of junior high school (SMP), and only one graduated from high school (SMA). The youngest designer is 40 years old and the oldest is 75 years old.

4.3 Problems and solutions in design

Batik skipper in this case is a woman whose name is Hj.Wartitik, the business owner of batik Dewi Ratih in Sragen regency. The skipper's role is associated with batik motif designers since her needs concerning the motifs will be served by designers in accordance with their abilities to meet the consumers' needs. To the designers, batik

motifs are normally done at the home of each designer. In addition to dealing with the designer, skipper is also associated directly with other craftsmen such as *sanggan*, batik tulis makers, batik cap makers, printed batik maker and coloring makers.

The primary task of designing the motif is to draw batik motifs on white cloth in accordance with the skipper's expected designing plan. The definition of batik motif falls into two, the first - batik motif already exists, designers just move the motif from paper to fabric by reducing or adding a certain motif. Secondly, the motifs given by the skipper to the designer are still in abstract concepts and rough description forms, then the designer visualizes the image. As long as the designer develops the motif pictures, there is a discussion between designer and skipper until the motif is approved by the skipper.

The work of drawing batik motif is done in the picture room at the designer's house by using the drawing table. The drawing table is usually placed near a glass window with curtains fitted to illuminate the sunlight. On the table the picture also mounted the lights. The size of the drawing table used by various designers is: 120x100 cm, 120x170 cm and 120x150 cm.

Batik motifs are exemplified by designers to be drawn on various fabrics, among others (1) in the form of colored batik cloth products, (2) batik motif image only in the contour of black lines on tracing paper, and (3) batik motif picture on color print media. It means that artisan of the image is being exposed to examples of "batik

motif models", for that reason he can directly see the visual model being constructed. The designer observes batik motif model samples, while listening to the oral instruction of the skipper about the main part of the motif which should be drawn and developed on the fabric.

During the process of developing the motif design, interpersonal dialogue takes place personally between master and designer(s). The designers are given familial directions, given the freedom to be creative, develop the supporting motifs in accordance with the basic motifs drawn. Based on the example of batik motif model, the designer develops batik motif design on tracing paper media with actual size (70x110 cm). If the created motif applied to fabric shirt patterned, then the drawn motif remains only on the back. Such motifs development can be undertaken by enlarging or minimizing certain motifs, adding or reducing certain motifs. Draft drawing the batik motif and let the skipper appreciated which then to be perfected by the designer to produce a master motif.

The master motif was then moved over the fabric as it is, or further developed into motifs patterned fabric, such as the left and right chest, left and right arm, collar, cuff and the pocket. Making a batik motif ruptured pattern on the fabric, done by means of back motif part with carbon fabric. To produce good quality scratched images and the lines which show high precision, the motif picture undertaken each piece of fabric or two pieces of fabric. To produce more scratched images at the same time, the drawing motif was undertaken by applying the technique of *ngemblak* on some pieces of the fabric with carbon cloth. Scratches made on cotton fabric, every stratch of the fabric is caught 5 strands, while scratches on the silk fabric made by non-machine loom (ATBM) then the cloth is only doubled in 2 strands. Whatever the motif form, the produced images by the designer has never been reproached by the skipper, it is worried that it can lead the designer to feel afraid of being creative. For skipper, the important is the produced batik motif is acceptable by consumer society.

Problems faced by the designer(s) related to the process of drawing motifs on white colored fabric is as follows: The first problem is - the drawing table used by motif designer was sized 100x120 cm with a flat surface, thus this shape can be set the slope. If the table is used to draw patternless motifs, the size of the table becomes less widespread. The second problem - drawing batik motif on cloth patterned shirts is harder than drawing on an un patterned fabric. Picture motif on cloth patterned shirt, motifs must be *sanggit* (well and tidy stretch patterned) when fabric was made into a shirt. To draw a *sanggit* motif, it is much easier to do on a fabric little by little. In case a fabric was doubled, then the results of the images motif can be shifted, thus the motif can no longer be a *sanggit*

(less effective). In fact, to increase the products quantity (efficient) one way the fabric must be double. Third problem - drawing motif on silk fabric is harder than that the cotton fabric. To draw a motif on silk fabric it should be done on one by one fabric, if it was forced to be doubled then it should be a maximum of 2 fabrics only. The fourth problem - drawing new motifs that have not been understood the meaning more difficult than the usual motifs drawn. In general, the designer of the learning motif is autodidact, so they do not understand the meaning of the motif in which she/he draws. The designer develops motifs based only on the example of the batik motif model a designer is facing, given by the skipper. The fifth problem is that the light-dark volume temperature of drawing room facility is unadjustable. Good motif picture space has a low temperature so that the carbon fabric to be used for copying or motion does not dry quickly, otherwise the image space should be well lit.

On the basis of such elaborated problems, there are generated three solutions, among others is to artificially make up the working facilities, conduct training and working pattern relationships. The first solution, on the aspect of the means, is that the drawing table used to draw a patterned fabric should be 100x120 cm in size, while the table for drawing a patternless motif should have the same surface area as the size of the drawn fabric (115x250 cm). Desk surfaces are made using translucent glass material under which lamps are given. The purpose of making the lamp available is so that the image of the master motif is absorbed or drawn, it can still be seen even though the cloth is being doubled. By using the table, the amount of fabric drawn more and at the same time it enables the motifs pattern were drawn in *sanggit*. The drawing room facility needs to be made up artificially with windows and curtains, on top of a glass towel, and lights. At the time of drawing, the air temperature should be kept too hot then the curtains can be closed, and vice versa, when the cloudy room is less bright then the lights can be turned on. The second solution, the aspect on the training materials, the designer is given a well-training on making motifs patterns, understanding the motifs of classical batik along with their various areas of origin, to understand the meaning of the drawn motifs are often done, and trained techniques to draw motifs to fit with *sanggit* pattern. The third solution is on the aspect of employment relationship, namely the skipper: (1) he/she should provide a batik motif in accordance with the designer(s)' competence and interests. If the job given is a new introduced motif, the skipper should explain and give a clear description of the motif; (2) the skipper is required to encourage the development of the artist's creativity by providing a psychological security [11].

Psychological freedom means that the designer is given a freedom in terms of developing the motif concepts instructed by skipper. Psychological security means that the skipper should not easily show his/her criticism on the motif images embodiment produced by the designer, and he/her should not be angry at the designer.

4.4 Training models

On the basis of such elaborated research results was proposed the model of training on batik motif design development for designers in small businesses, which can be developed through four stages: (1) designing needs analysis, (2) training program planning, (3) working infrastructure planning and (4) implementation of training activities. The training phase is in accordance with model of skill training for the job. The stages of training model design of home batik motifs are shown in Figure 3.

4.4.1 Analysis of problems in designing work

This first phase is to explore and analyze the designers' needs or problems. The information is obtained through setting up interview and using the technique of observation. The analysis was focused on issues related to the designing process of a work, such as conditions of given facilities and their availability, and which of the facilities should be provided at the working place, the competence level of the designer related to the work, the material done, the pattern of working relationship or the learning system between the designer with the skipper, the amount of rewards or wages, and the produced works. The analyzing the designers' facing problems with regard to their family background, social environment condition of society culture, and socio-natural environmental

circumstances. Based on these analyzes, then it is drawn up conclusions about the real needs of craftsmen in terms of the work of drawing motif designs.

4.4.2 Program planning and equipment manufacture

Based on the aforementioned analysis results of problems in design, the training plan programs and work infrastructure facilities were compiled. Aspects of the training program formulated cover the determination of training objectives, training materials, the creation of training media, training methods, preparation of management pattern between designer(s) and the skipper, the determination of place and time of training.

In relation to designers of the batik design, training objectives should refer to the needs of the designer, i.e. the designer has his/her own ability in understanding the technique of drawing on fabrics. These individuals are able to understand the meaning of classical batik motifs, able to visualize the design concept instructed by skipper and able to create a well-decorated pattern which is termed as *sanggit* on fabric patterned shirts and jarit-shirts patterned.

Training materials are designed based on the targeted goals. Training materials for the designer include:

- 1) drawing techniques on various types of fabrics (*mori* / cotton, silk, dolby);
- 2) pictures of classical batik motifs and their meanings;
- 3) types of batik motif patterns;
- 4) techniques of developing design concepts; and
- 5) techniques of drawing the *sanggit* motifs on patterned fabrics.

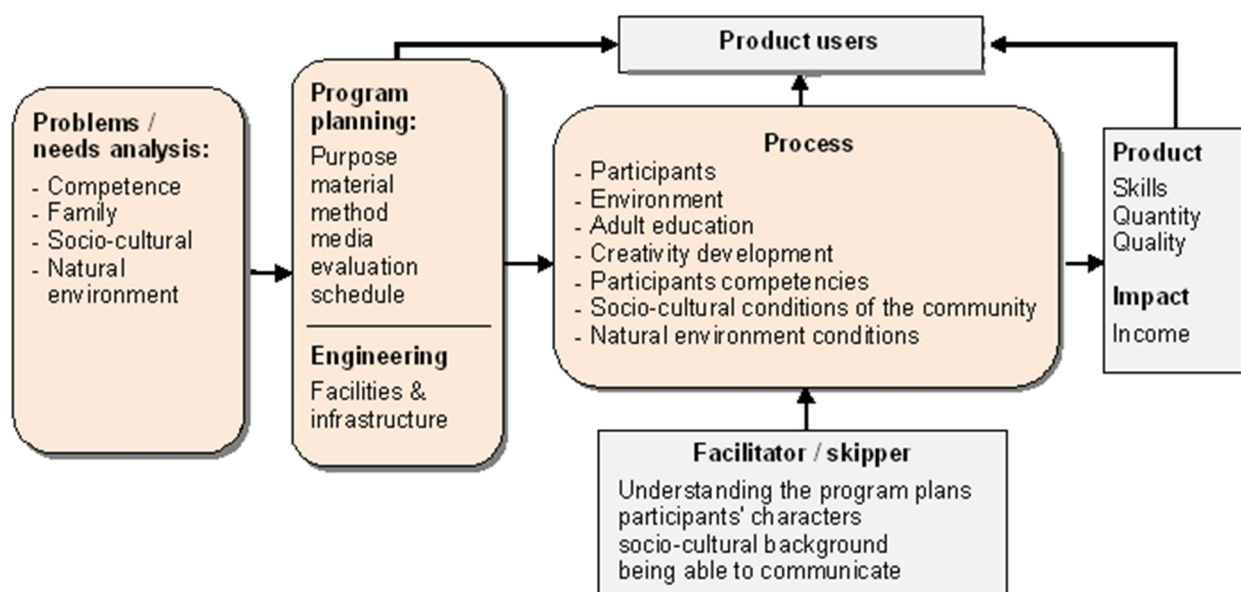


Figure 3 Training model for batik motif designers

The training method is chosen according to the designer(s)' qualifications, i.e. they should have experienced adult education, that the delivery of material is done individually according to the level of the designer's capability. Batik motif design training is a learning behavior, for that reason, the learning should be repeated and the designers should get the opportunity to try and fail [44].

During the process of delivering the material, the concrete learning media is being exploited; visual that contains elements of dots, lines, fields, colors, objects and symbols [45]. In line of that, the designer needs more visual stimulus rather than the audio or motion stimulus. In this training, the instructional media used include examples of classic batik motifs, examples of *sanggit* motifs, examples of various patterns of batik motifs, examples of batik motifs that have 3 dimensions and examples of *isen-isen* motifs. The evaluation system is designed for all phases, ranging from evaluation of design problem analysis, program planning evaluation, program implementation evaluation, to evaluation of training outcomes. Training schedule is selected at the right time according to designer condition and at designer place room or skipper.

Working facilities and design infrastructure such as drawing room and drawing table need to be ergonomically designed and prepared in training. The drawing room is designed to be clean enough, sufficient lighting lights and sunlight, not too hot, and having sufficient ventilation. When is the rainy season, the weather is usually often cloudy, so the drawing space needs lighting lamps. Conversely, in the dry season, the weather is subsequently very hot, it can cause the carbon used to draw dries quickly, therefore, it is highly suggested that the room temperature needs to be conditioned into more cold. The wide of drawing table should be 120, 150 or 250 cm in accordance with the regular type of the drawn motifs, while the height of the table is adjusted according to the height of the designer. Thus the required image space size is about 200x300 cm. If the designer often draws a motif by tracing the master motif, then the table top should be clear glass.

4.4.3 Training proces

Training implementation should as much as possible refer to these aspects:

- it is undertaken at the designing environment in which the designer works,
- the training refers to adult education,
- it is directed at the development of creativity of the designer,
- the material is adjusted to the level of the designer's ability,
- the training is adjusted on socio-cultural, and natural-environmental conditions of the society.

Most of the designers are lowly educated (Primary School), usually they feel more comfortable when doing their own learning environment and thus the training should be in the designers' environment. The designers are adults, both legally, psychologically and socially 20 to 60 years old [26]. Adult learning process is influenced by physiological internal factors such as hearing, vision, physical condition as well as psychological factors such as need, intelligence, motivation, attention, thinking, remembering and forgetting. It is also influenced by external factors such as the natural environment, social and presentation systems [46]. Thus, the training process should be adjusted to the needs, level of ability and based on experience. Batik is a creative product, produced through creative process of the designers. Thus the training process should be able to living up the designers' spirit of creativity, namely through the provision of both psychological freedom and psychological security [11, 12].

Batik motifs training is a matter if learning behavior and a well-maintained motoric skill can be achieved by regular practice, participants are given probability of trial and error, they are motivated and rewards accordint to standardized evaluation on such tangible products [47, 48]. According to the theory of learning, Skinner's behavior-operant conditioning [23, 46, 48], learning is focused on the relationship between behavior and its consequences. This is in accordance with the findings, that when the image of batik motif produced by the designer is accepted by the market, then the designer is flattered by the skipper and he will be rewarded with an incentive. Thus, this leads into pleasant consequences for the designers; they are driven into having more earnest and more creative developing batik motifs. Likewise, according to Thorndike's theory of learning [23, 48, ,50], if an action, like drawing a batik motif, is followed by a satisfactory change in the environment (the resulting batik motifs by the market), then the action of drawing batik motifs on that sense will be repeated again in similar situations and frequency will getting more increased. The technical methodology used in batik motifs training is dialogue, inter-personal four facilitator-participants, in a kinship to discuss the relevant batik motifs to be developed, then followed by the assignment. The method of dialogue between entrepreneurs and image artists includes Newcomb's communications model [48], in symmetrical inter-personal communication 2 people communicating ideas or concepts (batik motif). Methods of demonstration are undertaken to revise draft-draft drawing batik motif produced by the designer [26].

Designers are social beings; they have a need to affiliate with their fellow human beings around them. Space for affiliation in the community, among others, Islamic religious teaching activities and

ceremonial activities (marriage, circumcision, training, and others). In addition, the designer's life is in the environment of traditional agrarian society, which means that in the wet season and steady season, the community mutual helping (*gotong royong*) at rice fields well-preserved. Thus, the training process should be adjusted to the socio-cultural conditions of the natural environment.

Facilitator(s) in batik motif training for designers played by the skipper or other party. In performing their working duties, skipper should understand the plan of the training program such as preparing for the motif design, designing the use or application of the motif, designing the batik product, preparing the material, managing the program, designing the evaluation system, monitoring and evaluating the drawing, and maintaining the continuity of the program such as depositing the proceeds to the skipper and or to withdraw the works from the skipper [49, 50]. Similarly, the skipper should also be skillfully in managing communication with the designer, having the attitude and knowledge that can be accepted by the designer, and understood the socio-cultural characteristics of the local community [50, 51], and has a good relationship with the designers [52].

Thus, for the training process to run smoothly, the facilitator(s) should have at least four determining skills, among others mastering the program planning, understanding the characteristics and background of the designer(s), understanding the socio-cultural background of the community, and being able to set up communication.

4.4.4 Products and impact

The training process will produce products in the form of designers' improving skills, because of that the resulting product is increased and more qualified which satisfying the consumers' expectation. Since the designer wage rate depends on both quantity and quality of the drawing products, then if the resulting image product increases and, more qualified, these will have an impact on the increase of income (Table 3).

The development of training models and the design of batik motifs requires a validation process before being applied to be produced and deployed to the market. The following is a validation table for developing the training model and design of batik motifs by Prof. Dr. Nanang Rizali, MSD, who is an expert in textile design.

Table 3 Preliminary and development motifs design



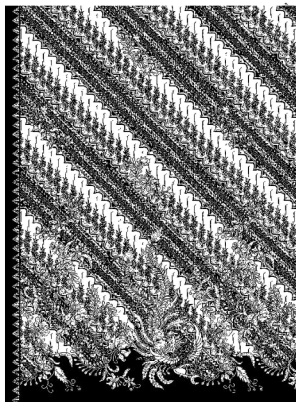

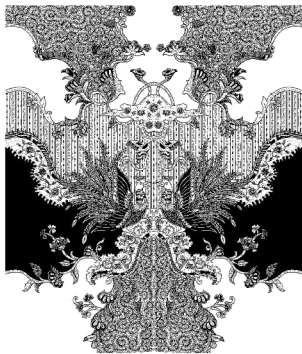
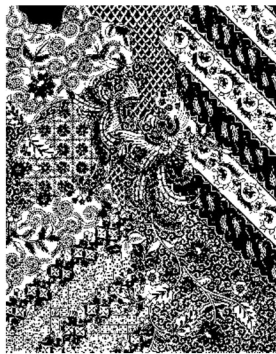
No.	Preliminary motifs design	Motifs design development	
1.	 <p data-bbox="225 1559 569 1581">Preliminary motif design of <i>jarit</i> cloth</p>	 <p data-bbox="598 1559 997 1581">Motif 1 <i>Buketan</i> motif design for <i>jarit</i> cloth</p>	 <p data-bbox="1035 1559 1423 1581">Motif 2 <i>Parang</i> motif design for <i>jarit</i> cloth</p>
2.	 <p data-bbox="225 1957 569 1980">Preliminary motif design for apparel</p>	 <p data-bbox="598 1957 997 1980">Motif 3 Symmetrical motif design for apparel</p>	 <p data-bbox="1023 1957 1437 1980">Motif 4 Asymmetric motif design for apparel</p>

Table 4 Validation model and design development

No.	Design	Training model assessment	Design assessment					Total
			Design principal	Aesthetic	Versatile use	Uniqueness	Originality	
1	Motif 1	This training model is very good because it can elaborate four components: 1) designing needs analysis, 2) training program planning, 3) working infrastructure planning and 4) implementation of training activities.	4	3	4	4	4	19
2	Motif 2		4	4	3	4	4	19
3	Motif 3		4	3	4	3	4	18
4	Motif 4		4	4	3	4	4	19

The assessment is measured by 5 scales (1 = very poor quality, 2 = poor, 3 = adequately, 4 = good, 5 = very good). The suggestion of the validator is that the designer must be careful in making the connection motif. The validation result showed that the training model and design motif development was eligible to be applied and did not need any improvement.

5 CONCLUSION

Based on the results and discussions, we can derive a conclusion that the model of batik design training to improve product quality and income is determined by several factors that are related as a system. These factors include raw inputs, input instruments, users, facilitators and processes. While the training model consists of four stages namely, begins by analyzing the problems faced by the designers, planning the program (including training objectives, materials, methods, media, evaluation and schedules), planning and engineering facilities needed in the training, and implementing training actions from the facilitator to the trainees.

The first stage, the design problems analysis, includes the background of competence, facilities and infrastructure used, the drawing process, the working relationship patterns between designers and skipper, the wage system, the designers' family background, socio-cultural environment of the local community and natural environmental conditions. The second stage is planning of the training program, which includes the determination of training objectives, materials, the making of instructional media, the determination of training methods, evaluation of the training program and the determination of the training schedule. In addition, training is required by the facilitator, which in this case may be played by the skipper or other party. A good facilitator should have four skills, namely mastering program planning, understanding the characteristics of the participants, understanding the socio-cultural background of the community around the participants and being able to communicate with the participants. The third stage, the planning and making of work facilities used by the participants, includes the drawing room and the drawing table. The fourth stage, the implementation of the action, should refer to six aspects consisting of training conducted

in the workplace environment, the training should refer to adult education, and the process should be directed to the development of creativity, synergized based on the competency level of participants, socio-cultural conditions of the community and condition of the local natural environment. The process in question can produce products such as increased skills of participants, increased quantity and improved image quality (*design quality*) of batik motif. Because the wage rate of the craftsmen depends on the quality and quantity of the products produced, the product of the image affects the increase in revenue of the designer.

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