# Batik Design Development Training as an Effort to Empower Business

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### Abstract

This research aimed at formulating the basic principles of batik design development training at small-scale industry. It was conducted at Dewi Ratih small-scale batik industry in Pilang village, Sragen regency, Central Java province, Indonesia. It used the qualitative research method with the embedded single case study approach and involved 20 informants consisting of entrepreneur, draftsmen, batik workers, quality control batik workers, cap batik workers, brok, sanggan, colorists, and governmental officials. The data of the research included places and events of the batik design development at the industry. They were gathered through in-depth interview, observation, and content analysis, and were validated by using data triangulation, technique triangulation, peer debriefing, and key informant review. The data were then analyzed by using the interactive model of analysis. The results show that the basic principles of the batik design development training at Dewi Ratih small-scale batik industry are as follows: (1) the trainees have motivations, needs, and good impressions toward the training; (2) the training is conducted at their workplace; (3) the facilitator is competent, understands the character of the trainees and socio culture of the community, and has good communication skills; and (4) the training process is learning while working, uses the educational approach for the adult learners, develops the creativity of the trainees, and is adjusted to the social and cultural conditions of the community and the resource conditions of the industry. The training is effective when it is not carried out during the paddy-cultivating (paddy planting, harvesting, and post-harvesting) and celebration holding seasons.

Keywords: training, development, design, batik, industry

#### 1. Introduction

Indonesian batik has been acknowledged by UNESCO as intangible world heritage since October 02<sup>nd</sup>, 2009. It is produced by micro-scale, small-scale, medium-scale, and large-scale industries, but it is dominantly developed by small-scale ones. Batik becomes economic activity of community which has positions, potentials, and strategic roles to materialize the structure of national economy. The hand-made batik development is not accompanied with the regeneration of workers in Batik (Hidayat, 2009). At batik industries, the development of (batik) product design is significantly related to the business achievement or development (Oakley, 1985; Zaman, 2011).

One of *the* Indonesian batik producer centers in Indonesia is Sragen regency. It has 85 batik industries, and 29 of which (34%) reside in Pilang village. They consist of 15 *cabut* batik industries, 9 printed batik industries, and 1 *cap* batik industry. Of the 29 industries, Dewi Ratih batik industry is determined as the location of the research for it is the only small-scale batik industry in Pilang village which applies various production process techniques. Besides, Dewi Ratih batik industry employs approximately 200 workers with different skills. Most of them (93%) are females, and have low educational background (86% of them only graduated from Primary School). This industry is located on the bank of Bengawan Solo river and surrounded by farming areas which is rich of water resource, has a tropical climate, and is in the midst of the traditional agrarian community (Weber in Sztompka, 2004).

The empowerment is an effort of improving the life quality of each individual and community in terms of economy or food sufficiency, social prosperity such as education and health, freedom of any kinds of oppression, safety assurance, and protection of human rights sustainably (Mardikanto, 2010). The empowerment of workers according to Maxwell (2005) includes instrumental aspect, that is, an entrepreneur shall provide better information and skills, non-managerially delegates authority to the workers, and satisfies the workers. The empowerment principles according to Dahama and Bhatnagar (in Mardikanto, 2010) include interest and need, low level community organization, variety of cultures, cultural change, cooperation and participation, democracy in the application of science, learning while working, use of appropriate methods, leadership development, well-trained specialist, entire family unit, and satisfaction. The community empowerment principles according to Ife and Frank (2008) include ecology, social justice and human rights, local appreciation, process, and globalization-locality.

The empowerment of the small-scale industry is done through batik design development training. Training is a given learning process to improve the ability related to the current work (Gilley and Eggland, 1991). In this research, the training is delivered by the entrepreneur (facilitator) to the workers (participants) to improve their ability in developing the batik design at Dewi Ratih small-scale industry. The implementation of the training refers to training as a system which includes the components of input, process, product, and impact (Arikunto, 1988). Batik design means designing batik product plan and material, process (technology), product, aesthetic, and function (Rizali, 2006). Batik is a piece of cloths (*wastra*) made traditionally, and used in a traditional dimension with various decorations of certain patterns, and resist-dyeing with wax as color barrier (Doellah, 2002). The design process in this industry refers to the textile design process (Clipson in Rizali, 2006). The design process also considers economic, ergonomic, environmental, social, and cultural aspects (Prasetyowibowo, 1998). It should also take such visual elements into account as point, line, field, space, and color as well as such visual principles as composition, repetition, movement, harmony, unity, and center of attention (Malcolm, 1972).

Thus, the objectives of this research are (1) to describe the profile of Dewi Ratih batik industry in Pilang village, Masaran sub-district, Sragen regency; (2) to understand the batik design development training at Dewi Ratih batik industry; (3) to describe the supporting and inhibiting factors to the batik design development at Dewi Ratih batik industry; and (4) to formulate the basic principles of the batik design development, which can be used as a reference for the batik design development training as an empowerment effort at small-scale batik industries.

#### 2. Research Methodology

This research was conducted at a small-scale batik industry, Dewi Ratih batik industry, residing in Pilang village, Masaran sub-district, Sragen regency, Central Java province. This research used the qualitative research approach with the embedded single case study strategy (Lincoln and Guba in Moleong, 1990; Sutopo, 2002; Yin, 2003; Creswell, 2007). The samples of the research were taken by using purposive sampling, purposive time sampling, and purposive snowball sampling technique. The data sources of the research were 20 respondents comprising two groups, 10 key informants and 10 ordinary informants. The former consisted of entrepreneur, one *carik* (secretary of the entrepreneur), one draftsman, one colorist, one cap batik worker, one quality control batik worker, 2 batik workers, one *brok*, and Head of Pilang village. The events which were explored included the batik motif drafting process, batik-making, and coloring process. The places and physical instruments, which were explored included production tools and facilities both within the area of the industry and in the homes of the workers as well as in the environment of the aforementioned village. The documents and recorded archives which were used in the research included batik motif images, batik products, and administrative records of the workers (Nasution, 1988; Sutopo, 2002; Yin, 2003).

The data of the research were gathered through regular observation technique (Rohidi, 2011) or open-ended observation (Nasution, 1988; Yin, 2003) or passive participatory observation (Spradley, 1980); and unstructured in-depth interviewing (Bogdan & Biklen, 1982; Sutopo, 2002). To improve the validity of the data, multi-data resources were used, and the inter-data evidence chains were maintained (Yin, 2003). To obtain the truthfulness of the research result so that it is verifiable, the data were exposed to data source, technique triangulation, theory triangulation, and peer debriefing with one teaching staff of Fine Arts of the Faculty of Teacher Training and Education, Sebelas Maret University, and key informants (Sugiyono, 2010; Sutopo, 2002). The data were then analyzed by using the pattern matching technique, explanation-making, and, time-series analysis (Yin, 2003), of which the analysis process was done with the interactive model of analysis (Miles and Huberman, 1992).

The research measures as an effort of understanding the implementation of the batik design development training included observation toward the activities of the implementation of the batik design development training, indepth interview with the related parties, and data analysis respectively. The implementation of the training, both each phase and the entire phases was analyzed so as to find the strengths, weaknesses, and opportunities (SWOT) threats, and as well as strategies. Based on the results of the SOWT analysis, the basic principles of the batik operational design development training were then formulated.

#### 3. Research Result and Discussion

#### 3.1 The Profile of Dewi Ratih Small-Scale Batik Industry

Profile is a summary that provides facts of special matters. In relation to industry, the profile means the industrial resources, which include external factors (David, 2009) and internal factors which include human, financial, physical, and informational ones (Griffin, 2004; Sumarni and Soeprihanto, 1999). Dewi Ratih batik industry is located in Pilang village, Masaran sub-district, Sragen regency on the bank of Bengawan Solo river. It is about

20 km to the south-east of Surakarta. The region of Pilang village is 93 m above sea level, has a flat structure, is surrounded by agricultural land, has a tropical climate, has the rainfall of 2,394 mm/year, and is abundant of water. The inhabitants of Pilang village in 2011 were 4,655. Most of them are Moslems, (99.5%), and farm workers and farmers (852 persons or 64 %). In Pilang, there are 29 batik industries. 15 of them (52%) are *cabut* batik industries, 9 (31%) are printed batik industries, 4 (14%) are hand-made batik industries, and 1 (3%) is *cap* batik industry. Most of the community in Pilang village has the knowledge and skills in batik field.

In relation to the design development training, the community resources in the surrounding area of Dewi Ratih batik industry are batik centers, which provide batik fabrics, motif models, and a variety of batiks. The aforementioned batik centers are Klewer batik market of Solo, Danarhadi batik museum, batik galleries, and batik village in Surakarta as well as books on batik.

The human resources of Dewi Ratih batik industry include the entrepreneur or the owner and the workers. The owner of Dewi Ratih batik industry is Wartatik, aged 47 years, born in Pilang, graduate of Senior Secondary School of Economics, Javanese, and Moslem. The entrepreneur as a facilitator in the batik design development training has the competency in the batik design development field. She is able to communicate with workers well (Berlo, 1961), and has a good relation with them (Amudavi et al., 2009). The number of the workers of Dewi Ratih batik industry is approximately 200. They consisted of 1 *carik*, 6 draftsmen, 176 batik workers, 1 cap batik worker, 5 quality control batik workers, 2 indigosol and naphthol colorists, 2 remasol and natural color colorists, 2 printed batik workers, 3 *broks*, and 1 *sanggan*. Most of the employees (186 or 93%) are female. 169 of them are graduates of Primary School, 176 or 88% have other jobs in addition to the one in the industry, and only 24 (12%) merely work in the industry. As many as 122 (61%) of the employees are coordinated by the entrepreneur directly, 78 (39%) workers are coordinated by 2 *obengs*, 3 *broks*, and 1 *sanggan*.

The wage system uses the daily-basis and contract systems. The wage in daily-basis system is administered to the employees once a week on Saturdays, and the wage in contract system is administered as soon as the employees complete and submit their work. The lowest wage in daily-basis system received by a batik worker per month is (Rp15,000 + bonus Rp1,000) x 25 working days = Rp400,000. This wage is much below the minimum wage of Sragen regency, or it is only 49% of the minimum wage of regency 2012. The highest daily wage per month is received by the colorists, that is, Rp50,000 x 25 working days= Rp1,250,000. It is above the minimum wage of regency or 154% of the minimum wage of Sragen regency 2012 amounting to Rp810,000 (Governor of Central Java province, 2011). The employees who work every day are given incentive of which the amount is different from one to another in an attempt motivate their performances (Knowles in Uno, 2011).

The batik motif drafting at Dewi Ratih batik industry is done manually, different from the one suggested by Li et al. (2012), that the use of computer program will support their performances much better. The batik-making with wax is done with hand-made batik and cap batik techniques. The batik coloring is done with dyeing, *colet*, (Susanto, 1980; Doellah, 2002; Honggopuro, 2002) rubbing, and *cabut* techniques. The primary tools used to draft the batik motifs are drawing table, soft-lead pencil of 4B, and carbon cloths. The tools used batik-making are *canting*, pan, kerosene stove, and *gawangan*. The tools used in the coloring process are scale, pail, and coloring table (Doellah, 2002; Hamzuri, 1981). The fabrics used for batik are mori fabric (prima, primissima), silk fabric, (super, ATBM, *twist*, baron), lamen fabric, and dolby fabric. The waxes used are *klowong*, *tembokan*, and paraffin. The coloring substances used are indigosol, naphthol, remasol, pigment, rapid color, and natural color (Susanto, 1980). All of the materials used for batik making are easily obtained.

Batik products produced by Dewi Ratih batik industry are mostly cloths (*jarik*, male sarong, female sarong, shirt, skirt, shawl, and table cover), ready-to-wear-clothes, and batik-made household accessories. The total number of products is 15,300 pieces annually with the amount of Rp2 (two) billion annually so that it belongs to small-scale batik industry (Republic of Indonesia, 2008). The prices of batik vary based on the quality. The lowest quality is cap batik with the price of Rp60,000 (sixty thousand rupiahs) per piece, and the most expensive is baron silk hand-made batik with the price of 800,000 (eight hundred thousand rupiahs) per piece. The batik products are marketed through 10 distributors in Surakarta, Jakarta, Bandung, Yogyakarta, and Semarang. The result of the product sale is used as further working capital.

#### 3.2 The Implementation of Batik Design Development Training

The flow of batik design development at Dewi Ratih batik industry starts with the problem identification and is continued with production planning analysis, creative process, batik motif drafting, batik-making, and coloring (Figure 1). The problem identification and production planning is done by the entrepreneur by considering the market needs, environmental, social, and cultural conditions, and resources of the industry. The production plan arranged by the entrepreneur is visualized by the draftsmen into batik motif drawings on cloths. The cloths with the motif drawings are then controlled by the quality control batik workers. After that, they are given basic colors by the colorists, and then they are exposed to batik-making. After that, they are controlled one more time. Finally, they are exposed to final coloring touch and wax removing. The final product is then evaluated by the

entrepreneur. The result of the evaluation is used as the basis for extending recommendation(s) to the related employees for improvement. The batik design development training includes batik motif drafting, batik-making, and coloring. The trainees are the employees of Dewi Ratih batik industry, namely: draftsmen, batik workers (hand-made batik worker, cap batik worker, quality control batik worker, *obeng, brok*, and *sanggan*), and colorists. The trainees have understood that training is a means of achieving their needs (improving their skills, earning wages, affiliating with others, and having means of self-actualization). The trainees by and large have motivations, needs, and excitements toward the training.

The batik design development training is conducted at the workplace of each trainee such as in the drafting room, batik-making room, and coloring room. During the training, the facilitator actively visits the trainees at their workplace. The facilitator functions as empowerment implementer (Lippit, 1958; Rogers, 1983), has knowledge and skills of batik design development, attitude, and communication skill, understands the social and cultural characteristics of the community very much (Berlo, 1961), has clear training plans and goals (Abidin and Affero, 2012), has a good relation with the trainees (Amudavi e al., 2009), and prepares, manages, monitors, evaluates, and maintains the continuity of the program (Kamil, 2009).

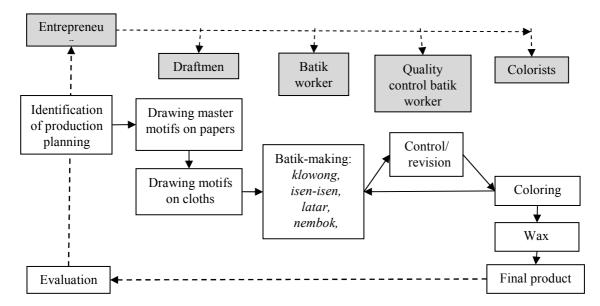


Figure 1. The Flow of Hand-made Batik Design Development at Dewi Ratih Batik Industry

The objective of the research is to enable the trainees to conduct the batik design development according to their duties; they are able to conduct motif drafting, batik-making, and batik coloring. The training materials include batik motif drafting plan, types of *isen-isen* batik, batik-making technique, *colet* coloring technique, determination of colors, composition of colors, and batik coloring technique. The media used in the training are silent visual images such as batik motif drawings; batik models being made, and finished products. Such media meet the trainees' need for "visual stimulus" (Anitah, 2009; Rudy Brezt in Sadiman et al., 2009). The methods employed in the training are interpersonal dialogues, demonstrations, and individual tasks. The evaluation is done toward the training processes (formative) and training products (summative).

The training is conducted when the trainees start to do new jobs or when they encounter work problems. The training refers to the adult education, the trainees' creativity development based on the social and cultural conditions of the community and the resource conditions of the industry. The training is conducted when the workers are less busy, and avoids the paddy planting and celebration-holding seasons.

The training process refers to the "adult education", which is adjusted to the trainees' needs such as the needs for daily basis wage or contract-based wage, the needs for work difficulty level or the types of batik motifs being made, and the absence of the trainees to the training due to the permit leave of family business tolerated by the facilitator. The training approach uses "the trainees' creativity development" in interpersonal, democratic and familiar ways, the facilitator has a very close emotional relation to the trainees, and the trainees are given psychological, freedom and security, insentive (Opdyke in David, 2009), and appreciation to the products produced by the trainees (Rogers in Munandar, 2009). The training approach is done based on the social and cultural conditions of the community that the local community is traditional and agrarian. During the paddy cultivating season (planting, harvesting, and post-harvesting seasons) and celebration-holding season (wedding party), the employees temporarily leave their jobs as batik workers. Therefore, the training is effective when it is

conducted during their leisure time, or prior to and following the paddy cultivating and celebration-holding seasons. The training approach is also based on the resources of the industry particularly those related to the characteristics oh human resource, the tool and facility conditions, the availability of materials, and the technology applied.

The training products are the improvements of skills, knowledge, and attitudes of the trainees symbolized by the batik products. The skill domain is at the naturalization level, the knowledge domain is at the evaluation level, and the attitude domain is at the practice level (Irawan et al., 1994). The batik quantity includes batik motif variation, types of batik-making, types of *isen-isen*, mix of colors, types of cloths, and types of batik products. Batik quality includes the attractiveness of motif and color compositions, motif meaningfulness, batik and color durability, batik comfortability and ergonomics, price affordability, and the marketability of the products (Mizuro, 1994). The impacts of the training are the improvement of the trainees' performances due to more comfortable and exciting work situations so that the employees feel working at home, and the improvement of wages.

3.3 The Supporting and Inhibiting Factors to the Batik Design Development Training

The determination of the supporting and inhibiting factors to the batik design development training is identified through SWOT analysis (David, 2009). The former are analyzed based on the factors of strengths and opportunities, and the latter are analyzed based on those of weaknesses and threats. The supporting factors of the batik design development training at Dewi Ratih batik industry are as follows:

- The facilitator is very competent in the batik design development field and understands the market taste, technology, fabric characteristics, and production process. She also understands thoroughly the character differences of the employees and the social and cultural backgrounds of the local community (Berlo, 1961; Abidin and Affero, 2012).
- The number of workers is approximately 200, and most of them (93%) are females. The workers have a primary need (to earn wages), affiliate with other people and self-actualization (Maslow in Stoner, 2003; Mujiman, 2009), and have motivations to conduct training.
- The tools and facilities in terms of number of items, capacity, and quality are fairly adequate.
- The fabrics and other support materials are easy to obtain, and the production process technology has been mastered by the workers.
- The industry is on the bank of river, has a tropical climate, rich of water resource, not far (20 km) from the batik market center, Klewer batik market of Solo.
- The community has knowledge and skills on batik. There are many batik motifs in the community, which are frequently used as design development media. The life community (Javanese) needs batik much for holding celebrations such as wedding party, Eid feast, and other Javanese ceremonies (Honggopuro, 2002).
- The value systems such as mutual helps and mutual aids prevailing in the community have a positive effect on the training process. (Mappa, 1994).

However, there are also some inhibiting factors to the batik design development training at Dewi Ratih batik design development training. The inhibiting factors are as follows:

- The facilitator has not maximally utilized the instructional resources prevailing in the community.
- The training materials have not been discussed in-depth in terms of traditional motifs of regions in Indonesia (Hoop, 1949; Doellah, 2002; Ishwara et al., 2011), types of batik motifs (Susanto, 1980; Hamzuri, 1981; Djumeno, 1990), symbolic meanings of batik motifs (Hunggopuro, 2002), and two-dimensional motif design (Malcolm, 1972; Wong, 1986).
- The batik workers lack understanding on "spatial concept" in their batik products.
- During the paddy-planting and celebration-holding seasons, many batik workers leave their work for the farming and/or celebration occasions.
- 3.4 The Basic Principles of Batik Design Development Training at Small-Scale Industry

The basic principles of the batik design development training at Dewi Ratih small-scale batik industry are analyzed by using the supporting factors and are based on the four strategies of SWOT analysis, namely: strengths-opportunities, strengths-threats, weaknesses-opportunities, and weaknesses - opportunities (David, 2009). The basic principles of the batik design development training at the small-scale industry are based on the components of training inputs, processes, products, and impacts as follows:

- The participants of the training have motivations which can be grown by the need for the training or their excitement toward the training.
- The environment for the training at the workplace supports the training activities.
- There are instrumental inputs, namely: the facilitator is competent, understands the trainees' different characteristics, understands the community's different socio-cultures, and is able to conduct a good

communication with the trainees. The objective of the training refers to the trainees' needs. The training materials are adjusted to the objective of the research and their ability level. The learning method uses the experience analysis through interpersonal dialogue methods, demonstrations, and individual tasks. The learning media are adjusted to the trainees' visual or stimulus needs. Evaluation is conducted toward the training process and results.

- The training process refers to adult education, creativity development, natural environment condition, social environment condition, and the resource condition of the industry. The adult education is centered on the life of the adults so that the training activities are adjusted to their needs (Lindeman in Uno, 2011). Experiences are learning resources. Therefore, the learning methods use the experience analysis. For the trainees' experiences and needs are different one to another, the learning is individualized. The training process is conducted to grow and improve the trainees' creativities, which is done democratically by giving psychological freedom, psychological security, incentive, and appreciation toward the training products (Roger in Munandar, 2009; Csikszentmihalyi in Kaufman, 2007). The training employs many practices, repetitions, and opportunities to have trials and failures (Dahar, 1988; Gredler, 1991; Irawan, 1994; Rahyubi, 2012). The training utilizes the local knowledge and the skills on batik which have been owned by the community (Ife and Frank, 2008), and the training is done by learning and working at the same time (Dahama and Bhatnagar in Mardikanto, 2010).
- The training products are determined according to the objective of the training, that is, improving the behavioral changes (skill, knowledge, and attitude) of the trainees.
- The impacts of the training are determined based on the trainees' needs, that is, improving their performances and wages.

The basic principles are presented in the figure below:

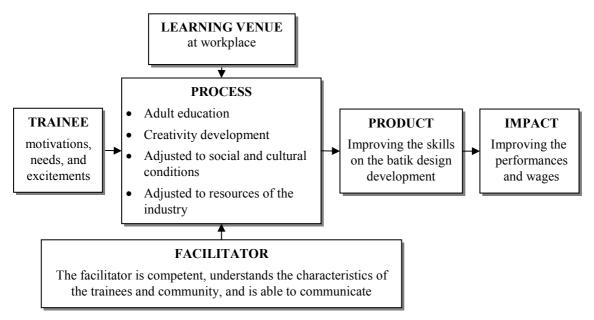


Figure 2. The Basic Principles of Batik Design Development Training at Small-Scale Industry

#### 4. Conclusion

Based on the results and discussions of the research, conclusions are drawn. Dewi Ratih batik industry is located in Pilang village, Masaran sub-district, Sragen regency, on the bank of rive, 20 km to the south-east of Solo. The industry has operated since 1992 and occupied a building of 600 m<sup>2</sup> on the land with the width of 1,000 m<sup>2</sup>. The batik products produced are batik cloths, ready-to-wear-clothes, batik-made accessories. The batik technology applied includes hand-made batik technique, printed batik technique, cap batik technique, *cabut* batik technique, and combination technique between the hand-made batik and other techniques. The number of employees is approximately 200, and 93% of them are females, 84% are the graduates of Primary School, and all of them are Moslems. The products are approximately 15,300 pieces of batik annually, and the value is Rp 2,0 billion per year. The products are marketed through 10 distributors in Solo, Jakarta, Bandung, Yogyakarta, and Semarang.

The implementation of the batik design development training includes motif drafting, batik-making, and coloring. The facilitator is the entrepreneur who owns the industry. The trainees of the motif drafting are draftsmen. The trainees of batik work are hand-made batik workers, cap batik workers, quality control batik workers, *brok*, and *sanggan*. The trainees of batik coloring are colorists. The objective of the training is to enable the trainees to conduct batik design development, and to make the products acceptable in the market. The training materials include batik motifs, *isen-isen* batik motifs. The training methods employed are dialogues, demonstrations, and individual tasks. The training approach used refers to the adult education and the trainees' creativity development and is adjusted to the social and cultural condition of the community as well as the resource condition of the industry. Evaluation is also conducted on the training processes and products. The former include the improvement of batik design development skills of which the impacts are the improvements of the trainees' performances and wages.

The factors which support the batik design development training at Dewi Ratih batik industry are: (a) the competent entrepreneur, human resources, tool and facility conditions, fabrics and other supporting materials, technology, and capital; (b) the environment which is rich of water, has a tropical climate, is located on the bank of river, and is not far from the batik center, Klewer market of Solo; (c) the workers who need to earn wages, affiliate with others, and have means of self-actualization; and (d) the community which needs batik products. The inhibiting factors include rainy season, overcast, paddy planting season, and celebration- holding season (wedding).

The basic principles of the batik design development training at the small-scale industry are as follows: (a) the trainees have motivations, needs, excitements toward the training activities; (b) the training is conducted at their workplace; (c) the facilitator is competent, the objective of the training refers to the trainees' needs, the training materials are adjusted to the objective of the training, the training methods use the experience analysis through interpersonal dialogues, demonstrations, and individual tasks, the training media are adjusted to the training refers to the adult education and the trainees' creativity development, which are adjusted to the social and cultural conditions of the community and resource conditions of the industry. The training process results in the training product, that is, the improvement of the trainees' skills symbolized by the products, and the training impacts are the improvement of the trainees' performances and wages.

Based on the conclusions, some recommendations are proposed as follows: (a) the entrepreneur of Dewi Ratih batik industry should improve the power of appreciation on the batik motifs and color-mixture making, improve the skills of the draftsmen and batik workers in making the spatial concepts and understanding the types of *pakem* motifs and symbolic meanings of batik motifs; (b) other entrepreneurs of small-scale batik industry if willing to be succeed in the business as Dewi Ratih batik industry does should conduct the batik design development training to their workers by applying the basic principles of the training on creativity skills; (c) the government should form a team of consultants to facilitate the small-scale batik industries on the batik product design development training at small-scale industries which are led by "male" entrepreneurs and which reside in the non-agrarian and traditional environment of community.

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