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EOLP FOR SKILL REGENERATION, PRODUCT INNOVATION, AND PRODUCTIVITY OF BANYUMASAN BATIK MSMES

Sutarmin[1], Aneu Yulianeu[2], Fatmah Bagis[3], Faizal Wihuda[4]
[1]Universitas Peradaban, Brebes, Indonesia
[2]Universitas Harapan Bangsa, Purwokerto, Indonesia
[3]Faculty of Economics and Business, Universitas Muhammadiyah Purwokerto, Indonesia
[4]Faculty of Economics and Business, Universitas Jenderal Soedirman, Purwokerto, Indonesia
Corresponding author: anjusu09@gmail.com

Abstract

Banyumasan batik MSMEs face three linked challenges: few young successors to skilled artisans, limited product innovation, and unstable productivity. This self-funded one-day community service program, carried out in April 2026, applied the Energizing Organizational Learning Process (EOLP) to batik MSMEs in the Papringan batik center, Banyumas Regency, in partnership with the Paguyuban Batik Papringan (Papringan Batik Association). Using participatory action research, the program was organized into three pillars, skill regeneration, product innovation, and productivity, each run through the three EOLP practices: goal oriented learning, updating oriented interaction, and intra-team learning exchange. Activities included mapping of the batik tulis process, target-setting with owners, learning forums among artisans, and master–apprentice practice. The program produced a map of skills that are difficult to transfer, agreed learning targets, and master–apprentice pairs. The main lesson was that young batik makers remained engaged when their skill targets were clear. A four-level skill matrix is proposed for follow-up programs.

Keywords: *Banyumasan Batik, Skill Regeneration, Energizing Organizational Learning Process, Master–Apprentice, Productivity*

INTRODUCTION

Batik is one of Indonesia's most important cultural heritages and a significant creative industry. Beyond its cultural value, the batik industry creates jobs for artisans, designers, and marketers, including employment opportunities for young people (Kunjuraman et al., 2025). Among the regional batik traditions, Banyumasan batik is known for its distinctive motifs and colors that reflect the character of the Banyumas community. Batik centers have grown in several villages of Banyumas Regency, such as the Papringan batik center in Banyumas District, where joint business groups such as KUB Batik Pringmas have developed (Asokawati, 2024). The regional government also places human resource development, productivity, and batik clusters among the priorities of industrial development (Pemerintah Kabupaten Banyumas, 2018).

However, batik MSMEs face serious challenges to their sustainability. The first is skill regeneration. A study at the Papringan batik center found a gap in the transfer of batik knowledge: artisans acquire their skills from family, training, fellow artisans, or social media, and many master only part of the process (Afra, 2024). In Banyumas, the shortage of skilled workers has long been linked to the lack of interest of young people in batik (Lestari et al., 2014), and a study in neighbouring Purbalingga found that young people see the profession as offering uncertain income and no clear career path (Suliyanto et al., 2016).

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Without structured transfer of skills, the knowledge of master artisans risks disappearing. The second challenge is product innovation. Competition in the batik market is increasingly intense, and consumers expect new designs and product variations. Hussein et al. (2026) found that digital marketing improves the performance of batik SMEs mainly through exploitative innovation and market agility, rather than directly. This means that batik MSMEs need the capacity to keep developing products. The third challenge is productivity. Batik tulis production passes through several stages, namely pattern drawing (nyorek), wax drawing (nyanting), wax covering (nembok), coloring, and wax removal (nglorod), and errors at one stage cause rework at the next. Value chain studies show that the added value of local products depends on how well each stage is managed (Sutarmin et al., 2022).

These three challenges share a common root: the way knowledge is created, shared, and retained in the business. Organizational learning has been shown to drive innovation performance in Indonesian SMEs (Manalu et al., 2025) and to link knowledge with innovation and performance in the creative economy (Anjaningrum et al., 2024). For batik MSMEs, organizational learning is not only about acquiring new knowledge, but also about passing tacit knowledge from one generation to the next. For this reason, the team applied the Energizing Organizational Learning Process (EOLP), an interactive learning mode that initiates a learning process oriented to organizational goals, involving members who interact actively, build voluntariness, and exchange knowledge positively (Yulianeu, 2022). EOLP was validated on embroidery MSMEs in Tasikmalaya (Yulianeu, 2022; Yusuf & Yulianeu, 2023) and community-based ecotourism teams (Yulianeu et al., 2021), and was then applied by the team to an MSME cluster in December 2025 (Yulianeu et al., 2026). This program extends its application to the transfer of craft skills.

The partner in this program was the Paguyuban Batik Papringan (Papringan Batik Association), which brings together batik MSMEs in the Papringan batik center, Papringan Village, Banyumas District, Banyumas Regency, the same center in which Afra (2024) identified gaps in the transfer of batik knowledge. Participants consisted of business owners, master artisans, and young batik makers from member MSMEs of the association. The main problems of the partners, mapped together with the owners and artisans, are presented in Table 1.

Table 1. Problem mapping of the partner

Problem area	Initial condition	Expected change
Skill regeneration	Batik skills are passed on through family, peers, or informal training without a structured path; many artisans master only part of the process; few young people are interested	Young batik makers learn the full process through guided practice with master artisans
Product innovation	Motifs and products tend to repeat the same patterns, and new designs depend on one or two people	Ideas for new variations are discussed collectively while keeping Banyumasan characteristics

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Problem area	Initial condition	Expected change
Productivity	Work steps are not planned against targets, and quality problems are handled individually	Clear work targets and shared solutions to recurring quality problems

Based on this mapping, the program aimed to: (1) build a structured path for transferring batik skills from master artisans to young makers; (2) open a collective space for developing motifs and products that retain Banyumasan characteristics; (3) link daily work to clear targets and shared solutions to quality problems; and (4) identify what is needed for the partners to continue the learning independently.

METHOD

Participatory Action Research Design

The program used a participatory action research approach, in which the partners were involved as co-actors rather than passive recipients. The activities followed a cycle of planning, action, observation, and reflection. Planning was carried out together with owners and master artisans to agree on priorities. Action implemented the three program pillars. Observation was conducted during forums and practice sessions, and reflection was held at the end of the activities to draw lessons and decide on follow-up. The program was implemented as a one-day activity on 7 April 2026 in the meeting room of the Faculty of Economics and Business, Universitas Muhammadiyah Purwokerto, and was funded independently by the team.

Program Pillars and EOLP Practices

The program was organized into three pillars: skill regeneration, product innovation, and productivity. In each pillar, the three EOLP practices were applied. The goal oriented learning process was translated into agreement on targets, updating oriented interaction into learning forums, and intra-team learning exchange into master–apprentice pairs and exchange among artisans. The application of EOLP in each pillar is presented in Table 2.

Table 2. Application of the three EOLP practices in the three program pillars

EOLP practice	Skill regeneration	Product innovation	Productivity
Goal oriented learning process	Agreement on what each young maker should be able to do	Agreement on the direction of motif and product development	Agreement on work targets and quality standards
Updating oriented interaction	Dialogue between generations on the meaning and future of Banyumasan batik	Forum on motifs, customer feedback, and market trends	Forum on recurring quality problems (e.g., wax bleed-through, uneven color)
Intra-team learning exchange	Master–apprentice pairs practicing on real pieces	Exchange of ideas between master artisans and young makers	Sharing of work tips among artisans

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Participants and Roles

Participants consisted of MSME owners, master artisans who acted as mentors, and young batik makers who acted as apprentices. Sutarmin facilitated the mapping of the production process and the discussion of productivity and value added. Aneu Yulianeu, as the developer of EOLP, led the program and adapted EOLP to the batik context. Fatmah Bagis facilitated target-setting with owners and the discussion on young makers' careers in batik. Faizal Wihuda facilitated the forums and the engagement of young makers, drawing on the team's research on work engagement (Iqbal et al., 2020).

Data Collection and Analysis

Data were collected through mapping of the production process with master artisans, observation of forums and practice sessions, notes of agreed targets, and reflection notes from owners, master artisans, and young makers. The data were analyzed descriptively and thematically to identify the outputs of each pillar and the lessons learned for follow-up programs.

RESULT AND DISCUSSION

Pillar 1: Skill Regeneration through Master–Apprentice Learning

The regeneration pillar began with a dialogue between generations, in which master artisans shared the history and meaning of Banyumasan batik, and young makers expressed their reasons for learning batik and their concerns about its future. This dialogue was intended to build mutual respect, so that mentoring would not feel like one-way instruction. The team and master artisans then mapped the batik tulis process, from nyorek, nyanting, and nembok to coloring and nglorod, and noted the stages at which skills were most difficult to transfer. These were the stages that depend on feeling and experience, such as keeping wax lines even, covering areas without bleed-through, and achieving consistent color.

Each young maker was then paired with a master artisan. Practice was carried out directly on production pieces, so that apprentices learned not only the technique but also the quality standards expected by the business. Before practice, each pair agreed on what the apprentice should be able to do, in line with the goal oriented learning practice of EOLP. This pillar responds directly to the gap in knowledge transfer found at the Papringan center (Afra, 2024) and to the lack of a clear path for young people noted by Suliyanto et al. (2016).

Pillar 2: Product Innovation Rooted in Banyumasan Identity

The innovation pillar was carried out through a learning forum in which artisans discussed Banyumasan motifs, customer feedback, and market trends. Young makers contributed ideas that suit younger consumers, while master artisans ensured that new ideas retained Banyumasan characteristics. The forum produced a list of ideas for motif variations and derivative products to be developed further by the partners. Treating innovation as a shared discussion, rather than as the task of one or two designers, reflects the updating oriented interaction practice of EOLP, in which interaction brings new ideas and energy into the group (Yulianeu, 2022). This is in line with Hussein et al. (2026), who show that exploitative innovation, namely improving and extending existing products, is an important pathway to the performance of batik SMEs.

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Pillar 3: Productivity through Targets and Shared Problem Solving

The productivity pillar linked daily work to targets agreed with owners, so that artisans knew what had to be finished and to what standard. A forum was also held on recurring quality problems, such as wax bleed-through and uneven color, which lead to rework. Artisans shared how they handled these problems, and the solutions were discussed collectively. This exchange reflects the intra-team learning exchange practice of EOLP, in which members voluntarily share knowledge for the benefit of the group (Yulianeu, 2022). Reducing errors at each stage of production is also a way to increase the added value of local products along the value chain (Sutarmin et al., 2022).

Summary of Outputs

The activities and outputs of the three pillars are summarized in Table 3. Because the program lasted only one day and before–after measurement was not yet carried out systematically, the outputs are reported qualitatively.

Table 3. Program outputs by pillar

Pillar	Activities carried out	Outputs
Skill regeneration	Mapping of the batik tulis process with master artisans; formation of master–apprentice pairs; guided practice	Map of the stages that are most difficult to transfer; master–apprentice pairs; learning targets for young makers
Product innovation	Forum on Banyumasan motifs and market input; discussion between generations	List of ideas for motif variations and derivative products to be developed
Productivity	Target-setting with owners; forum on recurring quality problems	Agreed work targets and shared solutions to common quality problems

Lessons Learned

The main lesson from the program was that young batik makers remained engaged when their skill targets were clear. When apprentices knew what they were expected to master and could see their own progress, they were more enthusiastic in practice. Conversely, the absence of clear targets is likely to weaken interest, because practice then feels open-ended; this contrast was not observed systematically and should be tested in follow-up programs. This finding is consistent with the goal oriented element of EOLP and with goal-setting theory, which holds that specific and attainable goals sustain effort and persistence (Locke & Latham, 2002). It also suggests that the perception of batik as a profession without a clear career path (Suliyanto et al., 2016) can be addressed by making the learning path visible.

Two other lessons emerged. First, regeneration and innovation reinforce each other, because young makers bring new ideas while master artisans guard quality and identity. Second, many productivity problems come from quality errors at certain stages, so improving skills at those stages also improves productivity.

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Implications and Limitations

The program shows that EOLP can be applied not only to managerial learning, as in the team's cluster program (Yulianeu et al., 2026), but also to the transfer of craft skills, which are largely tacit. This is relevant to the broader effort to sustain the batik industry, whose long-term viability depends on both people and innovation (Kunjuraman et al., 2025). The findings are also consistent with Manalu et al. (2025) and Anjaningrum et al. (2024), who show that organizational learning is a key route from knowledge to innovation and performance in SMEs.

The program has several limitations. The program lasted only one day, which is far too short for mastering batik tulis, a craft that normally requires months of practice. Before–after measurement was not yet carried out systematically, and there was no tool to monitor the skill progress of each young maker. The coverage was also limited. Based on the lesson that clear skill targets keep young makers engaged, the team proposes a four-level skill matrix for follow-up programs, as shown in Table 4. Each young maker would be assessed regularly by the master, so that progress is visible to the apprentice, the owner, and the Paguyuban Batik Papringan.

Table 4. Proposed skill levels for the follow-up skill matrix

Level	Competence	Evidence of mastery
1 – Basic	Holding the canting and drawing even lines and dots (cecek)	Practice sheet approved by the master
2 – Isen-isen	Filling Banyumasan motifs and applying wax cover (nembok) without bleed-through	One handkerchief cloth without wax defects
3 – Coloring	Dyeing and fixing colors according to the recipe, and removing wax cleanly (nglorod)	One cloth with even color that passes a simple fastness test
4 – Independent	Completing one batik tulis cloth with a typical Banyumasan motif from pattern to wax removal	One saleable cloth assessed by the master and the MSME owner

Follow-up programs should also measure the time needed per piece, the rate of rework, monthly output, and EOLP scores before and after the program, and compare them with MSMEs that do not receive the program.

Building on this program, the team and the Paguyuban Batik Papringan have proposed a follow-up program to scale up and replicate the EOLP model in the Banyumasan batik center. The proposal is supported by the Papringan Village Government and by the Indonesian Batik Professional Certification Institute (LSP Batik Indonesia). It plans to prepare 40 young batik makers through apprenticeships with master artisans across four skill levels, from basic batik techniques to completing a piece of batik tulis independently, and to offer competency certification to about 30 of them. Certification of this kind would give the skill pathway in Table 4 a nationally recognized form and a clearer career path for young makers.

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CONCLUSION

The application of the Energizing Organizational Learning Process (EOLP) to batik MSMEs of the Paguyuban Batik Papringan in a one-day program in April 2026 addressed the linked challenges of skill regeneration, product innovation, and productivity. The main conclusions are as follows.

1. The three EOLP practices can be translated into the work rhythm of batik MSMEs: agreed targets, learning forums among artisans, and master–apprentice pairs.
2. Mapping of the batik tulis process with master artisans identified the stages that are most difficult to transfer, which became the focus of master–apprentice practice.
3. Learning forums produced ideas for motif and product development that retain Banyumasan characteristics, and shared solutions to recurring quality problems.
4. Young batik makers remained engaged when their skill targets were clear, which is the basis for the proposed four-level skill matrix.

It is recommended that the partners continue regular master–apprentice practice, apply the skill matrix with systematic measurement, and develop the ideas from the forums into products tested with consumers.

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