

## Zero Waste Fashion Training: An Empowerment Strategy for the Women Learners “Cahaya Hati” Semarang

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### Abstract

This community service program aims to empower the women members of Rumpin Cahaya Hati in Pleburan Subdistrict, South Semarang District, Semarang City, through training in garment-making skills using zero-waste techniques. The program is motivated by the fact that most of the participants are unemployed, and therefore it is expected that they can make productive use of their free time while also developing sewing skills. The activity involved 15 participants and was conducted using training methods such as lectures, discussions, demonstrations, and hands-on practice. The program was carried out over four sessions, consisting of one theoretical session and three practical sessions. The outputs of the program included a garment-making module and women's apparel products developed with a zero-waste approach. The training results indicated an improvement in participants' knowledge and skills, covering body measurement, pattern making and modification, fabric cutting, sewing processes, and garment finishing with neatness and proper techniques. In addition, the outputs of the program were disseminated through publications in national journals, local mass media, and video highlights. This program is expected to create new economic opportunities for the participants, both for personal use and as a potential tailoring business in the future.

**Keywords:** empowerment, sewing skills, women's apparel, zero waste

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### INTRODUCTION

In the era of globalization and industrialization, the quality of human resources (HR) is a key determinant of national competitiveness. Efforts to develop high-quality HR are carried out through education, which today is directed toward mastery of science and technology that continues to evolve. Vocational education and training serve as strategic means of preparing adaptive talents capable of responding to contemporary changes.<sup>1,2</sup> In this context, vocational training—including sewing training—plays an important role in strengthening women's economic independence and family resilience.<sup>3,4</sup>

Pleburan Subdistrict, located in South Semarang, is predominantly inhabited by housewives of productive age (25–40 years). Many of them have significant free time but lack skills that can be used productively. This condition reflects strong potential for empowerment. Similar findings indicate that sewing training can enhance women's skills and open opportunities for entrepreneurship.<sup>5</sup>

Training programs at LKP Permata in Semarang demonstrate that effective training management—

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<sup>1</sup> H.A.R Tilaar, *Perubahan Sosial Dan Pendidikan: Pengantar Pedagogik Transformatif Untuk Indonesia* (Rineka Cipta, 2012).

<sup>2</sup> Andrea Cornwall and Althea Rivas, Maria, “From ‘gender Equality and ‘Women’s Empowerment’ to Global Justice: Reclaiming a Transformative Agenda for Gender and Development,” *Althea* 36, no. 2 (2015): 394–415.

<sup>3</sup> T Handayani and S Wulandari, “Vocational Training as a Means of Empowering Women in Improving Family Welfare,” *Jurnal Pemberdayaan Masyarakat* 5, no. 1 (2020): 34–47.

<sup>4</sup> A Maghfiroh, N Sari, and P Putra, “Strengthening Women’s Economic Resilience through Sewing Skills Training in Rural Areas,” *Jurnal Pengabdian Kepada Masyarakat* 9, no. 1 (2024): 55–66.

<sup>5</sup> D Ratnasari, R Hidayati, and B Susanto, “Sewing Training as a Strategy for Women’s Empowerment and Entrepreneurship Development,” *Syekh Nurjati Journal of Community Service* 3, no. 2 (2021): 101–10.

from planning to evaluation—can improve human resource quality while creating entrepreneurial opportunities in the fashion sector.<sup>6</sup> Studies in other regions report similar outcomes, where sewing training improved capacity, skills, and household income.<sup>7,8</sup> At the macro level, a systematic review in 2025 confirmed that women's economic empowerment through education, skills training, and entrepreneurship positively contributes to sustainable economic growth in Indonesia. A related study in Pekalongan highlighted the importance of financial inclusion, entrepreneurship training, and access to capital as crucial factors for women's empowerment.

Furthermore, several local initiatives have shown success. For example, the entrepreneurship training program in sewing organized by PKBM Bhina Swakarya empowered community members by providing both soft skills and hard skills necessary for self-employment.<sup>9</sup> In other contexts, creative skill training such as patchwork also demonstrated high levels of creativity and positive economic impacts, especially during the pandemic.<sup>10</sup>

At present, Pleburan Subdistrict is experiencing rapid development due to its proximity to several higher education institutions, including Diponegoro University (UNDIP) and the Polytechnic of Shipping Science (PIP). The presence of students, lecturers, and employees from various regions has brought new socio-economic dynamics to the community. This shift has encouraged housewives to engage not only in domestic activities but also in productive businesses, such as grocery shops, laundries, and tailoring services. However, the number of dressmaking businesses in the area remains limited (approximately three), leaving significant room for development.

Based on this background, the Community Service Team of Universitas Negeri Semarang (UNNES) initiated a basic sewing training program—including body measurement, pattern making, fabric cutting, and garment finishing—for housewives in Pleburan. This training is designed not only to enhance technical skills but also to open entrepreneurial opportunities in garment production, thereby creating new jobs and reducing local unemployment.

In summary, the identified problems include: (1) limited productive sewing skills, (2) a small number of existing dressmaking businesses, and (3) underutilization of housewives' free time. Therefore, the objectives of this activity are: (1) to provide basic sewing skills, (2) to encourage self-employment in the fashion sector, and (3) to increase family economic opportunities through skill-based empowerment.

## METHOD

This community service program was designed to be implemented over a six-month period. The activities were structured based on preliminary field observations and problem identification conducted at the partner site. The methodological stages included problem identification, preparation of materials and equipment, implementation of training, product evaluation, and overall program evaluation.

### Problem Identification

The initial stage was carried out to identify the needs of the partner related to sewing skills. This process involved the active participation of the partner community in formulating simple yet beneficial solutions. Based on the findings, the solution proposed was a training program on women's garment making for the members of *Rumah Pintar Cahaya Hati* in Pleburan Sub-district, South Semarang, Semarang City.

### Preparation of Materials and Equipment

At this stage, the preparation of supporting facilities for the training was conducted, including sewing tools and fabric. The training team, in collaboration with the partner, designed the activity plan to ensure the participants understood the requirements needed before the training.

<sup>6</sup> R Fachmi, A Anwar, and D Lestari, "The Effectiveness of Vocational Training Management in Improving Women's Entrepreneurship Skills," *Jurnal Pendidikan Vokasi* 13, no. 2 (2023): 145–58.

<sup>7</sup> A Yassir, F Rahman, and T Zulfikar, "Women's Empowerment through Sewing Skill Training in Aceh," *Naskah Aceh Jurnal of Community Engagement* 4, no. 1 (2021): 45–56.

<sup>8</sup> M Silalahi, R Lawe, and J Manu, "Vocational Training and Women's Empowerment: Evidence from Kupang," *Jurnal Pengabdian Universitas Jambi* 7, no. 3 (2022): 201–10.

<sup>9</sup> UNY Journal, "Empowering Communities through Sewing Entrepreneurship Training," *Jurnal Pemberdayaan Masyarakat* 8, no. 1 (2023): 75–88.

<sup>10</sup> UMM Journal, "Creative Skills Training in Patchwork for Women Entrepreneurs during the Pandemic," *Jurnal Ekonomi Kreatif* 6, no. 2 (2021): 90–102.

### Program Implementation

The core activity was a hands-on sewing training focusing on the following competencies:

- Taking body measurements
- Drafting garment patterns
- Cutting fabrics
- Sewing processes
- Finishing techniques

### Product Evaluation

Evaluation was conducted to assess the participants' skills. The evaluation covered both theoretical and practical aspects.

- **Theoretical assessment** (pattern drafting) was graded using the following scale:  
A = 80–100% (very good)  
B = 65–79% (good)  
C = 50–64% (fair)  
D = < 50% (poor)
- **Practical assessment** (sewing) was conducted using an observation sheet with the following weightings:

**Table 1.** Evaluation Sheet for Women's Garment Sewing Practice

No	Aspect Assessed	Weight
1	Preparation: Tools, Pattern	20%
2	Implementation: Laying out pattern, cutting fabric, sewing process	40%
3	Final Product: Sewing technique, neatness of stitches	40%
<b>Total</b>		<b>100%</b>

## RESULT & DISCUSSION

### Implementation of the Training Program

The training was conducted on Thursday, June 23, 2025. The schedule was adjusted to match the participants' free time as well as the availability of the service team, ensuring that the program could run effectively. The training involved 15 housewives who are active members of Rumah Pintar "Cahaya Hati" in Kelurahan Pleburan.

The activity was well received by the community, as indicated by the participants' enthusiasm throughout the sessions. The program proved to be appropriate in providing mothers with the necessary knowledge and skills to utilize their free time for productive activities.

The training on zero-waste garment making was conducted in four sessions. The first meeting focused on theoretical materials, followed by practical sessions. In principle, all participants received the complete materials, and their creativity determined the final outcomes of the garments produced.

### Participant Engagement and Learning Outcomes

The participants showed strong engagement during the training. Their active involvement was evident not only in practice but also in the question-and-answer session, where they asked about tools, materials, and processes. This indicates that the training succeeded in generating curiosity and deeper understanding.

As a result, participants were able to acquire the skills to make zero-waste garments independently. The program has therefore contributed to empowering women by enhancing their technical knowledge and practical skills in garment-making.

### Evaluation of Training Outcomes

To evaluate the program, participants' performance was assessed in three stages: preparation, garment-making process, and final product. The criteria included the accuracy of pattern-making, precision in cutting fabric, sewing process, and neatness of the final garment.

TABLE 2. Evaluation Results of Participants

Performance Criteria	Number of Participants	Percentage	Category
<b>Very Good (80–100%)</b>	13	90%	Excellent
<b>Good (65–79%)</b>	2	10%	Good
<b>Fair (50–64%)</b>	0	0%	Fair

<b>Poor (&lt;50%)</b>	0	0%	Poor
<b>Total</b>	15	100%	

Sources: Authors, 2025

The results indicate that 90% of participants achieved an “Excellent” category, while the remaining 10% achieved a “Good” category. This demonstrates the overall success of the training in achieving its objectives.



Figure 1. Training participants practicing zero-waste cutting technique



Figure 2. Training participants practicing zero-waste cutting technique

### Discussion of Findings

The implementation of this community service program aligned well with the planned activities. The combination of lectures, demonstrations, and hands-on practice allowed participants to follow each step carefully. Although initially designed for 20 participants, the final number was 15, yet the outcomes remained highly satisfactory.

These findings are consistent with previous studies showing that vocational training, especially in sewing and garment-making, can improve women’s skills and entrepreneurial potential.<sup>11,12</sup> The high success rate also suggests that zero-waste techniques are not only applicable but also practical to be taught at the community level.

Beyond skill acquisition, the program fosters a multiplier effect. The garments produced during the training were kept by the participants, enabling them to serve as learning media and prototypes for future production. Furthermore, participants are expected to share their knowledge with other community members, thereby extending the program’s impact and supporting sustainable empowerment.

### CONCLUSION

This community service program successfully achieved its objectives by providing basic sewing skills through zero-waste garment training for women in Pleburan Village. The training not only improved

<sup>11</sup> Handayani and Wulandari, “Vocational Training as a Means of Empowering Women in Improving Family Welfare.”

<sup>12</sup> Fachmi, Anwar, and Lestari, “The Effectiveness of Vocational Training Management in Improving Women’s Entrepreneurship Skills.”



participants' technical competencies in pattern drafting, fabric cutting, sewing, and finishing but also encouraged them to use their free time for productive and income-generating activities. Furthermore, the program promoted sustainable fashion practices by introducing zero-waste techniques. The outcomes indicate that such training can serve as a strategic approach to empower women, enhance family economic resilience, and create opportunities for micro-entrepreneurship in the fashion sector.

### ACKNOWLEDGMENTS

The authors would like to thank Universitas Negeri Semarang (UNNES) for supporting this community service program. Appreciation is also extended to the Cahaya Hati Community Learning Center in Pleburan Village, Semarang, and all participants who actively engaged in the training activities.

### DECLARATION OF CONFLICTING INTERESTS

The authors states that there is no conflict of interest in the publication of this article.

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### Author(s) Biography

Musdalifah is a lecturer at the Family Welfare Education Study Program, Faculty of Engineering, Universitas Negeri Semarang, Indonesia. She teaches courses in occupational health and safety, tailoring, and basic fashion design. Her academic interests include fashion construction, vocational education, and skill-based training for community empowerment. She has contributed to several community service initiatives, particularly in developing women's skills in sewing and garment production to support entrepreneurship. Her work integrates both theoretical and practical aspects of fashion education, aiming to prepare students and communities with applicable knowledge and skills in the field of family welfare and sustainable fashion practices.

Asih Kuswardinah is a professor at the Family Welfare Education Study Program, Faculty of Engineering, Universitas Negeri Semarang, Indonesia. Her field of expertise is family welfare science, with a strong academic and professional influence in the development of the study program's curriculum. She has published widely and conducted extensive research in family welfare education, focusing on strengthening family resilience, well-being, and empowerment. Her contributions have been pivotal in shaping both the direction of research and the design of academic programs in family welfare, making her a key figure in advancing the discipline at the national level.

Dwi Putri Asih is a lecturer at the Fashion Design Study Program, Faculty of Engineering, Universitas Negeri Semarang, Indonesia. Her expertise includes fashion design, textiles, and natural dyeing techniques. Her research focuses on vocational education, sustainable textile practices through the utilization of organic waste as natural dyes, and innovative textile manipulations. She has also been actively involved in community service programs, particularly in empowering women through sewing and fashion entrepreneurship training.

In addition to teaching and research, she contributes as an assessor and actively participates in academic publications and collaborative projects related to fashion and sustainability.