

Trash Becomes Valuable Goods: Training in Making Unique Home Decorations from Household Waste

 Ria Novianti^{1*},  Roza Linda²,  Nana Rahayu³,  Ni Putu Wijayanti⁴,
 Ainama Nafisa Putri⁵,  Farah Nurhaliza⁶

^{1,2,3,6}Universitas Riau

Riau, Indonesia

⁴Dinas Pendidikan, Kepemudaan dan Olahraga Kabupaten Jembrana
Bali, Indonesia

⁵Universitas Negeri Yogyakarta
Daerah Istimewa Yogyakarta, Indonesia

✉ ria.novianti@lecturer.unri.ac.id*



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Abstract

Background: The problem of the lack of productive skills among housewives is a challenge in efforts to improve family welfare and empower the community's potential. To overcome this, training was conducted on how to make home decoration crafts from household waste.

Aims: The purpose of this activity aims to improve the skills of housewives in processing waste into valuable and aesthetic products, as well as to open up creative business opportunities.

Methods: The training method is participatory and gradual, starting with introducing waste types, processing techniques, and direct practice in making decorative crafts.

Result: The evaluation results through pretest and posttests showed a significant increase by 95.62% in the ability of participants to make home decoration crafts. This increase reflects the effectiveness of the applied training method.

Conclusion: With these results, it can be concluded that this training has succeeded in achieving its objectives, and the skills obtained are expected to encourage participants' economic independence through recycled craft-based entrepreneurship.

A. Introduction

The problem of household waste management in Riau Province is still a serious challenge (Zainal et al., 2021). Nevertheless, behind it lies the economic potential that has not been optimally developed, especially in the handicraft sector (Yadav et al., 2022). Household waste, most of which is non-biodegradable, can be processed into products with high artistic and economic value if managed creatively and innovatively (Moshood et al., 2022). However, local handicraft production in Riau is still minimal. Most of the need for handicraft products, especially home decoration, is met through orders from outside the region, such as Java, either online or directly (Mardatillah et al., 2022). This dependence causes additional transportation and shipping costs, and hinders the development of the local creative economy. The lack of local handicraft production shows a great opportunity that has not been utilized.

By empowering the community to produce high-quality local handicrafts, Riau has the potential to increase its economic independence, create new jobs, and reduce dependence on supplies from outside the region. In this context, Tangkerang Tengah Sub-district in Marpoyan Damai District, Pekanbaru City, was chosen as the location for community service activities. This sub-district is densely populated, with 21 Community Associations (RW) and active socio-economic dynamic. One of the main factors in selecting this location is the potential for high participation from housewives, especially PKK members, who have relatively sufficient free time, interest in crafts, and an established organizational framework to support

the smooth running of empowerment programs. This condition provides a strategic opportunity to encourage creativity, develop new skills, and open up business opportunities based on processing household waste into products with sales value.

The life of the Tangkerang Tengah Sub-district, Marpoyan Damai District, Pekanbaru, is quite dynamic; its residents are involved in various types of work, including civil servants, private employees, entrepreneurs, and laborers. This community service activity targets housewives who are assumed to have sufficient free time to attend training and are interested in making handicrafts. In this case, members of the PKK Empowerment Team at the district and sub-district levels have an excellent opportunity to be involved in entrepreneurial activities. Empowering this group is essential in the context of increasing creativity and the local economy through the utilization of household waste. The lack of local craft production in Riau Province causes dependence on products from outside (especially Java), which require high costs and a long time.

By building local production groups, transportation and shipping costs can be reduced. Becoming the leading supplier of handicrafts in their area, increasing residents' income, especially housewives who were previously less economically empowered (Dalal et al., 2024; Fernández Bellver et al., 2023).

Using waste as an economic innovation and environmental solution, household waste, especially that which is difficult to decompose, is usually considered an ecological burden and is handled passively by the community (Radityaningrum et al., 2017).

Household waste is transformed into aesthetic home decoration products through reduced, reused, and recycled training (Sholanke & Gutberlet, 2022). These products can be sold at local markets, bazaars, social media, and craft events. This approach not only reduces the burden on the environment but also produces added economic value, making waste no longer waste but a productive asset.

Entrepreneurship is a vital part of society because it can solve community problems (Wulandari et al., 2021). Therefore, this community service activity aims to empower PKK members by mastering the skills of processing used goods into home decoration products and encouraging them to become entrepreneurs. The basic material used in this training is household waste. Waste management is currently seen as only the responsibility of the government. The community plays a more passive role as the party being served because they feel that they only need to pay for waste disposal (Rielasari, 2018). Further handling is the responsibility of the government (Jauhar et al., 2024).

The community can actively contribute to waste management. Radityaningrum et al. (2017) stated that waste management with the concept of Reduce, Reuse, Recycle (3R) is an intensive effort to reduce the amount of waste entering the Final Disposal Site (TPA). It will be easier for the community to manage non-biodegradable waste originating from household waste. Creative reuse of household waste will provide greater added value. Creativity is creating a new product, either entirely new, modified, or changed, by developing existing things (Pentury et al., 2021).

Creativity in utilizing plastic waste and similar materials in the form of handicrafts is quite a good solution to turn used goods into products with sales value. These materials can also be creatively processed into items that have aesthetic value.

Through the PKK forum, members can be trained to develop creativity by learning various skills in utilizing household waste materials, such as scraps of cloth, plastic, cans, glasses, and beverage bottles. These materials can be processed into products marketed in various places.

Implementing community service activities includes training in making handicrafts and marketing techniques. Training and mentoring in making crafts from waste materials provide residents with knowledge about the potential business opportunities that can be created.

Furthermore, it is hoped that the economic level will increase through creativity and these skills. Thus, through the partnership between the PKK Team of Tangkerang Tengah Sub-district, Marpoyan Damai District, with the Community Service Team and the integration of activities with students participating in the Integrated KKN. It is hoped that the welfare of the target community can be realized with a work program designed in collaboration with student activities during service in Tangkerang Tengah Sub-district.

B. Methods

The training on making home decorations from household waste materials, as part of the community service activities, was conducted face-to-face with participants in the Tangkerang Tengah Sub-district Office Hall. Participants, totaling 50 people, were guided directly by the Community Service Team and accompanied by the Riau University Kukerta Student Team.

Kukerta, or “real work lectures”, aims to develop students' abilities in applying the science and technology they have learned in college to real life in society. This activity is carried out by collaboration with a team of lecturers in community service activities. Community Service Activities are carried out with the following stages: (1) Initial survey through observation. The aims to investigate participants' problems, needs, and potential, which are then used as a basis for designing the proper form of training; (2) Provision of tools and materials. All tools and materials used in this activity are provided by the Community Service Team so that participants can focus on participating. (3) Pretest: This initial test is carried out to determine the participants' basic knowledge about making home decorations from household waste materials. The training activities were carried out for 14 meetings, from July to August 2024, which began with training activities on introducing handicrafts, training on making various kinds of flowers using paper, patchwork, and flannel as the basic materials. It continued with making home decoration creations from used goods made of wood, glass and iron/cans using decoupage techniques, making various kinds of wall decorations from used goods, training on making tissue holders and jars, and ending with training on marketing techniques using social media; (4) Posttest. Participants were given a test at the end of the activity to see the increased understanding and skills in making home decorations from waste materials.

The data was analyzed using descriptive statistical calculations with Excel to calculate the average score and percentage of improvement. The following are the details of the community service activities:

Table 1. The Details of the Community Service Activities

No.	Schedule	Activity Details
1	September 6, 2024	Opening and introduction of the community service team Kukerta, and pretest for students
2	September 7, 2024	Making flower crafts using used paper.
3	September 9, 2024	Making flower crafts using leftover fabric scraps.
4	September 12, 2024	Making flowers, using flannel as the basic material. One of the flowers made was a flannel rose.
5	September 15, 2024	Introducing Decoupage craft techniques. Decoupage is a craft art using paper attached to one of the craft objects.
6	September 16, 2024	Applying Decoupage techniques to glass bottles to give them artistic value.
7	September 20, 2024	Handicraft training involves the application of decoupage techniques to used cans.
8	September 22, 2024	The 8th handicraft training has a new topic: making wall decorations using used materials such as rice winnowing trays and patchwork fabric.
9	September 25, 2024	Training PKK mothers to make tissue boxes using used materials.
10	September 27, 2024	Training PKK mothers to make decorative jars using recycled materials.
11	September 29, 2024	Training PKK mothers to make tissue boxes using decoupage techniques
12	Oct 1, 2024	Providing training to PKK mothers on how to make decorative jars using decoupage techniques
13	Oct 3, 2024	Providing a final test to obtain posttest data
14	Oct 4, 2024	Closing activities

C. Results and Discussion

1. Result

The community service program is one of the an implementation of the Tridharma of Higher Education (Kruahong et al., 2023; Ismawan et al., 2022). This program is implemented in various forms, such as community education and training, community service, and action research on science and technology produced by higher education institutions (Nursita & Idris, 2024).

The objective of this program is to apply the results of science and technology for community empowerment, thereby resulting in changes in knowledge, skills, and attitudes among the target community groups (Novianti et al., 2020). This community service activity is carried out based on the needs of the community in Tangkerang Tengah Sub-district, with the target group being housewives who are members of the PKK Empowerment Team of Tangkerang Tengah Sub-district. This community service activity lasted one month, from July 5 to August 5, 2024.

Overall, this community service activity is divided into 14 meetings, starting with the introduction of the Community Service Team and Kukerta Students, as well as training socialization to provide initial insights for participants regarding the objectives, goals, targets, schedule, types of activities, and materials that will be used in the training. This activity was conducted in the Hall of the Tangkerang Tengah Sub-district Office. Each activity is preceded by the participants' registration process and the implementation of the specified SOPs'.



Figure 1. Making Flowers from Paper and Scrap Fabric



Figure 2. Flower Creations

Practical and targeted training is the expected goal in every implementation of community service. The needs analysis conducted at the beginning of the activity should serve as a reference for the training objectives to be achieved (Ulat et al., 2022). Therefore, for this training activity to be measurable before it begins, participants are asked to fill out a pretest regarding their knowledge about creating product using household waste. The first training provided was a workshop on making flowers from paper and fabric scraps. This training took place over three sessions. Participants were very enthusiastic about learning these easy-to-master basic flower-making techniques. The tools used were also easy to obtain: paper, cloth scraps, scissors, glue, needles, thread, and dacron.

In the next training session, the community service team introduced and showed the Decoupage Technique, using household waste made of wood, glass, and iron/cans. In this activity, was divided into three sessions. Participants learned about the materials used in the decoupage technique, such as acrylic paint, brushes, glue, and decoupage tissue. According to Ellyany Sinaga et al. (2024), Decoupage is a

handicraft art performed by cutting and pasting image objects made of special decoupage tissue called serviette onto a specific medium.

Because this technique was still new to all participants, guidance from the community service team and assistance from Kukerta students were very much needed. The first recycled material used was wood, which has the lowest difficulty level. Participants tried to create home decor from painted cutting boards or old boards, then applied tissue decoupage using brushes and glue. In the next session, the recycled materials were made of glass, such as bottles or unused vases. After successfully using the decoupage technique on glass, the next step involved using recycled materials made of iron or cans, such as instant food cans and biscuit cans.

The decoupage technique fascinated the participants. As a result, in each session, the training time always exceeded the predetermined schedule. This happened because, besides working on the recycled materials the community service team provided, the participants also brought other recycled items from home to transform into aesthetic home decor products. According to [Salim et al. \(2020\)](#), handicraft product using the decoupage technique not only enhance the participants' knowledge in developing handicrafts, but the decoupage handicraft results can also have high economic value if pursued consistently.



Figure 3. Training in Making Home Decor Creations with Decoupage Techniques



Figure 4. (a). Wood Crafts; (b) Glass Crafts; (c). Can Crafts

The following skill learned by the participants was making various wall decorations using recycled materials, such as woven trays or plastic. This activity was divided into three meeting sessions.

Participants appeared comfortable and enthusiastic in using the crafting techniques they had previously learned in this session. They demonstrated the skills to make home decor crafts and showed the potential to become entrepreneurs using the home decor craft products they produced.

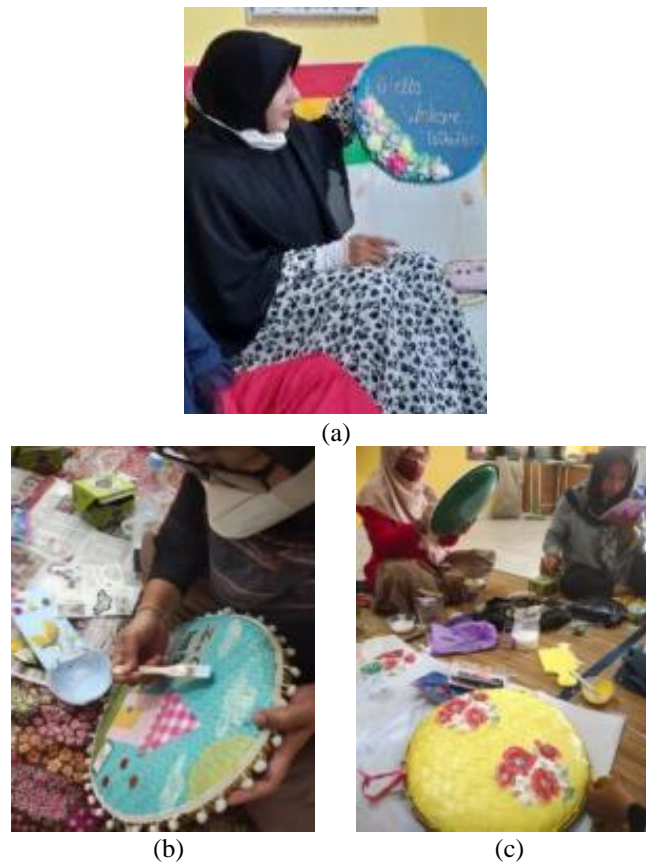


Figure 5. a,b,c Participants Making Wall Decorations from Used Materials

The creation of tissue boxes and decorative jars was the next training material. This activity was divided into two sessions and was very well attended by the participants. They applied various flowers and accessories learned in the initial meeting to decorate the tissue boxes and jars, making them unique and giving them good market value.



Figure 6. Participants Make Tissue Boxes and Decorative Jars

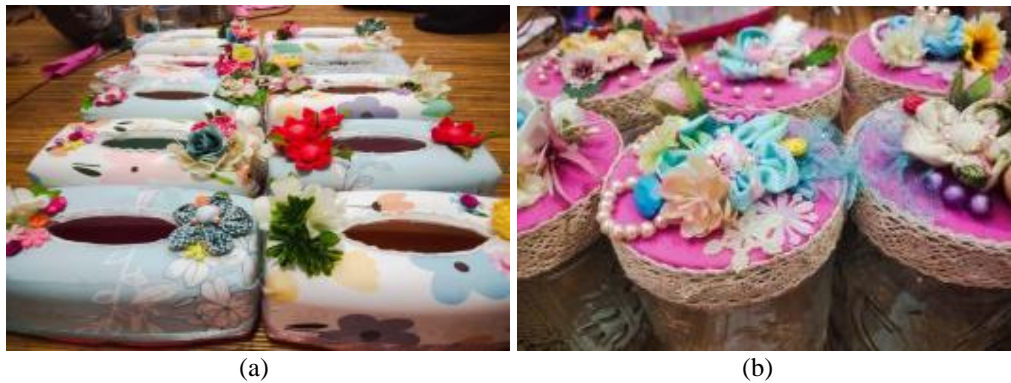


Figure 7. a. Tissue Box; b. Decorative Jar

After conducting the training activities, it can be seen that the objectives of the home decor creation training from household waste have been achieved. The women who participated in the training were already able to create various crafts with good results. They also intend to develop the skills they have acquired into a joint business managed by the sub-district's PKK team. Of course, this is expected to add value to community empowerment in the Tangkerang Tengah sub-district and serve as a solution for increasing the community's income through entrepreneurial activities.

The improvement in the participants' knowledge and skills can be seen in Table 1 and the graph obtained from the comparison of pretest and posttest scores:

Table 2. Comparison of Pretest and Posttest Results of Training Participants

Item	Pretest	Posttest
Item 1	16	19
Item 2	12	20
Item 3	14	20
Item 4	10	20
Item 5	11	20
Item 6	10	20
Item 7	12	15
Item 8	14	19
Total	99	153
Average	12,375	19,125
Percentage	61,87%	95,62%

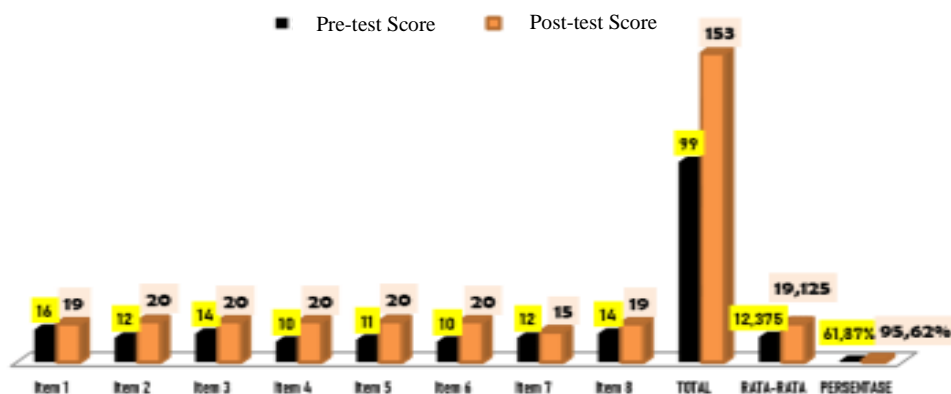


Figure 8. Comparison of Pretest and Posttest Results of Training Participants

Figure 8 compares the pretest and posttest results obtained by the training participants. In the pretest, the score obtained was 61.87%. There was still a lot of knowledge and skills about using and manufacturing used household goods into craft items that the training participants did not yet understand. However, after the training was conducted over 14 meetings, there was a significant increase of 95.62%. This is certainly

one indicator of the success of the training activities.

The increase occurred due to several things: the training materials met the needs of the participants, and the training materials were highly relevant to the conditions of the participants (PKK members in Tangkerang Tengah), who had limited access to industrial raw materials but had abundant household waste. Training materials included flower-making from paper and patchwork, decorating with decoupage techniques, and creating containers and decorations from used goods, directly utilizing local resources. In addition, the training also included marketing via social media, so that technical skills were balanced with knowledge about product marketing.

Furthermore, the training method proved to be very effective because of the direct and hands-on practice in each session. With guidance from the service team and Kukerta students, participants were able to receive theoretical explanations and immediately practice new skills. Each technique (flowers, decoupage, glass, cans, wall decoration, tissue boxes, and decorative jars) was taught in stages and repeated in several meetings to strengthen mastery. Then, the pretest and posttest helped measure improvements in a structured manner, providing additional motivation to study more seriously. Data analysis from the findings explained that items 4 and 6 experienced the most significant increase (+10 points), indicating that the aspects taught in these items were previously less mastered by participants but were very effective after training. Items 2 and 5 also revealed significant increases (+8 and +9 points), showing that participants quickly learned and absorbed new techniques for creating flowers or unique home decoration creations from household waste.

Meanwhile, item 7 had the smallest increase (+3 points), which may suggest that the material covered in that item was more difficult to understand, or that teaching method was less optimal compare to the others. Another possible explanation is that item 7 is related to digital marketing, which may require a longer adaptation period for some participants. The overall significant increase (from 61.87% to 95.62%) occurred because the training materials were very appropriate to the needs of the participants, based on the daily reality of the participants, and transferred with intensive practice methods. The most mastered area is the basic technique of waste creation (especially decoupage and making home decorations). The area that needs more attention for further training is the aspect of product marketing or advanced techniques, because the increase in item 7 is lower than the other items.

2. Discussion

After 14 training sessions (1 month) there was a 95.62% increase in participants' skills compared to the initial score. Participants could make various home decoration products from household waste, such as glass bottles, used cans, scraps of cloth, and paper. The training focused on production techniques such as decoupage, flower making, and wall decorations, and included marketing training using social media. As a contribution to community empowerment through increased self-capacity, participants, especially PKK housewives, now have new skills to improve their productivity. These skills contribute to strengthening local organization by being developed within the PKK group framework, maintaining social networks and sub-district-level community organizations. In terms of community-based waste management, this program contributes to reducing household waste and supports the 3R principle (Reduce, Reuse, Recycle).

There is potential for economic growth with new business opportunities, as recycled craft products have competitive selling value, opening up opportunities for home businesses and MSMEs. By utilizing household waste, savings and increasing income can be achieved because production costs are low, resulting in greater profits when the products are sold (Hikmawati, 2022). Empowerment of the local economy: previously, many decorative crafts were imported from outside (Java Island), so local production in Riau can reduce the cost of importing products and strengthen the sub-district economy.

Although the program has shown significant success, several limitations need to be considered, namely the relatively short duration of the training, which is 1 month; this time is enough to form basic skills but not necessarily enough to build long-term entrepreneurial independence or production consistency. The scope of participants is limited, and only housewives who are members of the PKK in one sub-district (Tangkerang Tengah, Pekanbaru) are included. This means that the generalization of the results to a larger community or other demographic characteristics (such as youth or older people) has not been tested. Since many new techniques, such as decoupage, are complex for beginner participants, the training depends heavily on facilitators, especially the intensive guidance from the service team and KKN students. There are post-training challenges, and market access for recycled craft products has not been explained in detail. Has the community been assisted in creating distribution channels or large-scale marketing?

Business capital for larger-scale production has not been described. This training significantly contributes to household-based economic empowerment and supports creative waste management. However, the sustainability of these positive impacts depends on continued mentoring, strengthening market access, and developing financial and marketing support.

2.1 Implication

- a. Entrepreneurial skills and interest enhancement: After 14 training sessions (1 month), participants' skills increased by 95.62% compared to their pretest score. Participants, especially housewives who are members of the PKK, are now able to create various home decoration products from household waste, such as glass bottles, used cans, scraps of cloth, and paper. This training includes production techniques such as decoupage, flower making, and wall hangings, as well as marketing training using social media.
- b. Strengthening personal capacity: Participants have acquired new skills that can increase their productivity.
- c. Strengthening local organizations: The skills acquired are developed within the framework of PKK groups, helping to maintain social networks and strengthen community organizations at the sub-district level.
- d. Community-based waste management: This program contributes to reducing household waste and supports the 3R principle (Reduce, Reuse, Recycle).
- e. Potential for economic growth: Recycled craft products have competitive market value, opening up opportunities for home businesses and MSMEs. By utilizing household waste, production costs are low allowing for greater profits when the products are sold.
- f. Empowering the local economy: Producing local decorative crafts in Riau can reduce reliance on imported products from outside (especially Java) and strengthen the village economy.

2.2 Research Contribution

2.2.1 Originality of the Research

This research presents a new approach to household economic empowerment by combining creative skills training (handicrafts from household waste) with social media-based entrepreneurship strategies. The uniqueness of this research lies in the use of decoupage techniques—which are still rarely applied in waste-based training in Indonesia—as the main media for improving skills and the aesthetic value of recycled products. In addition, the local context used, namely the Central Tangkerang area, contributes to originality because it adapts the program to local socio-cultural and economic characteristics.

2.2.2 Academic and Practical Impacts

Academic: This research expands the discourse in the field of community service, especially on the issues of women's empowerment, community-based entrepreneurship, and sustainable waste management. Quantitative findings (increase in training scores from 61.87% to 95.62%) support the effectiveness of direct practice-based training methods in the context of community empowerment.

Practical: This program not only improves skills but also fosters entrepreneurial spirit among housewives. Products from the training have the potential to be sold and open new MSME opportunities in the area. This contributes directly to reducing dependence on products from outside the region (for example Java), as well as improving the local economy with minimal capital based on household waste.

2.2.3 Differences and Progress from Previous Research

Compared to research or community service programs that only focus on waste management education (3R: Reduce, Reuse, Recycle), this research integrates aspects of entrepreneurship and digital marketing, making it more comprehensive and sustainable.

This research presents a structured measurement process through pretests and posttests, which has not been widely carried out in previous similar studies in community service-based skills training.

The involvement of integrated KKN students as facilitators makes this program a collaborative model between academics, students, and the community that can be replicated elsewhere.

2.3 Limitations

Although the program was successful, there were some limitations that need to be considered:

- a. Relatively short training duration: The training lasted only one month, which was sufficient to build basic skills but may not be enough to build long-term entrepreneurial independence or production consistency.
- b. Limited participant scope: The program only involved housewives who were members of the PKK in one sub-district (Tangkerang Tengah, Pekanbaru). This limits the generalizability of the results to the wider community or other demographic characteristics.
- c. Reliance on facilitators: Many of the new techniques, such as decoupage, were quite complicated for novice participants, so the training relied heavily on intensive guidance from the community service team and KKN students.
- d. Post-training challenges: Market access for recycled craft products was not explained in detail. Including whether the community was supported in creating large-scale distribution or marketing channels. In addition, business capital for larger-scale production was not explained.

2.4 Suggestions

For the sustainability of the positive impact of this program, it is necessary:

- a. Continuous mentoring.
- b. Strengthening market access.
- c. Development of financial and marketing support.
- d. Advanced training that focuses more on the marketing aspects of products or more complex techniques.

D. Conclusion

The Community Service Activity of the Home Decor Handicraft Training from Household Waste went according to plan and was well received by the PKK members who participated in this activity. Household waste made from wood, cans, bottles, and scraps of cloth can be reused in various kinds of work that can be used to decorate the house for personal use or to increase income. The enthusiasm of the participants and the good reception given by the Tangkerang Tengah Sub-district were the keys to the success of this activity. In addition, assistance from the Integrated Community Service Kukerta students played a significant role in the success of this activity. The pretest score of the training participants was 61.87%, and the posttest score was 95.62%. This increase shows that the goal of the training, namely to increase the insight and skills of PKK members as participants in the home decor handicraft training activity, has been achieved.

The skills that participants already have can be used to preserve nature by reusing non-biodegradable household waste, and the work produced can help improve the family economy because various objects and home decor work offer good entrepreneurial opportunities.

E. Acknowledgment

The author would like to thank the PKK members who participated in the community service activities to process household waste and the team who made this activity a success.

F. Author Contribution Statement

RN designs the concept and methodology of community service activities, prepares proposals, coordinates the team, and is responsible for reporting and publishing community service results. RL is responsible for collecting field data, implementing technical activities with partners, and assisting in evaluating the success of activities. NR manages relationships with local partners and stakeholders, prepares extension or training materials, and assists in evaluating the success of activities. NPW provides direct assistance to the community during the community service process, assists in training activities, and participates in writing reports. ANP monitors and evaluates internal activities, processes community service data, and assists in revising documents and final reporting. FN is responsible for documentation aspects, assists in publishing social media or local media, and supports in preparing activity reports.

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