



Training on Utilizing Local Resources and Upcycling for Sustainable Early Childhood Education

Agus Nu'man

Sekolah Tinggi Agama Islam Nurul Huda Kapongan, East Java, Indonesia

*Corresponding Author: agusinta18@gmail.com

DOI: <https://doi.org/10.61987/acsj.v1i1.705>

Abstract:

Probolinggo, as one of the areas located on the shores of the Java Sea, makes it rich in marine products in the form of fish that are useful for brain growth and development. Still, unfortunately, many early childhoods do not like fish. For this reason, there needs to be a persuasive effort so that children want to eat fish with a fun story method using APE (educational props). This service aims to introduce various kinds of fish to children and invite children to like to eat fish through attractive APE (Educational Props). In its implementation, this service was carried out by involving four kindergarten teachers of TK Sinar Harapan to be trained to make APE based on the potential of nature by utilizing used goods. This training is carried out through the material presentation stage, preparation, APE manufacturing, and APE trials. Based on the results of the training conducted, it can be concluded that (a) kindergarten teachers understand the importance of fish for children's brain growth and development; (b) kindergarten teachers can utilize used goods in APE based on natural potential; (c) kindergarten children can understand the importance of fish for brain growth and development, various kinds of fish products in the city of Probolinggo, and are interested in eating fish. From this activity, teachers or parents should be able to take a persuasive approach by playing in introducing the potential of nature.

ARTICLE HISTORY

Received 19 December 2024

Revised 12 January 2025

Accepted 8 April 2025

KEY WORDS

Marine Products, Fish for Brain Growth, Early Childhood Education, Persuasive Approach

INTRODUCTION

Probolinggo City, one of the small towns located on the north coast (pantura) of Java in the north, is directly adjacent to the Madura Strait. In addition, Probolinggo has a dense cargo port, produces Mango types of Arumanis and Manalagi, has abundant marine products in the form of fish, and has local wisdom in the form of sea picking and SEMIPRO (A week in Probolinggo) (Redyanto et al., 2018). It is not surprising that the city of Probolinggo is a city rich in fish products. Some of Probolinggo's fish products include Mackerel, Skipjack, Manyung, Beloso, Bijnangka, Red, and Grouper (Probolinggo, 2022). The abundance of fish has become the natural potential of the town of Probolinggo. On the other hand, these fish are a source of protein necessary for brain development (Prameswari et al., 2019). Marine fish contain omega-3 fatty acids that can increase human intelligence (Andhikawati et al., 2021). That is why early childhood should mainly be accustomed to eating fish to get adequate nutrition and protein for growth.

Unfortunately, most young children in Probolinggo do not like fish. They are only interested in eating fast food such as fried chicken, pizza, noodles, or fatty foods such as pentol, cireng, basgor, and the like. These foods are unsuitable for children's growth and development (Inten & Permatasari, 2019). Therefore, adults around children, including teachers, should provide an understanding in early childhood about the importance of eating fish. Not only providing an experience of the importance of eating fish, but teachers should also be able to invite children to want and like to eat fish (Nisa' et al., 2024). Besides being beneficial for brain growth and development, fish has abundant natural potential in the city of Probolinggo, so children need to know it early. The introduction of local natural potential from an early age needs to foster a child's love for the area where they live (Furqan et al., 2020).

However, getting young children interested in eating fish is not an easy matter. Persuasive communication is needed, so children are curious without feeling forced (M.Misri & Anhar Fazri, 2022). In this case, an APE (Educational Props) can be a medium to introduce the natural potential of the city of Probolinggo as well as invite children to be interested in eating fish. This is because APE is a game that contains elements of education. As explained by Depdiknas (Andrianie et al., 2019), the characteristics of APE must meet the following categories: tools intended for early childhood; serves as a medium for optimizing children's growth and development, and can be used in various ways, forms, and with different child development goals; safe for children, can encourage children's activity and creativity, are constructive and contain an educational value (Hidayat et al., 2024).

Seeing the gap between the natural potential in the city of Probolinggo and the facts on the ground, KKN students took the initiative to conduct training on making APE based on the natural potential for TK Sinar Harapan, which is a service partner, one of the PAUD institutions in Kedopok sub-district. It is intended that Sinar Harapan Kindergarten teachers can introduce the natural potential of the city of Probolinggo as well as invite children to be interested in eating fish. In addition, it is also known that the DPKPP (Department of Agriculture, Food Security & Fisheries of Probolinggo City) is implementing the "GEMA INSANI (Eating Movement for Animal Protein Source Fish)" programs. Of course, the manufacture of the APE can be an intermediary for Sinar Harapan Kindergarten in supporting the GEMA INSANI program.

Previously, several APE-making services had also been carried out. Like PKM conducted by Yuniarni (Yuniarni et al., 2019), The PKM trains PAUD teachers to be able to make APE in the form of a busy book that utilizes multimedia animation of gymnastics with typical West Kalimantan songs. Then in the PKM conducted by Endrawati & Sutrisno [10], BA teacher Aisyiah Bulakrejo II and TK Desa Sidorejo 03 were trained to make APE from used materials found around schools so that teachers can make APE that is quality, innovative, and creative. Meanwhile, in the PKM conducted by Hasanah (U. Hasanah et al., 2022), the service is carried out by empowering the RA Wasilatul Huda Surabaya Udik's teacher to use used goods such as cardboard and wood in APE to reduce the amount of waste around the school.

As for this service, PAUD teachers are not only trained to make ordinary APE but are trained to use used goods to become APE based on the natural potential of the city of Probolinggo. Besides reducing the amount of waste around the school, teachers can also introduce the natural potential of the town of Probolinggo in the form of fish while

attracting children to want to eat fish. This is a novelty and distinguishes it from the previous PKMs.

Inviting children to want to eat fish and knowing the importance of fish for brain growth and development must be taught from an early age (Elwarak, 2018) because fish is included in the composition of "4 healthy five perfect," which is helpful for the body (Wardhani et al., 2019) moreover if the fish is the natural potential of the area in abundance. However, if children are accustomed to consuming less nutritious fast food, a new, more effective strategy is needed (Baharun, 2023). Therefore, training on using used goods as APE based on potential natural needs to be carried out so that teachers can introduce and invite children to be interested in eating fish in an exciting and fun way.

RESEARCH METHODS

The service program, titled "Training on the Utilization of Used Goods as APE Based on Natural Potential," was carried out by three students from the Islamic Religious Education Study Program at Sinar Harapan Kindergarten. The service was implemented at Sinar Harapan Kindergarten, located in Kedopok sub-district, Probolinggo city. The program involved three teachers and one principal, who actively participated in the training. The implementation of this service program was divided into several stages, including preparation, training, and trial phases.

Preparation Phase

In the preparation phase, the KKN students conducted a field survey to assess the condition of the location and identify potential problems that could be addressed through the service program. After the survey, the students visited Sinar Harapan Kindergarten in Kedopok sub-district to provide the teachers with information about the upcoming training and determine the schedule for the activities.

Training Stage

The training phase began with material counseling, where the KKN students presented information to the kindergarten teachers about the importance of fish consumption for children's brain development, as well as the natural potential of Probolinggo city. This session aimed to raise awareness among the teachers about the relevance of using locally sourced materials to create educational props (APE) that would engage children in learning about fish and its nutritional benefits.

Following the counseling, the students conducted a hands-on training session on making APE using used goods, emphasizing how these materials could be transformed into creative educational tools. The APE created in this session served as a medium for persuading young children to develop an interest in eating fish, while also familiarizing them with the rich natural potential of Probolinggo.

To further enhance the effectiveness of the APE, the KKN students demonstrated how to use the props by engaging the children in a story about fish from Probolinggo's sea, emphasizing the nutritional benefits of fish for brain growth. During this demonstration, the students moved cardboard fish on the APE, providing an interactive and engaging way for the children to learn.

Trial Phase

In the trial phase, the kindergarten teachers used the completed APE to test its effectiveness with the children. This stage was crucial in evaluating how well the APE influenced the children's understanding and interest in fish as a valuable natural resource of Probolinggo. The results from the trial phase helped assess the impact of the APE in

making the learning process enjoyable and informative for the children, promoting both awareness of local natural resources and the importance of fish consumption for brain development.

RESULTS AND DISCUSSION

Implementation of Extension

Before visiting Sinar Harapan Kindergarten, KKN students planned the counseling. From the planning, the counseling will be carried out with the Kindergarten teacher Sinar Harapan as the object of the counseling. For this reason, KKN students visited Sinar Harapan Kindergarten on Monday, April 11, 2022. The visit conveyed information related to the counseling program offered to Sinar Harapan Kindergarten teachers. In addition, KKN students also determined the date for the counseling with the head of the TK Sinar Harapan. In that case, it was agreed that the counseling would be held on Wednesday, April 13, 2022, at Sinar Harapan Kindergarten.

On April 13, 2022, the counseling will begin at 09.30 WIB after all Sinar Harapan Kindergarten students return home. This counseling was attended by 3 teachers of TK Sinar Harapan and 1 head of TK Sinar Harapan. The counseling contains material on the importance of eating fish in early childhood and introduces the types of fish from the natural potential of the city of Probolinggo. The aim is to remind the teacher's role as early childhood educators in the school environment so that they can invite children to recognize the potential of the natural surroundings and ask them to want to eat fish. The implementation of this counseling lasted for \pm 30 minutes, then continued with training on making APE from used goods.

Training Implementation

After the counseling, the training continued with training on using used goods as APE based on natural potential. In this training, used goods used as the primary material are cardboard to be used as an aquarium containing fish produced by the city of Probolinggo. During a visit to Sinar Harapan Kindergarten, KKN students had informed of used goods and equipment that must be prepared to make APE, namely as follows: 1. two used cardboard boxes, 2 seven sheets of colorful folded paper, 3. three bottle caps plastic, 4. thread and needle, 5. glue gun, 6. ruler, pencil, scissors, cutter.

The first step of making APE from these materials is to create a pattern on one piece of rectangular cardboard measuring 40x30 cm, two bits of 20x40 cm, and two pieces of 20x30 cm to make an aquarium. All the pieces of cardboard will be combined with a glue gun to resemble an open frame. However, one pattern measuring 40x30 cm was drawn and colored to resemble an underwater scene. While a design measuring 20x30 cm, which will be used as the top of the aquarium, is given a longitudinal incision using a cutter as a fish trajectory. Second, form colorful folded paper so that it resembles fish from the city of Probolinggo so that the fish look more attractive and alive. The fish are then hung with a thread to the bottle cap that has been perforated in the middle. Third, combine each side of the aquarium using glue. Fourth, put the fish hanger at the top of the aquarium that has been given an elongated hole. The long gap becomes a track to move the fish hanger so that the fish can be seen swimming in the aquarium (there are three tracks).

During the training on April 13, 2022, the Sinar Harapan Kindergarten teacher was more enthusiastic about participating in the training. For \pm 1 hour, KKN students

accompanied the kindergarten teacher to make APE, from measuring cardboard, cutting and combining each part, to making fish from folded paper and then hanging them on an aquarium. Although the training was aimed at creating a new APE, Sinar Harapan Kindergarten teachers followed it nicely and quickly because, according to Mrs. Urfiani, one of the teachers stated that Sinar Harapan Kindergarten teachers were used to making handicrafts into APE.



Figure 1. Training on Making APE from Used Goods with Kindergarten Teacher Sinar Harapan

No significant difficulties were encountered during the training. Kindergarten teacher Sinar Harapan divides her tasks; some measure and cut cardboard, make fish from folded paper, prepare fish hangers from used threads and bottle caps, and decorate cardboard to resemble an aquarium. The division of tasks is carried out so that the manufacture of APE can be completed immediately.

After the APE was completed, the KKN student immediately gave an example of the use of the APE, namely by telling about the marine products of the city of Probolinggo and their benefits while moving the fish in the aquarium. Of course, kindergarten teacher Sinar Harapan is also good at practicing it because he is used to communicating persuasively to students so that the story about fish in the city of Probolinggo using APE becomes more interesting.



Figure 2. The Result of Making APE from Used Goods based on the Natural Potential



Figure 3. The Result of Making APE from Used Goods based on the Natural Potential

From the implementation of counseling on the importance of eating fish and training on making APE from used goods based on natural potential, Sinar Harapan Kindergarten teachers are increasingly aware of the teacher's role in inviting and educating children to eat healthy food, especially fish which is essential for children's growth and development. This awareness can be seen in the Kindergarten teacher Sinar Harapan's efforts to practice directly using APE in front of students the next day.

In addition, the Head of TK Sinar Harapan stated that he would seek to cooperate with SMEs that produce processed fish such as nuggets as one of the PMT (Supplementary Food Provision) for Sinar Harapan Kindergarten students (Ariefin, 2022). The desire to cooperate shows that Sinar Harapan Kindergarten has a strong desire to participate in introducing the potential of nature and invites students to be interested in eating. It is in line with the opinion of Nugraha & Sari (Nugraha & Sari, 2017), which states that a teacher has a vital role in introducing nature's potential to foster a national spirit. Moreover, if the natural potential in question is nutritious food, then the teacher is also obliged to teach students to know the benefits and consume it (Jamilah, 2020)(R. Hasanah, 2024).

Processing used goods to become APE based on natural potential is an effort not only as an educational medium but also as an effort to reduce waste in the surrounding environment (Hartiningrum et al., 2020). Of course, these efforts can also train the creativity of teachers and children who use them. Thus, the APE based on natural potential with the primary material of cardboard waste made by the Sinar Harapan Kindergarten teacher has several plus values, including containing educational and persuasive elements (so that children are interested in eating fish), being creative, and showing a spirit of caring for the environment (by encouraging children to eat fish). using used goods).

Regarding the sustainability of the program carried out by the KKN students of the Early Childhood Education Study Program, plans will then be made to conduct counseling and training in other schools so that the insight of the residents of the city of Probolinggo will develop. In addition, there is a need for collaboration between PAUD teachers and DPKPP so that the introduction of the natural potential of the city of Probolinggo and the GEMA INSANI program becomes more even. Of course, this requires more in-depth planning to be carried out according to the target.

CONCLUSION

Training using used goods as APE based on the natural potential of the city of Probolinggo can be a medium to introduce the possibility of nature and train PAUD teachers to use used goods in APE quite effectively. This can be seen from the smooth making of APE with the kindergarten teacher Sinar Harapan and the teachers' enthusiasm to practice it in front of students. However, this service has not sought an effective program so that students reduce eating foods that are not nutritious. It can be a space for the development of other devotions. However, other services that want to develop the results of this service need also to review the natural potential of the area where the service is located and the condition of the population so that the service can run according to its objectives and obtain optimal results.

REFERENCES

- Andhikawati, A., Junianto, J., Permana, R., & Oktavia, Y. (2021). Review: Komposisi Gizi Ikan Terhadap Kesehatan Tubuh Manusia. *Marinade*, 04(02), 76–84.
- Andrianie, P. S., Yuniati, R., & Giyanti, I. (2019). Pendayagunaan Alat Permainan Edukatif (APE) Berbasis Multiple Intelligences (MI) di Kelurahan Mojosongo. *Abdimas Dewantara*, 2(2), 182. <https://doi.org/10.30738/ad.v2i2.3003>
- Ariefin, S. (2022). Kerja Sama UKM. In *Wawancara Kepala TK Sinar Harapan* (p. 1).
- Baharun, H. (2023). Quality Improvement in Increasing Public Trust Using the Failure Mode and Effect Analysis (FMEA) Method. *Tarbawi: Jurnal Keilmuan Manajemen Pendidikan*, 9(01), 59–68. <https://doi.org/10.32678/tarbawi.v9i01.7982>
- Elwarak, R. (2018). Perancangan Buku Pop-Up Mengenai Manfaat Buah dan Sayur Untuk Anak-anak. *DEKAVE: Jurnal Desain Komunikasi Visual*, 8(1), 1–19.
- Endrawati, S., & Sutrisno, T. A. (2018). Pembelajaran Model Interaktif Ramah Orang Tua dan Guru (PKM BA Aisyiah Bulakrejo II dan TK Desa Sidorejo 03). *Publikasi Hasil Penelitian Dan Pengabdian Kepada Masyarakat*, 1, 553–564.
- Furqan, M. H., Yanti, S., Azis, D., Kamza, M., & Ruslan, R. (2020). Analisis Konten Nilai Cinta

- Tanah Air (Nasionalisme) dalam Materi Mata Pelajaran Kurikulum Geografi. *Jurnal Serambi Ilmu*, 21(1), 48–63. <https://doi.org/10.32672/si.v21i1.1882>
- Hartiningrum, E., Maarif, S., & Rakhmawati, N. (2020). Pemanfaatan Limbah Kain Perca Menjadi Produk Bernilai Ekonomis. *COMVICE: Journal Of Community Service*, 4(2), 37–42. <https://doi.org/10.26533/comvice.v4i2.667>
- Hasanah, R. (2024). *Improving Quality Through the Lean Six Sigma Approach*. 02(01), 1029–1037.
- Hasanah, U., Kisno, Rizqiyani, R., & Sari, E. M. R. (2022). Pelatihan Pembuatan Alat Permainan Edukatif Berbasis Bahan Bekas Bagi Guru. *Jurnal Altifani: Penelitian Dan Pengabdian Kepada Masyarakat*, 2(2), 106–115. <https://doi.org/10.25008/altifani.v2i2.213>
- Hidayat, M. N. F., Baharun, H., Aisyah, E. N., Zaini, A. W., Sanjani, M. A. F., & Hasanah, R. (2024). Bridging the Digital Divide: The Role of Public Relations in Enhancing Digital Inclusivity. *2024 10th International Conference on Education and Technology (ICET)*, 59–66.
- Inten, D. N., & Permatasari, A. N. (2019). Literasi Kesehatan pada Anak Usia Dini melalui Kegiatan Eating Clean. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 3(2), 366. <https://doi.org/10.31004/obsesi.v3i2.188>
- Jamilah, S. (2020). Peran Guru Dalam Menangani Asupan Gizi Seimbang Pada Anak Melalui Kreasi Makanan di TK Asiyiyah 1 Ranggo Kota Bima. *Jurnal Elkatarie Jurnal Ilmu Pendidikan Dan Soisal*, 3(1), 353–372.
- M. Misri, D. N. E., & Anhar Fazri. (2022). Metode Persuasif Kantor Camat Labuhanhaji Barat Dalam Mensosialisasikan Vaksinasi Kepada Masyarakat. *MUKASI: Jurnal Ilmu Komunikasi*, 1(2), 138–147. <https://doi.org/10.54259/mukasi.v1i2.839>
- Nisa', K., Mundiri, A., Manshur, U., & Munir, Z. (2024). Integrating Situational Leadership and Traditional Values: Enhancing Student Discipline in Islamic Boarding Schools Through Holistic Training Programs. *Communautaire: Journal of Community Service*, 3(2), 138–151. <https://doi.org/10.61987/communautaire.v3i2.463>
- Nugraha, N., & Sari, N. i D. (2017). Peran Guru Dalam Upaya Pembentukan Wawasan Kebangsaan Pada Siswa Kelas Viii Smpn 1 Barat Kabupaten Magetan Tahun Ajaran 2015/2016. *Citizenship Jurnal Pancasila Dan Kewarganegaraan*, 5(1), 13. <https://doi.org/10.25273/citizenship.v5i1.1147>
- Prameswari, G. N., Kurnia, A. R., & Susilo, M. T. (2019). Peningkatan Pengetahuan Ibu melalui Penyuluhan dan Pelatihan Pembuatan Makanan Olahan Ikan. *Higeia Journal of Public Health Research and Development*, 3(3), 84–94.
- Probolinggo, D. K. (2022). *PRODUKSI TANGKAP – Dinas Pertanian , Ketahanan Pangan & Perikanan Kota Probolinggo*. Dpkpp.Probolingkokota.Go.Id.
- Redyanto, F. W., Salahudin, & DS, V. S. (2018). Model Kerjasama Antar Stakeholders Dalam Pengembangan Wisata Budaya Dusun Sejo Kabupaten Pasuruan. *LOGOS: Journal of Local Government Issues*, 1–25.
- Wardhani, W. D. L., Jatmikowati, T. E., & Rahman, A. U. (2019). Pangan Thoyyibah: Mengenalkan Gaya Hidup Sehat Pada Anak Usia Dini. *Early Childhood : Jurnal Pendidikan*, 3(2), 1–6.
- Yuniarni, D., Atiq, A., & Sari, R. P. (2019). Multimedia Interaktif Berbasis Sumber Daya Alam dan Budaya Khas Kalimantan Barat Dalam Pembelajaran PAUD. *Jurnal Buletin Al-Ribaath*, 16(1), 16. <https://doi.org/10.29406/br.v16i1.1513>