



Utilization of Eco Printing Media in Developing Fine Motor Skills of Class B2 Children at RA Perwanida Metro

Dwi Septinasarri¹, *Ferdian Utama¹, Yuning Eka Rahma Wati¹

¹ Universitas Ma'arif Lampung, Indonesia



ferdianutama@umala.ac.id*

Abstract

This study aims to determine and describe the use of eco-printing media in developing fine motor skills in group B2 children at RA Perwanida Metro in the 2025/2026 academic year. The background of the study is based on the importance of using innovative and hands-on learning media to stimulate small muscle coordination and accuracy in early childhood. This study uses a qualitative approach with a descriptive research type. The research subjects consisted of 15 children in group B2, class teachers, and the principal. Data collection techniques were carried out through observation, interviews, and documentation. Data analysis used the Miles and Huberman model which includes data reduction, data presentation, and drawing conclusions, with data validity tested through triangulation of sources, techniques, and time. The results of the study indicate that the use of eco-printing media is carried out through the stages of planning, preparation, implementation (pounding), and evaluation systematically. This activity has proven effective in developing children's fine motor skills, especially in aspects of eye-hand coordination, finger muscle strength, accuracy, and independence. In addition, this natural material-based media increases children's enthusiasm and active participation in the learning process.

Keywords: Eco Printing, Learning Media, Fine Motor, Early Childhood

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INTRODUCTION

Early Childhood Education (PAUD) is a developmental effort aimed at children from birth to six years of age through educational stimulation to support their physical and spiritual growth and development. Early childhood is a crucial period in development because various aspects of a child's abilities develop rapidly and require appropriate and continuous stimulation (Suryana, 2021). Therefore, the learning process for early childhood needs to be designed according to the characteristics of child development through active, concrete, and enjoyable activities that provide opportunities for children to experience firsthand.

One important aspect of development in early childhood is physical motor skills, particularly fine motor skills. Fine motor skills relate to the ability to use small muscles, particularly the fingers and wrists, which require hand-eye coordination. These skills form the foundation for various activities, such as drawing, cutting, folding, pasting, writing, and other manipulative activities (Hurlock, 2018; Rudiyanto, 2021).

Fine motor development cannot develop optimally without appropriate stimulation. Children need opportunities to engage in activities that involve repetitive, directed, and enjoyable hand movements. Learning activities that use concrete media can help children gain hands-on experience, making the learning process more meaningful (Arsyad, 2019). Learning media can also help teachers deliver more engaging learning experiences that are tailored to the characteristics of early childhood (Asmariani, 2021). The use of varied media is crucial in early childhood education. Learning media not only serves as a tool for teachers to deliver material but also provides opportunities for children to explore, experiment, observe, and create. Utilizing materials found in the surrounding environment can also provide more concrete learning experiences for children (Sadiman et al., 2024).

Based on a pre-survey conducted in class B2 RA Perwanida Metro for the 2025/2026 academic year, it was found that children's fine motor skills still vary and have not developed optimally. Of the 15 children observed, most of the children were still in the Not Yet Developing (BB) and Starting to Develop (MB) categories, especially in the activities of cutting according to patterns, folding simple shapes, and sticking correctly. This condition indicates the need for activities that provide more stimulation for children's eye-hand coordination and manipulative skills. These findings are the results of the researcher's pre-survey in class B2 RA Perwanida Metro.

One alternative medium that can be used to provide this stimulation is *eco-printing*. *Eco-printing* is a technique for creating patterns on fabric using plant parts, such as leaves and flowers, resulting in natural shapes and colors on the medium used (Flint, 2008; Irianingsih & Sariningsih, 2018). The use of natural materials in art activities provides an opportunity for children to interact directly with the environment while simultaneously producing works of art. When applied to early childhood, the *pounding technique* involves placing leaves or flowers on a cloth, covering it with a lining, and gently striking the area with a hammer. This activity involves various hand movements that require coordination, grip strength, movement control, and precision. Environmentally-based art activities can also provide children with creative experiences (Pratama & Lestari, 2023).

The use of *eco-printing* is relevant to fine motor development because during the process, children not only see the finished product but also participate directly in each stage of the activity. Children can select natural materials, arrange leaves or flowers, position materials, hold tools, hammer, and even open and examine the print. This activity provides opportunities for children to manipulate objects directly and repeatedly. Research on natural materials-based activities shows that art activities involving direct material manipulation can be used as an alternative to stimulate fine motor skills in early childhood (Mulyani, 2022). Furthermore, the use of environmentally based art media can provide learning experiences that combine creativity and physical motor development in children (Pratama & Lestari, 2023).

Based on the description, the use of *eco printing* is interesting to study as one of the learning media in developing children's fine motor skills. The novelty of this research lies in the description of the application of *eco printing* through the *pounding technique* by utilizing natural materials available in the school environment as a learning activity for children in group B2 aged 5–6 years. This study aims to determine and describe the use of *eco printing media* in developing the fine motor skills of children in group B2 at RA Perwanida Metro in the 2025/2026 Academic Year.

METHOD

This study employed a qualitative approach with a descriptive approach. This approach was used to obtain an in-depth understanding of the process of utilizing *eco-printing media* in children's fine motor skills learning activities (Moleong, 2018; Sugiyono,

2022). The study was conducted at RA Perwanida Metro Pusat during the even semester of the 2025/2026 academic year, namely from March to April 2026.

The research subjects consisted of 15 children from group B2, one class teacher, and the principal. Subject selection was based on the consideration that these parties were directly involved in the learning process and the implementation of *eco-printing activities*. Data were collected through observation, interviews, and documentation. Observations were used to observe the process and development of children's fine motor skills, interviews were used to obtain information from teachers and the principal, while documentation was used as supporting data for the research. Data analysis was conducted interactively through three stages: data reduction, data presentation, and conclusion drawing (Sugiyono, 2022). Data validity was ensured through triangulation of sources, techniques, and time to enhance the credibility of the research data.

RESULTS AND DISCUSSION

Implementation of Eco Printing Learning

Based on observations, interviews, and documentation, the use of *eco-printing media* in group B2 of RA Perwanida Metro was implemented through several stages: planning, preparation, implementation of the *pounding technique*, and evaluation. The use of learning media designed according to learning objectives can help teachers create more focused activities and provide concrete learning experiences for children (Arsyad, 2019).

Planning Stage

In the planning stage, teachers develop learning activities by incorporating aspects of fine motor development and natural-material-based art activities. Planning is necessary to ensure that learning activities have clear objectives and can be tailored to the child's developmental level (Suryana, 2021).

The teacher determines the materials and tools to be used and adapts the activities to the abilities of the children in group B2. This planning serves as the basis for ensuring that *the eco-printing activity* not only produces works of art but also stimulates the children's fine motor skills.

Preparation Stage

During the preparation stage, the teacher prepares the tools and materials to be used in the activity. These include plain cotton cloth, a wooden hammer or other safe hammer, plastic sheeting, a wooden cutting board, and leaves and flowers gathered from around the school.

Using natural materials in learning provides opportunities for children to learn about the environment while engaging in creative activities. Natural materials such as leaves and flowers can be used to create natural motifs using *eco-printing techniques* (Flint, 2008; Irianingsih & Sariningsih, 2018).



Figure 1. Tools and Materials for Eco Printing Media

Pounding Technique Implementation Stage

In the implementation stage, children place leaves or flowers onto the fabric according to the desired pattern. Afterward, the material is covered with plastic wrap. They then use the *pounding technique*, which involves gently and repeatedly hitting the surface containing the leaves or flowers with a hammer.

This technique provides children with hands-on experience in manipulating materials. They must aim the beater at the right spot to transfer the plant pigments to the fabric. The *eco-printing process*, which utilizes plants, produces patterns based on the natural shapes and pigments of the materials used (Flint, 2008).



Figure 2. Process of a Child Performing the Pounding Technique

Evaluation and Finishing Stage

After the beating process is complete, the fabric is unwrapped and the natural materials are removed from the surface. The prints are then dried. The teacher gives the children the opportunity to view and observe their own work.

Evaluation is carried out by providing appreciation for the process and results of children's work. Appreciation activities are important because children need positive reinforcement to build confidence in completing learning activities (Suryana, 2021).



Figure 3. Eco Printing Work Results of Group B2 Children of RA Perwanida Metro

Results of Children's Fine Motor Development Achievements

Based on observations during the activity, there was evidence of improvement in several of the children's fine motor skills after participating in the *eco-printing activity*. This improvement was particularly evident in hand-eye coordination, hand strength, accuracy, and independence.

Table 1. Comparison of Children's Fine Motor Development

Development Indicators	Initial Conditions	Achievements After Activities
Eye and hand coordination	The child still has difficulty placing the pattern.	Children are able to arrange leaves and direct the bat at the target.
Finger and hand muscle strength	Tool grip is still weak/unstable.	Children are able to hold the tool more stably and control the power of the blow.
Accuracy and neatness	The arrangement of materials often shifts and is messy.	Children are able to arrange and tidy up the arrangement of materials on the cloth.
Independence	Children still need the teacher's help.	Children are able to complete activity stages more independently.

Based on the observations presented in Table 1, the use of *eco-printing media* through the *pounding technique* demonstrated improvements in several aspects of children's fine motor skills. This improvement was evident in hand-eye coordination, finger and hand muscle strength, precision, and independence. These findings suggest that activities involving direct material manipulation provide children with opportunities to use and control hand movements in a more directed manner (Rudiyanto, 2021).

Eye and Hand Coordination Stimulation

Hand-eye coordination is a crucial skill in a child's fine motor development. This skill relates to the ability to integrate information received through vision with precise hand movements. Hand-eye coordination is essential for various activities, such as drawing, cutting, writing, pasting, and other manipulative activities (Hurlock, 2018; Rudiyanto, 2021).

Based on research findings, *eco-printing activities* provide children with the opportunity to practice this coordination through arranging materials and performing *pounding* techniques. Children must pay attention to the position of the leaves or flowers

before pounding. Once the materials are placed, the child directs the pounding tool to the designated area.

This activity requires children to use their eyesight to locate targets and move their hands accordingly. The more frequently children engage in manipulative activities, the more opportunities they have to practice their motor coordination. The use of concrete media in early childhood learning can provide hands-on experiences that help children understand and perform activities through physical activity (Arsyad, 2019).

Thus, based on research findings, *eco-printing* is not only an activity that produces works of art, but can also be an activity that stimulates children's hand-eye coordination.

Strengthening Finger and Wrist Muscles

Fine motor development requires the ability to control small muscle movements, particularly in the fingers and hands. This ability develops through practice and stimulation, carried out gradually according to the child's development (Rudiyanto, 2021).

In *eco-printing activities*, children engage in activities such as holding leaves, arranging materials, holding a bat, and repeatedly hitting them. These activities involve the use of muscles in the fingers, palms, and wrists.

Observations showed that at the beginning of the activity, some children still had difficulty holding the tools steadily. After participating in the activity, the children began to hold the tools better and control their punching movements. They also learned to adjust the force of their punches to ensure the material would yield to the mold.

Manipulative activities using concrete objects provide opportunities for children to practice hand movements directly. This aligns with the importance of providing motor stimulation through activities that enable children to actively use and control their body parts (Hurlock, 2018; Rudiyanto, 2021).

Cultivating Accuracy, Neatness, and Patience

Besides developing physical motor skills, *eco-printing* also provides opportunities for children to develop precision. Children need to pay attention to the position of the leaves and flowers to ensure the resulting motif matches the intended arrangement.

Based on observations, some children initially placed their materials in a disorganized manner and needed teacher guidance. After receiving guidance and participating in activities, they began to be able to arrange their materials more neatly. They also learned to gradually tap the leaves to ensure they were imprinted on all parts of the leaf.

Art activities using natural materials provide opportunities for children to explore shape, texture, color, and composition. Natural-based activities can also provide creative experiences while also developing motor skills through manipulative activities (Mulyani, 2022; Pratama & Lestari, 2023).

Thus, *eco printing activities* can provide stimulation that is not only related to hand movements, but also to children's accuracy in following the stages of the activity.

Cultivating Independence and Enthusiasm for Learning

Using *eco-printing media* offers a unique learning experience because children are directly involved in the process of creating their artwork. They not only receive explanations from the teacher but also participate in activities themselves, from selecting materials, arranging leaves, beating materials, and viewing the printed results.

The use of interesting and concrete media can increase children's involvement in the learning process because children gain direct experience through objects that can be observed and manipulated (Asmariyani, 2021; Sadiman et al., 2024).

Based on the research results, this direct involvement was evident in the children's enthusiasm during the activities. They showed interest in selecting materials and

attempting to create patterns on the fabric. Some children, who initially needed teacher assistance, gradually became more independent in completing the activities.

Independence in learning activities can develop when children are given the opportunity to try an activity on their own with appropriate guidance. In *eco-printing activities*, the teacher acts as a facilitator, providing direction and assistance when needed, but still allowing children to complete the activity stages on their own.

This shows that the use of natural material-based media can be an alternative learning method that combines artistic activities, environmental exploration, and stimulation of children's fine motor development.

The Role of Teachers in Implementing Eco Printing

Eco-printing activities also depends on the teacher's role in designing, preparing, supervising, and evaluating the activities. Teachers need to ensure that the tools and materials used are appropriate for the children's ages and abilities.

The use of learning media for early childhood requires consideration of child characteristics, learning objectives, safety, and ease of use (Arsyad, 2019). In *eco-printing activities*, teachers provide examples before children begin the activity. They also instruct children on how to use the tools carefully. Teacher guidance is crucial because *pounding* involves using a hammer and therefore requires supervision. Teachers not only guide the technique but also provide motivation and appreciation for the children's work. These findings show that learning media will be more optimal if supported by teacher support strategies that are appropriate to the child's needs.

CONCLUSION

Based on the research results, it can be concluded that the use of *eco-printing media* through the *pounding technique* can be used as a learning activity to help develop the fine motor skills of group B2 children at RA Perwanida Metro in the 2025/2026 Academic Year. The implementation of the activity was carried out through the stages of planning, preparation of tools and materials, implementation of the *pounding technique*, and evaluation of the process and results of the children's work. Children's fine motor development is seen in their ability to coordinate their eyes and hands when arranging materials and directing the hammer, their ability to use and control finger and hand strength, their precision in arranging materials and hammering, and their increased independence in completing activities. In addition to developing fine motor skills, *eco-printing activities* also provide an active and enjoyable learning experience because children are directly involved in using leaves and flowers as learning materials. Thus, *eco-printing* can be an alternative natural-materials-based learning activity that can be implemented to stimulate fine motor skills in early childhood. Its implementation should be tailored to the child's abilities and carried out with teacher supervision to ensure the activity is safe and the learning objectives are achieved.

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