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THE EFFECT OF USING ECOPRINT LEAVES MEDIA ON THE LITERACY DEVELOPMENT OF CHILDREN AGED 4–5 YEARS

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Abstract:

This study aims to determine the effect of Ecoprint Leaves media on the literacy development of children aged 4–5 years at TK Al-Adalah, Purwakarta Regency. The method used was a pre-experimental design with a one-group pretest–posttest approach. The research sample consisted of 20 children from Group A. The results showed a significant improvement in the children's ability to recognize letters, copy, arrange words, and express their thoughts through symbols and drawings after the intervention. The Ecoprint media proved to be a concrete and enjoyable learning alternative for stimulating early literacy in young children. This medium also enhanced motivation, concentration, and creative exploration, which form the foundation of future literacy skills. The Ecoprint Leaves media was proven effective in improving early childhood language and literacy development because it is concrete, engaging, and provides multisensory learning experiences. It helps children more easily understand the concepts of letters and words and improves their storytelling and expressive skills through both drawing and writing.

Keywords: *ecoprint, literacy, early childhood, early literacy*

Abstrak:

Penelitian ini bertujuan untuk mengetahui pengaruh media Ecoprint Leaves terhadap perkembangan keaksaraan anak usia 4–5 tahun di TK Al-Adalah kabupaten Purwakarta. Metode yang digunakan adalah pre-eksperimen dengan desain one group pretest-posttest. Sampel penelitian adalah 20 anak kelompok A. Hasil penelitian menunjukkan adanya peningkatan signifikan pada kemampuan mengenal huruf, menyalin, menyusun kata, serta mengekspresikan pikiran melalui simbol dan gambar setelah diberikan perlakuan. Media ecoprint terbukti menjadi alternatif pembelajaran yang konkret dan menyenangkan dalam menstimulasi literasi awal anak usia dini. Media ini juga mampu meningkatkan motivasi, daya konsentrasi, dan eksplorasi kreatif anak yang menjadi dasar keterampilan literasi di masa depan. Media Ecoprint Leaves terbukti efektif dalam meningkatkan perkembangan bahasa keaksaraan anak usia dini karena media ini bersifat konkret, menarik, serta memberikan pengalaman belajar yang bersifat multisensori. Media ini mampu membantu anak memahami konsep huruf dan kata secara lebih mudah serta meningkatkan keterampilan anak dalam bercerita atau mengungkapkan pikiran melalui gambar maupun tulisan.

Kata Kunci: *ecoprint, keaksaraan, anak usia dini, literasi awal*

INTRODUCTION

Early childhood education plays an essential role in shaping the foundation of children's cognitive, affective, and psychomotor abilities. One of the key aspects that needs to be developed at this stage is language and literacy skills. These skills include understanding symbols, expressing ideas both orally and in writing, and recognizing the relationship between letters and sounds. Literacy development serves as an important indicator of a child's readiness to enter primary education.

Unfortunately, preliminary observations at TK Al-Adalah revealed that most children aged 4–5 years had not yet shown optimal literacy development. Many children struggled to recognize letters, identify the initial letter of an object, or copy simple words. This condition indicates the need for a more engaging, contextual, and enjoyable learning approach.

The Ecoprint Leaves learning media is an environmentally based innovation that can be used to stimulate children's language and literacy development. By using leaves and flowers as printing tools, children are not only involved in creative and explorative activities but are also given opportunities to recognize symbols, arrange sentences, and express ideas both orally and in writing.

The problem of developing literacy among early childhood learners is not only found at TK Al-Adalah but is also a common phenomenon in many early childhood education institutions. Many children aged 4–5 years have not yet reached the expected stage of literacy development. One contributing factor is the use of less varied teaching methods, which tend to be one-directional and lack interaction with concrete media that support children's exploration.

Early childhood is a critical period of rapid growth physically, cognitively, and linguistically. Children learn best through play and direct experience. Therefore, learning that relies solely on lectures, drills, or worksheets tends to be less effective in fostering literacy interest. This highlights the need for alternative media that bridge literacy concepts with the child's real-world experiences.

The Ecoprint Leaves media emerges as a solution that combines nature-based, artistic, and linguistic learning. The activity of printing leaves not only introduces children to the diversity of shapes and colors but also enriches their vocabulary, encourages sentence formation based on print results, and allows them to express emotions through pictures and stories. This creative process engages children actively and provides them with enjoyable hands-on learning experiences.

For example, when a child chooses a teak leaf and places it on fabric, they are invited to name the leaf, describe its color, and write or copy its initial letter. This interaction simultaneously promotes phonological, semantic, and narrative abilities-aligning with the thematic learning approach used in Indonesia's early childhood curriculum.

Moreover, the ecoprint medium supports inclusive learning, as it caters to various learning styles: visual (through colors and shapes), kinesthetic (through arranging and pressing leaves), and auditory (through discussion and storytelling). This activity is ideally implemented in small groups, allowing teachers to provide guidance tailored to each child's developmental level.

Therefore, this study is important to scientifically examine the extent to which the Ecoprint Leaves media can influence the literacy development of children aged 4–5 years. The findings are expected to contribute to the development of more contextual, creative, and developmentally appropriate learning methods and media within early childhood education settings.

RESEARCH METHOD

This study employed a quantitative approach with a pre-experimental design. This approach was chosen because the researcher aimed to determine the measurable and objective effect of using Ecoprint Leaves media on the literacy development of early childhood learners. The specific design used was the One Group Pretest–Posttest Design, which involves a single group of subjects receiving a treatment (intervention) and being measured both before and after the treatment.

This design allows the researcher to compare the initial and final conditions of children's literacy development after the intervention through learning activities using Ecoprint media. Although this design does not include a control group, it is adequate to determine whether there are observable changes or improvements within the experimental group.

The study was conducted at TK Al-Adalah, located in Pasanggrahan Village, Bojong District, Purwakarta Regency. The research subjects consisted of 20 children aged 4–5 years who were members of Group A. Subjects were selected purposively, based on the criterion that these children showed low literacy development according to the teacher's initial observations.

The subjects displayed heterogeneous initial abilities, but all were within the same age range and guided by the same teacher, ensuring that the treatment could be administered evenly and systematically.

Data were collected through direct observation of children's activities before and after the intervention. The researcher used a literacy development observation sheet designed based on the language development indicators from the Child Development Achievement Standards (STPPA) of the Indonesian Ministry of Education and Culture.Penelitian ini menggunakan pendekatan kuantitatif dengan jenis pre-eksperimental design.

The observed indicators included: Ability to recognize letter symbols, Ability to mention the initial letter of an object's name (in this case: the name of the leaf or ecoprint result), Ability to copy letters or simple words, Ability to form simple sentences and Ability to express ideas orally and/or in writing based on the ecoprint activity results

Each indicator was assessed using a four level qualitative scale: ND (Not Yet Developed), BD (Beginning to Develop), DE (Developing as Expected), WD (Well Developed).

The research procedure was carried out in three main stages: Preparation (Pre-Observation), Treatment, and Evaluation (Posttest).

Preparation Stage: The researcher coordinated with the class teacher and school principal to explain the research objectives, prepare observation sheets, and conduct initial observations of children's literacy development. The pretest results served as the baseline data.

Treatment Stage: Children were given learning activities using Ecoprint media over six sessions, each lasting 45–60 minutes. Activities included selecting leaves, identifying the name and shape of leaves, printing leaves using hammering or steaming techniques, and engaging in copying, writing, and storytelling based on their ecoprint artwork.

Evaluation Stage: After completing all the treatment sessions, a follow-up observation using the same instrument was conducted to assess the children's

literacy development. The posttest results were compared with the pretest results to identify any improvements or changes.

Data were analyzed quantitatively using descriptive and inferential statistical methods. Descriptive statistics were used to show the distribution of children's literacy development scores in the pretest and posttest phases in the form of percentages and mean scores. Inferential statistics were applied using a paired sample t-test to determine whether there was a significant difference between the pretest and posttest results.

The test was conducted using SPSS software or simple manual calculations, with a significance level (α) = 0.05. If the significance value (p-value) was less than 0.05, it was concluded that the use of Ecoprint Leaves media had a significant effect on the literacy development of early childhood children.

FINDINGS AND DISCUSSION

The research results showed that there was an improvement in children's literacy development after being given treatment using Ecoprint Leaves media. Before the treatment (pretest), most children were in the "Beginning to Develop" (BD) and "Not Yet Developed" (ND) categories in the literacy indicators. After participating in the Ecoprint activities (posttest), the majority of children showed progress to the "Developing as Expected" (DE) and even "Well Developed" (WD) levels.

Table 1 : Summary of Children's Development on Five Literacy Indicators

Indikator Keaksaraan	Pretest (Average Skor)	Posttest (Average Skor)
1. Recognizing letter symbols	2,0	3,5
2. Mentioning the initial letter of an object's name	2,1	3,6
3. Copying letters or simple words	1,9	3,4
4. Forming simple sentences	1,7	3,3
5. Expressing ideas orally and/or in writing based on ecoprint results	2,0	3,5

This improvement indicates that the children experienced significant development across five literacy aspects after participating in the ecoprint activities. The results above demonstrate that ecoprint media is highly effective in enhancing children's early literacy skills. The activity of printing leaves provides a multisensory learning experience that helps children understand the concepts of letters, sounds, and words. When children observe the shape of a leaf, say its name, and copy its initial letter, they are simultaneously integrating visual, verbal, and motor aspects of learning.

These findings support Vygotsky's theory, which emphasizes that language development occurs within a socially interactive context. During the ecoprint activity, children do not work individually; instead, they engage in discussion, questioning, and explanation of their work with teachers and peers. Such interactions create a dialogic learning environment, consistent with the principle of scaffolding within the zone of proximal development (ZPD).

The ecoprint activity also aligns with the learning through play approach, which forms the foundation of the early childhood education (ECE) curriculum. Children showed high enthusiasm when directly involved in choosing leaves, arranging compositions, and observing their print results. This indicates that their intrinsic motivation was stimulated an essential factor for long-term learning engagement.

These results are consistent with Indrawati (2020), who found that children participating in ecoprint activities demonstrated an increase in reading interest and listening skills. Similarly, Marlina and Fitriyah (2018) concluded that nature-based media, such as ecoprint, can help build an understanding of literacy concepts in a more contextual and enjoyable way.

The improvement in children's ability to copy words and construct sentences also suggests that they not only understand letter symbols but are beginning to connect these symbols to more complex meanings. In this sense, early literacy is not merely associated with the ability to "read," but also with the capacity to express ideas and interpret symbols meaningfully, as emphasized in the emergent literacy approach.

Observations also revealed that children showed better attention span, eye–hand coordination, and confidence in speaking before their peers. This reinforces the view that learning media stimulating multiple developmental domains holistically have a greater impact on children's learning readiness.

CONCLUSION

Based on the results of the study, it can be concluded that the use of Ecoprint Leaves media has a significant effect on the literacy development of children aged 4–5 years at TK Al-Adalah Pasanggrahan. Improvements were observed in five key literacy aspects: the ability to recognize letter symbols, mention the initial letter of an object's name (such as a leaf), copy letters or simple words, compose simple sentences, and express ideas through drawings and writing.

The ecoprint activity not only provides visual and motor stimulation but also enriches children's linguistic experience through exploration, discussion, and storytelling. This medium supports the principle of concrete, experience-based learning, in line with the integrative thematic approach used in early childhood education curricula. Furthermore, the activity fosters early literacy interest, which serves as a crucial foundation for future academic success.

The study also reveals that enjoyable and child-centered learning can enhance children's motivation, self-confidence, and active participation in learning activities, particularly those related to language and communication. These findings highlight the importance of incorporating creative, nature-based, and multisensory learning media such as ecoprint in early childhood education to support holistic literacy development.

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