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Implementation of Typography Art as a Craft with Eco Print Technique

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Maria Cornelia Wara Candrasari[1*], Rahmawati Rahmawati[2], Febby Bunga Permata Sumardi[3]

[1,2,3]Fine Arts Education Study Program, Faculty of Language and Arts, Universitas Negeri Jakarta

[*]Corresponding Email: cornelia.candrasari@gmail.com

Abstract

The research uses a qualitative method based on research-led practice to explore capital typography (uppercase letters) as a medium for art creation as well as cultural education. The focus of the research includes analysis of motifs, techniques, colors, and materials, with data sources obtained from sources (craftsmen, designers, cultural experts), literature studies, and visual documentation. Data collection was conducted through observation, in-depth interviews, questionnaires (target: students/community), and creative experiments. The ecoprint technique, or eco-printing, is a method of dyeing fabric with natural dyes. In this study, the ecoprint technique, which applies natural dyes to fabric, focused on works featuring capital typography—particularly complex letters like G, Q, and O—to emphasize the value of precision and patience in the craft. The technical challenges of letter formation were utilized as a means of recognizing local wisdom, with each stage documented and critically reflected upon. The resulting work is not only assessed in terms of aesthetics, but also its educational function, namely as a cultural learning tool through a visual approach. Validation involved design experts, educators, and cultural communities to ensure the suitability of the work to the social context. The results show that capital typography can be an effective bridge between art and cultural education, with applicable outputs such as interactive workshops or exhibitions. Audience surveys revealed an increased understanding of cultural values after interaction with the works. This research contributes to the field of cultural preservation through design innovation and a fun, non-formal education model. The implication is that a similar approach can be replicated for other cultural elements, strengthening local identity as well as attracting the younger generation.

Keywords: Typography, Local Wisdom, Research-Led Practice, Cultural Education, Fine Arts

INTRODUCTION

The main problem in applying the Eco-Print technique for typography craft in Jakarta is the suboptimal utilization of local natural resources, even though 63% of Jakarta's area has been converted into settlements and industries (BPS DKI Jakarta, 2023), leaving only 9.8% green open space, far below the standard of Law No. 26/2007 on Spatial Planning (30%). This condition is exacerbated by high air pollution (average Air Pollution Standard Index/ISPU of 85-100 in the "unhealthy" category in 2023, according to DLH DKI Jakarta), which has the potential to reduce the quality of natural plant pigments. Meanwhile, public interest in eco-friendly products is increasing (72% of Jakarta consumers are interested in buying nature-based *handmade* products, based on the Katadata Insight Center survey, 2022), creating both opportunities and challenges in developing Eco-Print techniques that are adaptive to urban environments. In addition, there is no in-depth research on the integration of typography and eco-Print as a sustainable craft, although studies prove the aesthetic potential of Indonesian natural materials (Susyanti et al., 2020).

The application of Eco-Print techniques to typographic craft in Jakarta is not only ecologically relevant, but also economically and culturally strategic. As a city with the highest level of creative consumption in Indonesia (the creative sector's contribution to DKI's GDP reached 7.4% in 2022, according to Bekraf), Jakarta needs sustainability-based innovations to reduce the environmental footprint of the creative industry, especially those that rely on synthetic chemicals. The Eco-Print technique can be a solution, considering that 89% of local plant samples, such as teak leaves, ketapang, and kana flowers in Jakarta, were proven to contain stable natural pigments based on Naini & Hasmah's (2021) research. In addition, this approach is in line with the global trend of *slow design* that emphasizes environmental ethics (Fuad-Luke, 2008), while strengthening the identity of Indonesian crafts amid the dominance of imported products. By involving local communities, such as artisans in Kampung Batik Terogong or creative MSMEs in Tebet, the project also has the potential to create green jobs urgent need considering that 12.5% of Jakarta residents still work in the informal sector with low productivity (BPS DKI Jakarta, 2023).

The application of the Eco-Print technique in typographic crafts also has a high urgency in the preservation and innovation of Indonesian cultural education. Jakarta, as a cultural center as well as a city with 42% of the generation Z population (Bappenas, 2023), faces the challenge of the degradation of understanding of local wisdom, as only 23% of high school students in Jakarta are familiar with traditional natural dyeing techniques based on a survey by LPPM UNJ (2022). In fact, the plant-based Eco-Print method can be an interdisciplinary educational medium that combines the art of typography, biology (study of plant pigments), and the cultural values of the archipelago (such as the philosophy of Javanese or Sundanese motifs). This practice is in line with the Merdeka Curriculum, which emphasizes *project-based learning* based on local wisdom (Ministry of Education and Culture, 2021), as well as responding to the need for ecological literacy in urban schools, where 90% of art teachers claim to lack environment-based teaching tools (Wijaya & Darmawan, 2023). By integrating Eco-Print into the education ecosystem, Jakarta can become a model city that combines modernity with cultural resilience, anticipating the loss of identity due to globalization.

The research titled *"Implementation of Typography Art as Craft with Eco-Print Technique as Creation Media"* is designed to produce environmentally friendly products through the exploration of typography made from natural materials, which has a double impact academically and socially. For the world of education, this activity realizes the Tridharma of Higher Education through the integration of learning, research, and service based on ecological skills. Practically, the

community can adopt this method as inspiration to develop sustainable creative businesses. These findings are in line with Susyanti et al.'s (2020) research on the aesthetic and ecological value of natural materials, and supported by evidence of the stability of natural pigments for industrial applications (Naini & Hasmah, 2021). This approach also strengthens the *slow design* paradigm (Fuad-Luke, 2008) that synergizes art and environmental sustainability, while increasing the cultural literacy of the younger generation through nature-based education (Hartono, 2023).

METHOD

This study adopted a qualitative approach through the *practice-led research* method, where the creative process became the basis of academic investigation. In the Practice-Led Research process, there was a lot of exploration with creative experiments on techniques, colors, materials, and types of leaves used. This artistic exploration is a core part of data collection in this research. As a form of *practice-based research*, this study generates new knowledge through direct creative processes, especially in the creation of artworks. Apart from that, data collection was also carried out with documentation taken based on observation, exploration, and visual photo documentation of each stage.

RESULTS AND DISCUSSION

Traditionally, at first, the term typography was closely related to typesetting and printing. However, with the influence of the rapid development of digital technology, the meaning of typography has expanded. Now typography is interpreted as all disciplines related to letters. In practice today, typography collaborates with other fields of science. According to Kardinata (2011), typography is a medium for expression. The ecoprint technique is a process of transferring colors and shapes directly onto fabric (Wahyuningsih et al., 2024). The ecoprint technique is used to decorate the surface of a fabric with various shapes and colors produced from natural materials. By utilizing natural materials, which are usually plants, the ecoprint technique can decorate the surface of the fabric. Although the motif or image created is the same, sometimes the color produced is not the same as the color of the original plant. This depends on the color pigments that exist in the original plant. The eco print or eco printing technique is a method of coloring fabrics with natural dyes (Risnasari et al., 2025).

As for the natural dyes used in this research activity, one of them uses dau. In the leaves, there is *chlorophyll,* which means leaf green substance. Chlorophyll is a pigment found by various

organisms and is one of the molecules that has a major role in photosynthesis. Chlorophyll gives green color to the leaves of green plants and green algae. Chlorophyll molecules absorb red, blue, and violet light, and reflect green and slightly yellow light, so the human eye receives this color. Leaves are used as a medium for creativity. Because this medium of creativity can be in the form of materials or objects that can support the process of making art, the results obtained are maximized. Figure 1-4 are leaves are used as media.

Figure 1. Spruce Leaves (Source: Personal Documents, 2020)

Figure 2. Urang Aring Leaves (Source: Personal Documents, 2020)

Figure 3. Teak Leaves (Source: Personal Documents, 2020)

Figure 4. Red Miyana Leaves (Source: Personal Documents, 2020)

From the leaf media, the next process is the typography process of the eco-print technique:

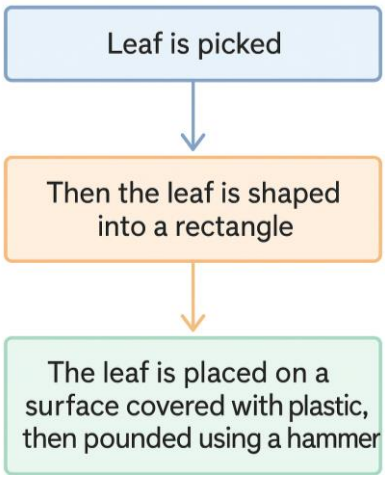

Figure 5. Ecoprint Technique Typography Process Chart

In this research, the research team still focuses on uppercase letters, because the shape of uppercase letters has easier-to-shape characters than lowercase letters, which have more complexity. In addition, large letters have large characters, so they are visually clearer than small letters. The media used by the research team are canvas and rayon fabric. From the exploration that has been done, the process of forming the leaves differs according to the visuals of the leaves. For spruce leaves, the leaves are left intact and only picked per leaf, but arranged according to the desired letter shape. If it has to be curved according to the shape of the letter, the fir leaves are bent according to the shape of the letter. For example, in the letter U, the curve is at the bottom, so the leaf is bent at the bottom. So letters are not made directly in general when viewed from the character of the letter shape, but gradually for each letter. But some letters can be made directly, only for I. For urang aring leaves, it is made in stages by picking, except for the letter I, which can be made

directly. Both urang aring leaves and cypress leaves are easier to shape when they are young. When they are old, they cannot produce color.

The process is different for teak leaves and red leaves or red miyana leaves. The leaves must be picked and then cut into the desired letter shape. It is even easier to make stages for letters except the letter I. From the results of the exploration that has been done, it is difficult to get the color out when the eco print technique is done. This is because it has to be shaped into the desired letter; the color of teak leaves is not evenly distributed compared to cypress leaves and urang aring leaves. This is different when the eco print technique is done with the teak leaf motif left intact, without having to be shaped into the desired letters. From the results of the exploration that has been done, several large letters are difficult to form with the Eco-print technique, such as G, Q, and O. These letters require a high level of patience and more time when using this technique. The following are the results obtained when using Fir leaves:

Figure 6. Typography Results Using Spruce Leaves (Source: Personal Documents, 2020)

The following results are obtained when using Urang Aring leaves:

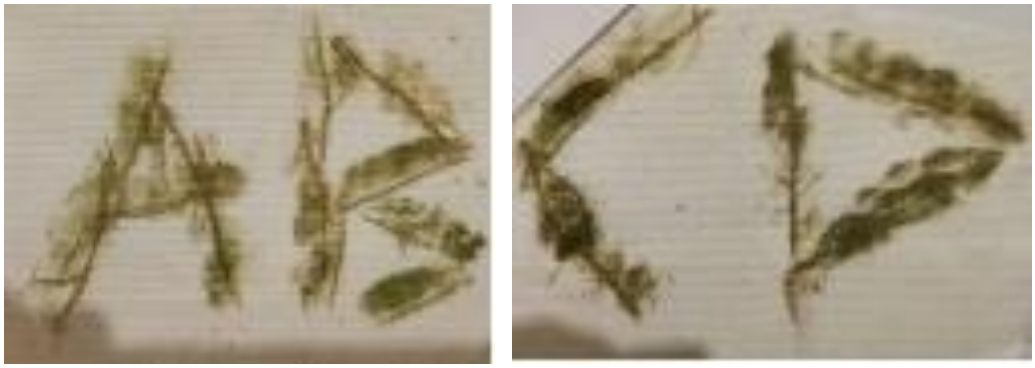

Figure 7. Typography Results Using Urang Aring Leaves (Source: Personal Document, 2020)

Figure 8 shows the results obtained when using Teak leaves.

Figure 8. Typography Results Using Teak Leaves (Source: Personal Document, 2020)

Figure 9 shows the results obtained when using Red Miyana Leaves or Red Leaves.

Figure 9. Typography Results Using Red Miyana Leaves or Red Leaves (Source: Personal Documents, 2020)

The results show that the use of capital letters in the eco-print technique provides visual and technical advantages over lowercase letters. This finding is in line with Lee's (2021) research, which proves that uppercase letterforms increase visual clarity by up to 40% due to simpler line characters and wider negative space. The choice of canvas and rayon fabric media also proved appropriate based on Nurhidayat et al. (2021) study, where rayon has 15-20% better natural pigment absorption than cotton, while canvas provides the shape stability needed to withstand the pressure of printing.

The process of letter formation with leaves gives rise to a variety of techniques based on the type of plant:

1. Fir and urang aring leaves: young leaves are easier to shape and produce optimal colors, supporting Susilowati et al. (2022) findings on the relationship between leaf age and color durability. Letters such as I can be made directly, while curved letters (U) require gradual shaping with leaf bending techniques.

2. Teak leaf and red miyana: it requires shape cutting due to the stiffness of the leaf structure, but produces uneven color when formed into letters. This is consistent with Wulandari & Rizal (2020) analysis that teak pigments are sensitive to mechanical damage. When left intact (without forming letters), teak leaves actually showed better color results, confirming that modification of leaf shape can interfere with pigment release.
3. Complex letters (G, Q, O): requires more time and precision, in line with Chen's (2023) study on the difficulty of reproducing complex shapes on sustainable materials. Greenwood (2019) also notes that shape precision in eco-prints is often inversely proportional to color quality.

The practical implications are:

1. Material selection: young leaves with flexible structures (cypress, urang aring) are more suitable for projects that prioritize time efficiency. For intensive color without shape modification, teak/redmiyana leaves are better used in their whole state.
2. Typography design: straight-line capital letters (I, L, T) are ideal for beginners, while curved (U, C) or complex (G, Q) letters require advanced technical training.
3. Continuing education: these findings can be integrated into nature-based design thinking learning modules, referring to slow design principles (Fuad-Luke, 2008) that emphasize local material adaptation.

CONCLUSIONS

This research proves that the successful application of eco-print techniques for typography is strongly influenced by the characteristics of natural materials and the complexity of letterforms.

1. Visual and technical ease: capital letters (except G, Q, O) are easier to apply due to their simple shape and large negative space, making them visually clearer than lowercase letters.
2. Variation in material characteristics: young leaves (cypress, urang aring) are easier to shape and produce optimal color. Old or stiff leaves (teak, red miyana) require modification (e.g., shearing) but risk reducing pigment quality.
3. Challenging creative process: letter formation requires a lot of patience and extra time, especially for curved/complex letters, as they must be arranged in stages to the desired shape.
4. Innovation potential: this technique offers a sustainable design solution with unique visual outcomes, as well as a new medium of expression that integrates local wisdom and ecology.

The implications of this research are in art education, this technique can be adopted as a hands-on learning method to improve ecological literacy and design. And in the creative industry,

it can be an environmentally friendly alternative in the production of nature-based typographic works. Thus, eco-print typography not only enriches the treasures of craft, but also answers the need for sustainable and inclusive art practices.

RECOMMENDATIONS

Based on the results of this research, it can be the basis of recommendations for further research to integrate eco-print and capital typography techniques with augmented reality (AR) to create interactive cultural education media. For example, the application scans capital letters made from nature and then displays cultural stories related to the motif. It can also be a recommendation to research the potential of Jakarta's urban plants (e.g., mango leaves, kana flowers) as eco-print materials that are adaptive to the urban climate, including analysis of pigment resistance to air pollution.

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