Visual expressions of environmental care in primary school students' drawings

Zariul Antosa¹* https://orcid.org/0000-0002-8475-5317
Jupriani² https://orcid.org/0009-0006-3544-2695

¹Faculty of Teacher Training and Education, Universitas Riau Pekanbaru, Indonesia
²Faculty of Teacher Training and Education, Universitas Negeri Padang, Indonesia

ABSTRACT

This study analyzed primary school children's drawings from a drawing competition to explore their attitudes towards environmental care. Employing a descriptive qualitative approach, data collection was conducted through observation, interviews, and document analysis. Data analysis was performed using an interactive model analysis technique. The findings reveal that the drawings depict both school and living environments, featuring objects from children's daily activities. The drawings do not fit into a single category, but are a mix of organic, structural, schematic, expressionist, and literary types. The drawing objects were depicted naturally and proportionally using primary colors. The students' visual expressions predominantly used green, red, yellow, and brown, with minimal mixing. The way the drawings are expressed shows the children's personal expressions, but the choice of objects tends to be influenced by adult thinking. The contribution of teachers in developing children's cognitive and skill skills is evident in their drawings, as revealed by interviews with the children regarding the sources of their ideas. Drawing objects reflect children's attitudes, behaviors, and values regarding environmental care, illustrated through scenes such as playing in the schoolyard, family settings, playground objects, school activities, and natural environments. The shapes were naturalistic, simple, overlapping, reclining, and layered with no transparent objects. Their choice of objects and techniques was shaped by their knowledge and experience of nature, with each drawing outlined. Children use drawings to express life events and experiences, so teachers should value these drawings, as research often overlooks children's perspectives in favor of adult viewpoints.

Introduction

Every child is inherently born with creative potential that forms and develops according to their environment (Agarwal et al., 2021; Gibson & Eming, 2020; Li et al., 2022). Art education serves as a creative medium for expression, recreation, exploration, curiosity, and aesthetic experiences through creation, performance, and response activities (Borawska, 2021). Drawing is a form of art education that aims to develop a

child's personality, balance logic, and emotion through a series of activities that reconstruct feelings, visions, and intuitions into visual forms (Fajrie et al., 2024; Winner & Drake, 2022; Zamelyuk & Mahdysiuk, 2021). Artistic activities can serve as ideal outlets for thoughts and romantic feelings (Magsamen & Ross, 2023). Art represents a form of reciprocal relationship between humans and their environment or as a manifestation of the soul expressed in individual emotional aspects (Ylirisku, 2021).

Nature is frequently used as inspiration for art expressions (Muhr, 2020; Schroeder, 2021). Artworks are natural imitations enhanced by new elements based on the artist's perception (Klöckner & Sommer, 2021). In creating images, contemplation occurs in visual observations with human subconscious intuition, which is reconstructed into artworks. The same applies to children. For children, art activities, such as drawing, are akin to storytelling, enabling intuitive and spontaneous self-expression (Harris, 2021; Herranen, 2020). Although their technical skills and expressiveness may differ from those of adults, their fulfillment remains the same (Loureiro et al., 2020). Future research on children's well-being indicators should prioritize making nature explicit and restoring the interconnectedness between the arts and nature (Moula et al., 2021).

Children's drawings are a form of communication and storytelling using visual language (Cohn, 2020; Zhang et al., 2022). Theories suggest that a drawing is formed by personal experiences and expressions towards an object. Children's drawings convey their personal experiences and interpretations of objects using symbolic visual language (Ramli & Musa, 2020). A child growing up in a rural environment will certainly have different interaction experiences than those in an urban environment. Urban children interact daily with a heterogeneous society, various vehicles, shopping places, modern culinary spots, or hybrid parks. Meanwhile, children living in mountains interact with a homogeneous community, have limited access to vehicles and shopping places, and are accustomed to living in nature. If these interactions are visually expressed in drawings, they result in different shapes and styles.

A drawing seldom mirrors the exact object, but serves as a trigger to spark ideas, after which they draw based on what they know, not what they see (Matloob Haghanikar & Leigh, 2022). A child's drawing does not always depict facts, but rather an expression of what they see as integrated with their knowledge and experience (Moula et al., 2021). When considered as inspiration, the environment is viewed as natural. However, in children's drawings, it is depicted with additional visual elements that reflect the child's unique expressions. Children's drawings are an individual's language used to communicate experiences, feelings, observations, and fantasies (Çetin & Güneş, 2021). Thus, a child's drawing is a visual representation of their experiences and imaginations (Ramli & Musa, 2020).

Several studies have examined the relationship between children's drawings and their understanding of the environment, with recent research highlighting how visual expressions provide insight into children's perceptions of nature. For instance, Loureiro et al. (2020) explored how children's drawings can reveal their emotional connection to their surroundings, noting that nature is often portrayed as a central theme, especially among children in rural settings. Similarly, Zhang et al. (2022) analyzed children's artwork in urban schools and found that their depictions of the environment are influenced not only by their direct interaction with nature but also by exposure to urban landscapes and technology. These studies highlight the diversity in children's environmental awareness based on their socio-cultural context, with drawings serving as a visual narrative of their experiences. Furthermore, Addessi (2020) investigated the influence of environmental education on children's artistic expressions, concluding that educational interventions significantly enhance children's ability to depict environmental issues, including pollution and conservation efforts. These studies emphasize the importance of environmental education in shaping children's creative outputs, suggesting that drawing activities can be instrumental in promoting environmental awareness from a young age.

While there is a growing body of research on children's visual expressions of the environment, several gaps remain unaddressed. First, most studies focus predominantly on either rural or urban children, but few have made a direct comparison between the two. Additionally, the existing literature has largely centered on the role of formal education in shaping children's environmental perceptions, leaving the influence of informal or spontaneous interactions with nature underexplored (Lionetti & Pluess, 2024). Moreover, the methodologies employed in prior research often emphasize the content of the drawings, without considering the structural and stylistic elements that may also reflect deeper environmental understandings (Li et al., 2022). This research addresses these gaps by comparing urban children's drawings to understand how they express their environment through both content and artistic style. The novelty of this study lies in its focus on the structural elements of the drawings, such as composition and visual motifs, alongside the environmental content, thus providing a more holistic understanding of how children visually interpret their surroundings.

This research explores how children express their perceptions of the environment, focusing on their drawings and how they represent both natural/physical and sociocultural aspects. It analyzes and describes the visual elements, styles, expressions, and structure of children's urban drawings, examining how urban children depict their environment through various drawing types, such as organic, structural, schematic, expressionist, and literary. The findings will contribute to the existing body of knowledge by offering a detailed analysis of both the content and structural elements of children's drawings, bridging the gap between environmental education and artistic expression. This research has the potential to inform educational strategies that use art as a tool for fostering environmental awareness, as well as contribute to broader discussions on how children from different environments interact with and interpret their surroundings.

Method

This study aims to describe the visual elements, styles, expressions, and structure of expressions based on drawing types: organic, structural, schematic, expression, and literary. Therefore, the research analysis focuses on how primary school students' visual representations of visual elements, styles, expressions, and structure based on the drawing types: organic, structural, schematic, expression, and literary. The activity was attended by 43 participants from grades 4, 5, and 6 of primary school. Observations were conducted for 200 minutes during the drawing competition.

Research instruments include observation guidelines, interview guidelines, documentation, and field notes. The data collection process started with observation of the drawing process, followed by interviews and analysis of the drawings. This process provided a holistic view of the children's drawings related to their environmental care expressions represented through the drawing types: organic, structural, schematic, expression, and literary creatively. Furthermore, data analysis followed the model proposed by Miles and Huberman, encompassing data collection, data presentation, and conclusion drawing. Thematic analysis was applied to the interview results, with quotes categorized by theme and summarized in a table for clarity. Data validity was ensured through triangulation of observations, interviews, and documentation analysis.

Results

Results and discussion related to the visual expressions of primary school students towards visual representation, styles, and expression structures based on the drawing types: organic, structural, schematic, expression, and literary are as follows. It was evident that participants drew with their individual expressions in terms of object visualization, styles, expressions, color choices, and drawing techniques. The interview results presented in Table 1 offer insights into the perceptions of both elementary school

students and teachers regarding environmental care attitudes expressed through drawing. The students describe their daily home activities, such as cleaning and having meals with their families, as influential in their environmental drawings. Their color and object choices are shaped by examples from teachers and parents, and they often rely on personal preferences or their immediate surroundings for inspiration. Interestingly, some students participate in drawing competitions without fully understanding the theme, instead basing their artwork on familiar aspects of their environment. On the other hand, teachers approach drawing instruction by starting with sketches and coloring exercises, demonstrating object shapes, and providing opportunities for students to practice. While students are encouraged to express individual creativity through various coloring methods, some teachers impose restrictions, limiting deviations from the examples given. Teachers also play a role in explaining competition themes, linking them to familiar settings such as the home, school, and nature.

Table 1. Interview results

No	Main Theme	Interview Summary
	Interviews with students	
1	Representation of Visual Expressions of Environmental Care Attitudes in Elementary School Students	
	Habits at Home	Describe daily activities at home such as breakfast with family (IT, SH)
	Environmental Activities	Drawing of house cleaning activities with family (SH).
2	Object and Color Selection	
	Influence of Teachers and Parents	Drawings are influenced by examples from teachers and parental direction (IT, SH).
	Personal Colors and Objects	Students choose colors based on personal preferences and references from the surrounding environment (IT, LP)
3	Perception of the Competition Theme	
	Not Knowing the Theme	Some students do not know the theme of the drawing competition (IT, SH).
	Influence of the Nearest Environment	Images created based on the closest environment or what has been experienced (LP, DP).
	Interview with teacher	
1	Teachers' Approaches to Teaching Drawing	
	Teaching Methods	Start with sketching and coloring (LT, TM).
	Examples and Exercises	Demonstrate various shapes of objects and how to color them, and direct students to practice (LT, TM, SM).
2	Flexibility in Drawing	
	Various Coloring Methods	The coloring method is not the same for all pictures, emphasizing students' individual expressions (LT, TM, SM).
	Prohibitions and Permissions	Teachers sometimes do not allow students to make objects that are different from the examples, but some do (LT, TM, SM).
3	Drawing Competition Theme	
	Theme Explanation	Explaining the competition theme as an environment, including the family environment, around the house, school, and nature (LT, TM, SM).
	Practice Before the Competition	There is no special practice before the competition, drawing is based on students' memories and imagination (LT, TM, SM).

Figure 1 shows that participants randomly initiated the drawing activity by sketching the object to be developed into a drawing. While developing their work, children immerse themselves in their expressions, develop ideas enthusiastically, and visualize their environmental care expressions. They presented diverse drawing objects that corresponded to their experiences and fantasies. The expressions in their drawings can be categorized into expressionist, impressionist, naturalist, and structuralist.

Figure 1. Primary school students initiating drawing activities

During the coloring stage, they used distinctive colors in line with the characteristics of their dominant drawings, such as yellow, green, red, or primary colors associated with real object colors, conveying cheerfulness and spirit. Some added a bit of color gradation. The choice of ideas in expressing experiences and thoughts about objects is represented visually using lines, shapes, colors, organized and expressed using symbols and icons matching the characteristics of children in the pre-operational concrete phase with logically analyzable object expressions combining several dimensions. The structure of their expressions varied, including schematic, organic, haptic, expressionist, decorative, and romantic forms.

Figure 2. Visualization of expression styles and expressions in children's works

The analysis of children's drawings can be categorized into several types, as illustrated in Table 2.

Table 2. Interview results

No	Type	Total
1	Organic	17
2	Structural	15
3	Schematic	13
4	Expression	13
5	Literary	12

The observations indicate an uneven distribution because many studies integrate with other types rather than being confined to one type. Structured interviews with the

children were conducted. Although many children were guided by accompanying teachers during the interviews, researchers were still able to capture their concepts and ideas about the environment integrated into their drawings. Generally, the interview results aligned with the competition theme of environmental care. The children conveyed their concepts and ideas about their work, which can be categorized into several themes. First, they view nature or the environment as a fun place to play with friends. Second, they view nature as the setting for all human activities and technological advancements. Third, they believed that nature is a peaceful place that should be protected and preserved. Fourth, they recognized that nature is now damaged and has lost many of their playing areas. Finally, they perceive nature as an enjoyable dream.

Figure 3. Visualization of drawings according to interviews with students

Children's drawing types were categorized into five expressions: organic, structural, schematic, expression, and literary. They depict real objects in a collection of items proportionally and realistically. First, the objects in drawings tend to be non-moving and are generally familiar objects. These drawings often represent static (non-moving) objects and are drawn repeatedly, such as human figures, which are often depicted repetitively. The drawings are colored in neutral colors. The objects are created with certain rules and patterns, focusing on the details and relationships between the parts of the drawing.

Figure 4. Visualization of organic drawings

Second, structural-type drawings are created in a more complex manner than are organic drawings. The drawings were made in a systematic and organized structure. All objects visualized in the drawings were made with specific details, paying attention to the relationships between the parts of the drawing. For example, houses are placed on flat ground; trees grow on the ground besides, in front of, and behind the house; and they have branches, twigs, and leaves corresponding to their original characteristics. Grass and weeds grow on green expanses. The color of plant leaves is green, the trunks are brown, and the sky is blue.

Figure 5. Visualization of structural drawings

Third, schematic drawings are created by depicting objects with simple shapes without a clear relationship to an organized structure. Schematic drawings represent objects in a simple, symbolic, and abstract manner. Objects in drawings can be reduced to basic simple forms, and the relationships between the elements of drawings focus more on the overall structure of the drawing. The visual expression of schematic represents images derived from tactile experiences and physical sensations. Children with schematic types express their experiences and feelings using drawings.

Figure 6. Visualization of Schematic Drawings

Fourth, expression type refers to children's drawings that visualize their thoughts according to their ideas and desires. From the documented drawings, environmental themes were expressed as environments related to family, playmates, and a series of outdoor activities conducted by children with their teachers, parents, and school friends. The objects in the drawings not only express egocentric sensations (feelings of sadness, joy, curiosity, anger, fear, etc.), but also accumulate ideas about objects from outside the child, such as groups of people. The environment is seen as natural, but when depicted in drawings, it is described with other visual elements in accordance with the child's expression. The objects in the drawings are expressed in their own way using certain patterns and shapes, which are then colored with contrasting colors and made in an exaggerated manner.

Figure 7. Visualization of expression type drawing

Fifth, the literature on drawings tells a story. The objects in the drawing do not express a single idea but rather express the child's ideas about life and other elements present in the child's mind. The objects in the drawing were complemented by other elements that they believed were related to the main object. Literate drawings visually express situations over a certain period when the child is in that situation. All the components experienced, seen, and potentially present were depicted simultaneously in the drawings. For example, a drawing expressing the morning environment would sequentially illustrate everything from waking up to going to school. A drawing of community service activity in the neighborhood might also include images of children going to school, a busy environment, places of worship, multistory buildings, and rolling clouds expressed with contrasting colors. The literate type of drawing showcases a child's work, which tells stories about ideas integrated with their experiences and memories of the environment.

Figure 8. Visualization of literate type drawings

Discussion

After examining drawings created by children about the environment, it is evident that elementary school students have their own unique ways of expressing their ideas and concepts. According to Lowenfeld's (1974) theory, at the age of 7-11 years, children's drawings encompass schematic works and early realism. Children's drawings creatively represent unique objects related to the environment and are expressed energetically and expressively (Abdulhameed & Rashid, 2022; Hall, 2020; Strauss, 2021). The visual expressions in the drawings of elementary school students were represented using elements such as lines, shapes, spaces, colors, textures, and shadows. Children's drawing styles are rich in unique artistry, reflecting their personal sense of space and individuality (Stroumbos, 2022; Leshem et al., 2023). Each drawing form has universal uniqueness as a visual language with distinctive symbols (Becker et al., 2023). Elements such as lines, shapes, colors, textures, spaces, and light in children's drawings can be used to express aesthetic feelings.

Figure 9. Visual expressions of environmental awareness in students: at home, in the community, and at school

For children, drawing is like storytelling but expressed spontaneously and intuitively through lines (Harris, 2021). Visual expressions of elementary school students in the environment are a meaningful form of significance. Visual expression as a work of art evokes aesthetic emotions (Luo et al., 2022). This expression is not only a form of dependence between humans and their environment but also a reciprocal relationship (Fan et al., 2023; Lengieza et al., 2023). When children draw, they imitate them, but they also add new discoveries and symbols as a form of creativity (Harris, 2021). Therefore, the visual expressions of elementary school students represent their experiences and knowledge of social environmental awareness, such as at home, school, and in the community. Figure 9 shows the visual expressions of environmental concerns. The substance of the drawings reveals the children's subjective and individual feelings, both happy and sad, resulting from their mental activities, according to their cultural context.

Children's feelings are visualized on a two-dimensional plane using contours and colors. Children's drawings express their ideas, knowledge, and experiences using lines and colors (Loureiro et al., 2020). The objects in drawings are created by imitating nature and are implied by following their subconscious minds (Fan et al., 2023). The colors chosen and applied to the drawings aligned with the child's psychological satisfaction through their subconscious. Children's drawings are personal symbolic visualizations that communicate their feelings, perceptions, and fantasies (Trihastutie, 2023). Children's visual expressions about nature do not recognize perspective; instead, they present objects on three planes. Objects that are far away are placed at the top of the drawing plane, whereas objects that are close are placed at the bottom. They draw mountains not by understanding the structure and directly observing the objects but by using their memory and imagination. Mountains are generally drawn symmetrically and consecutively. The formation of drawing objects combines visual elements that generally visualize their understanding of the environment. These are expressed in family and school activities with mutual cooperation, playing, learning, and flying kites in open spaces. The objects chosen according to their activity themes represented the environmental awareness. Referring to Lowenfeld and Britain's (1982) theory of children's drawings, elementary school students' visual expressions indicate a transition towards realistic-naturalistic drawing patterns.

Children of the same age can exhibit different stages of drawing development. Some children's drawings still tend to be dominantly schematics, while others show pseudo-realism. The visual expressions displayed by students depict objects by connecting concepts of space and time (Park et al., 2021). In some parts, the drawings show realism with more natural visual expressions, although they are still rigid and dominated using contours to form objects. Visualizations of environmental awareness at home are

dominated by drawings of an ideal family consisting of a father, a mother, and children. Meanwhile, drawings outside the home environment are dominated by objects of student activities at school, such as studying in the garden, playing in the schoolyard, cooperating, studying in the school garden, and in the library. This confirms the findings of a previous study (Loureiro et al., 2020) that the aesthetic appeal of the school environment and material conditions, such as playground facilities, were significant elements of children's ideal schools.

Figure 10. Different Types of Students' Drawing

An interesting aspect is that drawings by children from the outskirts of the city represent more natural objects. These include images of nature in the morning, flying kites in meadows, and farming alongside parents. Human-nature connectedness is positively correlated with pro-environmental behavior and well-being (Muhr, 2020). Children's drawings include the need for safety, happiness, and positive relationships, along with more implicit indicators such as the environment and nature (Moula et al., 2021). Nature is essential because deficits in nature present critical developmental challenges for future generations (Li et al., 2022). Children's perceptions of well-being are shaped by their favorite spaces, with access to nature and outdoor areas influencing emotional, mental, physical, and material well-being (Moula et al., 2021).

Figure 11. Children's drawings represent natural objects

The results of the research focus on two aspects that show the representation of the environment in children's drawing expressions. First, the environment—natural, social, and cultural—shapes children's concepts of their surroundings, as reflected in the form, structure, and style of their drawings. The visualization of their artistic expression is relevant to their knowledge and experience, and elements of drawing habits, attitudes, and values help them express objects (Bosgraaf et al., 2020; Trihastutie, 2023). Their perception of the environment has the power to shape their personality and emotional condition (Lionetti & Pluess, 2024). Second, the physical, social, and cultural natural environment influences interests and responses to other people, nature, and human activities, and develops perception and attention to the environment, which leads to individual provocation to behave (visual symbolization). The environment contains a system of behavior, attitudes, and values, which directly or indirectly influence children's

artistic expression. The work of art that a person creates is a connection to life. internally with the surrounding social culture (Chawla, 2020).

In visualizing children's expressions through drawings, several key aspects have emerged that can guide teachers in developing art education. The creative aspect involves how children transform their thoughts and experiences into visual language, reflecting the high level of creativity essential for nurturing development (Becker et al., 2023). This is in line with modern learning approaches. Environmental awareness is shown through the scope of their drawings (Ardoin & Bowers, 2020). Urban children often depict only their immediate surroundings, while those from suburban areas portray more of the natural environment, likely due to limited environmental education. The visual aspect highlights how children's drawings reflect their unique cultural contexts (Brown et al., 2020), illustrating their perceptions of the environment through subcultures and behaviors. Finally, visual expression reveals that children interpret their environment based on their cultural and ecological backgrounds (Brown et al., 2020), with their drawings representing personal knowledge and experiences from their interactions with their surroundings (Robb, 2021).

The children communicated life events and experiences through their drawings (Çetin & Güneş, 2021). For researchers, drawing is a preferred and enjoyable method for children to express themselves and gather information through a participatory approach (Agarwal et al., 2021). Previous research on children's well-being has often focused on adult perspectives, even though children's viewpoints differ significantly from those of adults (Moula et al., 2021). This study suggests the importance of considering children's perspectives (Loureiro et al., 2020). To maximize these distinct purposes, teachers should recognize the importance of what learners draw (Ainsworth & Scheiter, 2021).

Conclusion

The children's drawings in this study exhibit a naive style that reflects their understanding and logic. They depict the environment according to their perception, often showing human figures with consistent features such as two eyes on every face. Drawings are based on familiar experiences with repetitive characteristics of objects such as buildings and trees. The focus is typically on people in familiar settings, such as home or school, with minimal variations in hand positions, such as a raised hand. Objects are drawn upright with consistent textures and colors, and nature is portrayed in layers, sometimes transparently, with various elements shown simultaneously. Space is divided into flat areas with consistent object sizes and shapes, and the depiction of near and far scenes is indicated by distance rather than by changes in size or color. Drawings often feature symmetrical arrangements, with objects such as trees and mountains paired or centered. The emotional connection to the environment was highlighted, with important elements exaggerated or given more prominence to reflect the child's internal experience. Overall, drawing visualizes interactions with the environment, not just as an activity of creating lines and colors. Children use drawings to communicate their life events and experiences, making them a preferred method for self-expression and information-gathering. Incorporating environmental themes into drawing activities could further enrich their understanding of and connection with nature.

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