

Visual Communication in Environmental Education: A Semiotic Analysis of Instagram Content from @walhisulteng and @dlh.sultengprov

Muhamad Gavil¹, Sumarni Zainuddin², Andi Febri Herawati N³

^{1,2,3}Universitas Tadulako, Palu, Indonesia

Email: muhamadgavil@gmail.com

Abstract

This study aims to analyze visual signs (icons, indices, and symbols) in the Instagram content of @walhisulteng in shaping environmental education related to issues of environmental degradation in Central Sulawesi Province; to analyze visual signs (icons, indices, and symbols) in the Instagram content of @dlh.sultengprov in shaping environmental education related to waste management issues in Central Sulawesi Province; and to examine the semiotic differences between the content of @walhisulteng and @dlh.sultengprov in conveying environmental messages on Instagram. This research employs a descriptive qualitative approach within an interpretive paradigm and applies Charles Sanders Peirce's semiotic analysis as the primary analytical framework. The research data were obtained through documentation of visual Instagram content, including image posts and infographics addressing environmental issues. The analysis was conducted by identifying visual representamen, classifying signs into icons, indices, and symbols, and interpreting the objects and interpretants produced. The findings indicate that visual signs in the form of icons, indices, and symbols in the Instagram content of @walhisulteng and @dlh.sultengprov construct meanings of environmental education related to issues of environmental degradation and waste management in Central Sulawesi Province. Icons function as representations of environmental objects, indices indicate cause-and-effect relationships related to environmental conditions, and symbols reinforce messages through the use of established visual conventions. The relationships among these visual signs contribute to building audience understanding of environmental education messages conveyed through graphic design on Instagram as a social media platform.

Keywords: *Semiotics, Environmental Education, Environmental Communication, Instagram.*

A. INTRODUCTION

Environmental issues have become one of the major challenges facing the world today. Problems such as climate change, deforestation, and biodiversity loss not only affect ecosystems but also have profound impacts on human life. In the Indonesian context, these challenges are increasingly evident, as environmental degradation threatens the sustainability of livelihoods. Indonesia, with its exceptionally rich biodiversity, faces significant environmental challenges, including waste management problems and ecosystem degradation resulting from industrial activities that jeopardize environmental sustainability. Central Sulawesi, as one of Indonesia's provinces endowed with abundant natural resources, also confronts a range of complex environmental issues. The 2024 Performance Report of the Environmental Agency (*Dinas Lingkungan Hidup/DLH*) of Central Sulawesi Province highlights several strategic environmental issues, including high rates of deforestation

and land degradation, as well as suboptimal waste management practices (Dinas Lingkungan Hidup, 2024).

Based on the 2024 Regional Environmental Management Performance Information (*Informasi Kinerja Pengelolaan Lingkungan Hidup Daerah/IKPLHD*) document of Central Sulawesi Province, several environmental pressures have been identified, such as the increasing number of industrial activities leading to land-use change, inadequate waste management, and declining environmental quality related to governance issues. These data indicate that environmental degradation caused by industrial activities and waste management problems are two critical issues that require serious attention in Central Sulawesi Province (Balai Konservasi Sumber Daya Alam, 2024). To address these challenges, environmental education efforts are essential to enhance public awareness and encourage behavioral change.

With the emergence of social media platforms such as Instagram, environmental education can be disseminated more rapidly and widely. Instagram offers visual features that allow messages to be conveyed directly and efficiently through images and videos, which are more easily understood by younger audiences who are globally connected and accustomed to visual media. With more than one billion active users worldwide, Instagram has evolved beyond a platform for sharing personal photos and videos into a powerful medium for communicating social messages, including environmental issues. In Central Sulawesi, two institutions actively engaged in environmental education through social media are Wahana Lingkungan Hidup Indonesia (WALHI) Central Sulawesi and the Environmental Agency (DLH) of Central Sulawesi Province. This study focuses on two Instagram accounts, namely @walhisulteng and @dlh.sultengprov, both of which play a role in communicating environmental issues in the Central Sulawesi region. The @walhisulteng account is the official Instagram account of Wahana Lingkungan Hidup Indonesia (WALHI) Central Sulawesi, a non-governmental organization engaged in environmental advocacy and protection. WALHI is widely recognized for its active role in raising awareness of ecological crises, natural resource exploitation, environmental justice, and the rights of indigenous communities to their living spaces. Through its Instagram account, WALHI Central Sulawesi utilizes graphic design, infographics, and digital illustrations to raise public awareness of various local environmental issues.

Meanwhile, the @dlh.sultengprov account is the official Instagram account of the Environmental Agency (DLH) of Central Sulawesi Province. As a regional government institution, DLH plays a primary role in implementing environmental protection policies and programs. Through its Instagram account, DLH predominantly publishes informative and educational content, such as campaigns on cleanliness, waste management, forest conservation, and official institutional activities. These two accounts were selected as the objects of this study because both utilize graphic design as their primary medium of visual communication. Through publicly accessible visual content, the two accounts present environmental education messages that are constructed differently in accordance with their institutional

identities and communication objectives. These differences are important to analyze semiotically in order to understand how visual signs (icons, indices, and symbols) are used to construct meaning, image, and ideology in environmental communication. In the context of visual communication, graphic design plays a central role in the success of social media campaigns, particularly on Instagram. Graphic design enables messages to be delivered through visuals that are easily understood by a broad audience, allowing for more effective message dissemination compared to lengthy textual formats. In environmental education conducted through social media, graphic design functions not only as a means of information delivery but also as a tool to influence audience emotions and behavior.

Understanding the categories of signs in graphic design is therefore essential to ensure that messages are designed effectively and reach their intended audience, enabling users to interpret the meanings intended by content creators. This includes the use of icons, indices, and symbols. For example, icons may be used to directly represent natural objects or environmental elements, such as images of trees to symbolize nature or animals to represent biodiversity. Indices may be used to indicate the direct consequences of environmental degradation, such as images of polluted water or forest fires. Symbols, meanwhile, function to convey deeper meanings, such as organizational logos or specific phrases that carry particular connotations within the context of environmental education. Therefore, this study employs visual semiotics as an analytical approach to examine how environmental education messages are constructed in the visual content of @walhisulteng and @dlh.sultengprov. Visual semiotics is a valuable approach for analyzing how messages are conveyed through visual elements in graphic design. Charles S. Peirce, a key figure in semiotic theory, classifies signs into three categories: icons, indices, and symbols. Icons refer to signs that resemble the objects they represent, indices are signs that have a cause-and-effect relationship with their objects, and symbols are signs whose meanings are based on cultural conventions and social agreements. This semiotic analysis not only identifies visual elements but also provides insights into how graphic design influences audience interpretations and responses to environmental issues. Accordingly, this study aims to understand how signs are used to construct environmental education through social media, particularly Instagram.

B. LITERATURE REVIEW

1. Environmental Communication

Environmental communication refers to the dissemination of information for environmental management and protection through the use of communication approaches, principles, strategies, and techniques (Flor, 2018:3). Flor further explains that, in simple terms, environmental communication is the deliberate exchange of information, knowledge, and even wisdom (Flor, 2015:4). According to Pezzullo and Cox, defining environmental communication merely as information or “talk about environmental topics” can be misleading. Kenneth Burke argues that a comprehensive definition must account for the role of language, visual imagery, protest music, or

even scientific reports as forms of symbolic action. In his work *Language as Symbolic Action*, Burke emphasizes that even the most emotionally neutral language is inherently persuasive. This occurs because language and other symbolic actions actively create reality while simultaneously providing ways to enact it. Language shapes understanding, constructs meaning, and directs individuals toward a broader worldview. From this perspective, communication focuses not only on what is expressed but also on how it is expressed. By emphasizing symbolic action, a stronger and more inclusive definition of environmental communication can be developed.

Based on this perspective, Pezzullo and Cox use the term environmental communication to refer to the pragmatic and constitutive modes of expression that name, shape, guide, and negotiate human ecological relationships in the world, including relationships with systems, elements, and non-human species (Pezzullo, 2018:34). Environmental communication also aims to build public awareness, understanding, and engagement in environmental protection and conservation. In practice, it encompasses various forms and channels of communication, both verbal and visual, used to convey information, calls to action, or critiques of environmental problems. This form of communication functions as a medium for education, awareness-building, and public mobilization, encouraging greater responsiveness to threats of environmental degradation. Through effective communication strategies, environmental communication can reach diverse social groups and promote concrete actions, such as reducing plastic use, improving waste management, and participating in environmental conservation initiatives. Thus, environmental communication plays a strategic role in bridging scientific information and social realities with public interests. The effectiveness of environmental messaging depends heavily on communication practices that are sensitive to the cultural, social, and emotional contexts of the intended audience.

2. Environmental Education

Environmental education is a process aimed at developing public understanding, awareness, and sensitivity toward ecological issues that evolve within their surrounding environments. This process goes beyond merely delivering information about environmental conditions; it integrates values, ethics, and critical thinking skills to encourage individuals to make informed decisions and act responsibly. As such, environmental education is a strategic effort to build environmentally conscious societies, particularly amid the increasing complexity of ecological challenges such as water scarcity, deforestation, air pollution, and climate change.

In the context of advancements in communication technology, environmental education has undergone significant transformation. Previously, environmental messages were primarily conveyed through physical campaigns, public outreach, or mass media such as television and radio. Today, digital media especially social media has become a central space for disseminating environmental information. Instagram, for instance, offers strong visual formats such as photographs, illustrations,

infographics, and short videos. These visual characteristics allow environmental messages to be packaged in engaging, concise, and easily understandable ways, facilitating educational processes for broader and more diverse audiences.

Environmental education through social media is not only informative but also persuasive and participatory. Content produced by environmental organizations and government institutions, such as @walhisulteng and @dlh.sultengprov, seeks to actively engage the public in various issues, ranging from understanding local ecological problems and participating in conservation campaigns to adopting more environmentally friendly lifestyles. In many cases, environmental education operates through compelling visual narratives, the use of metaphors, natural symbols, and visual data that strengthen arguments. Consequently, environmental education extends beyond message delivery to the construction of meaning through visual signs.

3. Instagram as Social Media

The shift from analog to digital media has fundamentally transformed the communication landscape. In the analog era, when media consisted of four separate platforms print, television, film, and radio content was delivered in finished forms. Fiction, non-fiction, comedy, drama, sports, and news were received by audiences as complete products, accompanied by advertisements, public service announcements, and public relations efforts that tended to rely on content already favored by audiences. With the emergence of the internet, individuals can now act as content publishers themselves, although the main challenge lies in attracting audiences. This is where social media plays a crucial role. Social media platforms enable users to promote their content, with interactivity as their primary advantage. Audiences are no longer passive; they can express opinions, share content virally, and extend the lifespan of messages that were once short-lived (Ginter, 2016:157–159).

One of the most popular and influential social media platforms is Instagram. Instagram offers strong visual affordances, enabling individuals, organizations, and groups to share stories, inspire action, and mobilize support for various social issues, including environmental awareness (Nofia, 2023:228). In the context of environmental education, social media platforms such as Instagram function not only as information channels but also as tools for building awareness, fostering participation, and strengthening public solidarity around environmental issues.

4. Graphic Design in Communication

Graphic design is a form of visual communication design aimed at conveying messages effectively through the integration of visual elements such as images, text, color, and layout. In communication contexts, graphic design functions not merely as a visual complement but as a primary medium for directing attention, shaping perceptions, and conveying meaning to audiences. Each element in graphic design plays a specific role that collectively contributes to creating communicative and meaningful visual impressions. Visual communication also performs a signification function, namely conveying concepts, content, or meaning (Tinarbuko, 2012). One of

the primary roles of graphic design in social contexts is to help build social awareness and address social problems. For example, graphic design is often used to campaign on social issues such as environmental crimes, public health, and gender equality (Siswanto, 2023:11–12).

5. Charles Sanders Peirce's Semiotic Analysis

Semiotics is a discipline or analytical method used to study signs (Sobur, 2023:15). According to Jewitt and Oyama, as cited in Eriyanto (2019:5), a key concept in semiotics is code. A code refers to a set of rules that connect signs and meanings. Language users share similar codes, allowing them to interpret signs in comparable ways. Similarly, Lacey (1998), as cited in Ida (2014:75), defines semiotics as a method for analyzing signs. Peirce defines signs through a triadic process known as semiosis (Nöth, 2006:42), which consists of the representamen, object, and interpretant. The representamen is the physical form of the sign that can be perceived, such as an image, symbol, or text. The object refers to what the sign represents, while the interpretant is the meaning or understanding that arises in the mind of the sign interpreter (Sobur, 2017:41–43). This triadic relationship forms the basis for understanding how meaning is constructed through signs in visual contexts.

According to Peirce's theory (Nöth, 2006:45), signs in images can be categorized into icons, indices, and symbols. Icons are signs that bear a direct resemblance to the objects they represent, with relationships based on visual similarity. Indices are signs that have a causal or physical connection with their objects, pointing to the existence or condition of the object through natural or logical relationships. Symbols are signs whose relationships with their objects are conventional or socially agreed upon, formed through cultural habits or symbolic systems. Through this visual semiotic approach, the analysis of Instagram content produced by accounts involved in environmental education becomes more focused and systematic. Visual signs in graphic design are analyzed not only in terms of their appearance but also in relation to their meanings, psychological effects, and capacity to shape public perceptions of environmental issues.

C. METHOD

This study employs a descriptive qualitative approach. Qualitative research is descriptive in nature and tends to rely on analytical interpretation (Tumangkeng, 2022:341). Qualitative research methods also depend on texts and images, involve distinctive stages of data analysis, and apply a variety of research designs (Creswell, 2018:254). Semiotic analysis is fundamentally qualitative–interpretive in nature, as it focuses on signs and texts as its primary objects of inquiry (Piliang, 2016:270). In this study, the researcher seeks to understand how visual meanings are constructed by content producers (WALHI and DLH) and how these meanings may be interpreted by audiences within specific social contexts. By combining a qualitative approach with an interpretive paradigm, this research is descriptive, focusing on the description, understanding, and analysis of the phenomena under investigation.

In this study, documentation serves as the primary data collection method, as it is highly appropriate and effective for achieving the objectives of visual semiotic analysis of Instagram content. Documentation is a data collection method conducted by gathering and recording existing data or materials in the form of documents. According to Creswell, documents may include public documents (such as newspapers, meeting minutes, and official reports) as well as private documents (such as personal journals and diaries, letters, and emails) (Creswell, 2018:263).

The data collection process was carried out through the following steps:

1. Examining all posts published on the Instagram accounts @walhisulteng and @dlh.sultengprov within the predetermined time period.
2. Filtering posts that contain graphic design-based visual elements, such as digital posters, infographics, illustrations, or environmental campaign content.
3. Downloading and storing the selected content in the form of screenshots or original image files, accompanied by metadata such as the posting date, number of likes, and the accompanying captions or descriptions.
4. Coding each visual data item to facilitate the analysis process (e.g., W1 for the first content item from @walhisulteng, D1 for the first content item from @dlh.sultengprov, and so forth).

Data analysis in this study was conducted using a visual semiotic approach based on Charles Sanders Peirce's theory of signs. The analytical process consisted of the following stages:

1. Identification of Representamen

The first stage involved identifying all visual elements present in each analyzed Instagram post. Representamen in this context include all visual forms that can be interpreted as signs, such as images, illustrations, colors, shapes, icons, typography, layout, and symbols appearing in the design. Each of these elements was recorded and mapped as preliminary analytical material.

2. Classification of Signs (Icons, Indices, and Symbols)

Each identified representamen was classified into one of the three types of signs according to Peirce's trichotomy: (1) Icons, signs that bear a direct resemblance or visual analogy to the objects they represent, such as images of trees that visually resemble real forests; (2) Indices, signs that have a causal relationship or physical connection with their objects, for example illustrations of waste piles indicating pollution or images of gray skies suggesting air pollution; and (3) Symbols, signs whose meanings are based on social conventions or agreements, such as recycling logos, the color green as a symbol of environmentalism, or lightning icons representing energy.

3. Interpretation of Objects and Interpretants

At this stage, each classified sign was analyzed to determine the object it refers to. Objects may be concrete entities, such as trees, water, or animals, or abstract concepts, such as environmental justice, ecological awareness, or the threat of climate change. The researcher evaluated the visual and textual context (where applicable) to understand the object intended by the content creator. The

analysis then focused on the interpretant, namely the meaning or mental effect that emerges from the relationship between the representamen and the object in the mind of the message recipient.

D. RESULT AND DISCUSSION

1. Visual Signs (Icons, Indices, and Symbols) in @walhisulteng and @dlh.sultengprov

In digital semiotics, social media platforms are not merely channels of information dissemination but also sites of meaning production through visual signs. Each post, comprising images, colors, typography, logos, and visual composition, contains sign elements that can be analyzed as icons, indices, and symbols. These three categories of signs, as classified in Charles Sanders Peirce's semiotic framework, function to construct representations of reality, reinforce ideological messages, and shape audience perceptions of the issues being addressed.

The Instagram accounts @walhisulteng and @dlh.sultengprov, representing institutions with different orientations and institutional positions, produce and reproduce visual signs that carry layered meanings in their content. Analyzing these signs is essential to understanding how environmental messages are constructed, framed, and communicated to the public.

The following subsection examines the visual signs (icons, indices, and symbols) present in the content published by both accounts, beginning with Figure 1 (W1 Content from @walhisulteng).



Figure 1. W1 Content from @walhisulteng

a. Identification of Representamen

This content employs dramatic visuals to emphasize a sense of crisis. The identified representamen include: (1) Main Visual: An old water tap dripping yellowish-green liquid onto cracked, dull yellowish-green soil. In the background, silhouettes of hills and industrial smokestacks/chimneys are visible. (2) Color Scheme:

The dominance of dull yellowish-green tones on the cracked soil and dripping water, dark blue for the main text, and red for the “*Cerita dari Tapak*” sticker. (3) Typography: Bold script-style lettering conveying seriousness in the phrase “Air Minum,” followed by bold typeface in the phrase “TAK LAYAK KONSUMSI”.

b. Classification of Signs (Icons, Indices, and Symbols)

An examination of the representamen using Charles S. Peirce’s trichotomy yields the following classification:

Table 1. Classification of Sign Types in W1 Content from @walhisulteng

Representamen (Sign)	Peircean Sign Type	Object (Represented)	Relationship
Image of a water tap and cracked soil	Icon	The physical form of water infrastructure and dry land conditions	Resemblance/Similarity
Cracked soil and dull-colored dripping water	Index	Water crisis, drought, and water pollution originating from the source	Cause–effect (dull water as a result of pollution)
Silhouette of smokestacks (background)	Index	Points to the source of the problem: industrial activity (e.g., power plants) causing pollution	Logical connection (industry as the cause of pollution)
Text “TAK LAYAK KONSUMSI”	Symbol	Legal status and health hazards posed by the water	Linguistic convention and warning
“Cerita dari Tapak” sticker	Index	Indicates claims supported by on-the-ground evidence	Evidential linkage

c. Interpretation of Objects and Interpretants

The combination of these signs synergistically produces a strong meaning. The icon of the water tap and the index of polluted water direct the object toward issues of water quality and availability. The phrase “Air Minum TAK LAYAK KONSUMSI,” together with the indexical silhouette of industrial facilities, generates an interpretant of public fear and anxiety regarding health, visually linking the fundamental issue of drinking water to industrial activities in the background. The educational message is highly effective because it addresses a basic human need clean water. Overall, the interrelation of these signs constructs an educational discourse centered on a health crisis and basic human needs. The content elevates the narrative to the level of biological impact and survival. WALHI employs strong visual indices (cracked soil and polluted water) to emphasize that environmentally destructive industrial activities are not distant abstract issues, but immediate threats to the everyday lives of local communities. This visual strategy reinforces WALHI’s image as an advocate for communities directly affected by environmental harm.



Figure 2. W2 Content from @walhisulteng

a. Identification of the Representamen

This content employs a visually dense illustration filled with contradictions between text and imagery. The identified representamen include: (1) Main Visual: An illustration of the globe featuring expansive ocean areas (dark blue) and landmasses colored green/brown. On top of the globe are a yellow excavator, piles of logs (representing logging and burning activities), and an orangutan that appears confused. At the bottom, pipes discharge waste into the sea, depicted as floating trash. (2) Color Scheme: Dark green and dark blue dominate (environmental colors), contrasted with yellow (the excavator) and red (the orangutan/danger). (3) Typography: Large italic (script-style) lettering for the phrase “Selamat Hari Lingkungan Hidup,” placed over a somber visual background.

b. Classification of Types of Signs (Icon, Index, Symbol)

The analysis of these representamen using Charles S. Peirce’s trichotomy results in the following classification:

Table 2. Classification of Sign Types in W2 Content @walhisulteng

Representamen (Sign)	Peircean Sign Type	Object (Represented)	Relationship
Image of an Excavator on the Earth	Icon	The physical form of heavy machinery, representing excavation/mining activities	Resemblance/Similarity
Pipes Discharging Waste into the Sea	Index	Water and marine pollution originating from a specific source (pipes)	Cause–Effect (Pipes indicate pollution)
Shocked/Confused Orangutan	Index	Habitat destruction and threats to biodiversity	Cause–Effect (Logging causes habitat loss)
Text “Selamat Hari Lingkungan Hidup”	Symbol	A conventional global celebration; when placed over images of destruction, it becomes a symbol of irony	Social Convention & Irony

Globe Surrounded by Destruction	Symbol	Global vulnerability and a warning that the crisis is widespread	Universal Convention
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c. Interpretation of the Object and Interpretant

The combination of these signs synergistically produces a strong meaning. The icons and indices (excavator, waste discharge, orangutan) direct the object toward the issue of massive ecosystem degradation. The resulting interpretant is a sense of irony, concern, and an urge to take action rather than merely celebrate. This content effectively uses the occasion of World Environment Day as an index pointing to failures in environmental protection. From a semiotic perspective, WALHI avoids idealized celebratory icons (such as tree planting) and instead chooses icons that depict large-scale destruction: an excavator atop the Earth, waste discharge into the sea, and a threatened orangutan. The indices in this content take the form of visualized waste discharge from pipes, which morally points to health damage and threats to biodiversity. This educational message conveys that environmental problems are multidimensional (involving forests, water, and wildlife) and rooted in industrial activities. The main educational message is reinforced by juxtaposing the symbol of World Environment Day greetings with visuals of destruction. This combination aims to provoke critical public awareness, emphasizing that formal celebrations are ineffective if massive exploitative practices continue. The content educates viewers that commemorating World Environment Day should involve critical reflection and demands for structural change.



Figure 3. D1 Content from @dlh.sultengprov

a. Identification of Representamen

This content employs a structured illustration resembling a visual guide for waste-conscious lifestyle practices. The identified representamen include: (1) Main Visual: Five illustrated boxes depicting steps in waste management: (1) a pile of waste (Prevent Waste), (2) a prohibition sign for plastic bags (Package-Free Shopping), (3) household waste sorting, (4) a clean plate (Finish Your Food), and (5) a wooden

compost box. (2) Color Scheme: The dominance of dark green (background), white (text), and bright colors in the illustrations, creating the impression of a clear and easily understandable guide. (3) Typography: A clean, legible, and formal font.

b. Classification of Types of Signs (Icons, Indices, Symbols)

The analysis of these representamen using Charles S. Peirce’s trichotomy results in the following classification:

Table 3. Classification of Types of Signs in D1 Content @dlh.sultengprov

Representamen (Sign)	Peircean Type of Sign	Object (What Is Represented)	Relationship
Five Illustrated Action Boxes	Icon	Visual forms of the five recommended waste management actions.	Resemblance/Similarity
Plastic Bag Prohibition Sign	Icon & Symbol	Icon of a plastic bag; symbol of prohibition or an appeal not to use it.	Resemblance & Convention
Text “In accordance with Circular Letter No. 02 of 2024 ...”	Index	Refers to the legal basis and regulatory legitimacy of the program.	Factual/Regulatory Connection
DLH Logo and the Slogan “BerAKHLAK”	Symbol	Authority of the government institution and principles of transparent governance.	Institutional Convention
Illustrations of Sorted Waste and Compost	Icon & Index	Icons of ideal waste management practices; indices of the expected outcomes (a well-managed environment).	Resemblance & Outcome Connection

c. Interpretation of Object and Interpretant

The combination of these signs synergistically produces a structured and legalistic meaning. The action-guide icons direct the object toward practical waste management behaviors. The indexical reference to the Circular Letter generates an interpretant of compliance, legitimacy, and encouragement to adhere to government-established regulations. The Environmental Agency (DLH) frames the waste issue as an individual responsibility that must be carried out in accordance with officially defined guidelines. This discourse strongly emphasizes behavioral change. From a semiotic perspective, the content predominantly uses icons of action steps divided into five distinct stages (Prevent Waste, Package-Free Shopping, Waste Sorting, Finish Your Food, and Compost Food Waste). These guiding icons function as educational tools that provide a concrete, easily understood, and measurable solution pathway for the public. Through these icons, DLH conveys that environmental action begins at home and through changes in daily habits. Overall, the interrelation of these signs constructs an educative and regulatory discourse. In contrast to WALHI, which adopts a bottom-up approach by critiquing authority, DLH employs a top-down communication strategy (issuing guidance legitimized by ministerial regulation to regulate bottom-up behavior within society).



Figure 4. D2 Content from @dlh.sultengprov

a. Identification of Representamen

This content uses illustrations that focus on family and travel, integrating them with environmental messages. The identified representamen include: (1) Main Visual: An illustration of a family traveling in a car during the homecoming journey (mudik). Along the road, there are color-coded waste bins (green, red, and yellow), and in front of the car there is a garbage bag marked with a large red cross (X). (2) Color Scheme: Bright and friendly colors, with red (the car) and green/yellow (the environment and waste bins). (3) Typography: Large, curved font used for the phrase “AYO MUDIK Minim Sampah!” creating a warm and inviting tone.

b. Classification of Types of Signs (Icon, Index, Symbol)

An examination of the representamen using Charles S. Peirce’s trichotomy produces the following classification:

Table 4. Classification of Types of Signs in D2 Content from @dlh.sultengprov

Representamen (Sign)	Peircean Type of Sign	Object (What Is Represented)	Relationship
Illustration of a Family in a Car	Icon	The physical form of the social activity of homecoming travel.	Resemblance/Similarity
Segregated Waste Bins	Icon	The physical form of ideal waste management facilities.	Resemblance/Similarity
Garbage Bag in Front of the Car Marked with a Red Cross (X)	Index	Points to the act of littering that should be avoided.	Cause-Effect (Waste on the road is the result of improper behavior)
Text “AYO MUDIK Minim Sampah!”	Symbol	A persuasive appeal that integrates tradition (mudik) with environmental responsibility.	Linguistic Convention (Defines the campaign)
DLH Logo and Airplane Icon	Symbol	Government institutional authority and the context of travel/connectivity.	Institutional Convention

c. Interpretation of Object and Interpretant

The combination of these signs synergistically produces a meaning of responsible encouragement. The icon of the family and the symbol of mudik direct the object toward a specific socio-cultural context. The index of the crossed-out garbage bag generates an interpretant in the form of awareness of the dangers of waste and an impulse to refrain from improper behavior. DLH frames the waste issue as a moral and public ethical responsibility that must be upheld even while celebrating tradition. D2 content represents a form of ethical and situational awareness education characteristic of DLH's managerial education model. This content seeks to integrate environmental responsibility into a specific socio-cultural activity (mudik), teaching that environmental ethics are an integral part of appropriate social behavior. From a semiotic perspective, this content employs the visual icon of a happy family traveling together, creating impressions of comfort, safety, and familiarity. This icon is paired with the symbol of the appeal "AYO MUDIK Minim Sampah!", which functions as an educational tool to instill moral awareness that travel activities should leave a "minimal waste" footprint. Overall, the interrelation of these signs constructs a participatory and persuasive message. The education promoted by DLH focuses on voluntary and positive individual behavior change, emphasizing that environmental stewardship is an integral component of successful and enjoyable social activities.

2. Semiotic Differences Between @walhisulteng and @dlh.sultengprov Content

Peircean semiotic analysis reveals a fundamental duality in environmental education strategies between @walhisulteng (a critical/structural model) and @dlh.sultengprov (a managerial and normative model). The most salient semiotic difference lies in the representation of problems. WALHI educates by highlighting systemic failures and demands for accountability, predominantly using causal indexical signs that point to cause-effect relationships originating from corporate actors or policy failures. WALHI's indices (such as "stories from the ground" stickers, red soil, failed mediation texts, cracked land, casualty texts, and indices of pipes discharging waste into the sea) aim to educate the public about crises, structural threats, and the social costs of extractive activities. In contrast, DLH educates by focusing on behavioral and managerial issues, predominantly using guiding icons and logical indexical signs that point to structured solution pathways. DLH's indices (such as indices of waste care action locations, circular letter texts, texts about killing marine animals, yellowish murky water, piles of waste, governor's instruction texts, and waste segregation visuals) function to educate the public about response efficacy and the consequences of individual negligence.

These semiotic differences directly define the role of the audience in the educational process. WALHI uses confrontational and rhetorical symbols to mobilize emotions and political action, positioning the audience as critical citizens, justice claimants, and subjects of resistance. Its objective is to cultivate critical awareness of root causes. Meanwhile, DLH employs regulatory symbols and ethical icons to emphasize compliance, ethics, and collaboration, positioning the audience as

compliant participants and micro-level environmental managers responsible for their domestic behavior. DLH's educational approach is top-down and persuasive, teaching that environmental solutions emerge from discipline and regulation. Differences in institutional authority are also clearly reflected in the use of signs. DLH builds its educational authority through formal legitimacy, consistently incorporating institutional symbols such as government logos and explicitly referencing indexical signs to emphasize the binding nature of its messages. This positions DLH as a source of technical information and managerial authority. Conversely, WALHI constructs its authority through critical symbols and moral positioning, often using dramatic visuals and alarming text. WALHI's authority is rooted in field testimonies and representations of vulnerable communities, positioning it as a critical voice that challenges and educates the public about failures in institutional accountability.

Overall, this semiotic contrast produces a polarization in the discourse of environmental education in Central Sulawesi. This gap indicates that the public receives fragmented educational messages one side demands change at the macro level (policy), while the other encourages action at the micro level (behavior). This implies the need for an educational strategy capable of synthesizing both poles in order to achieve holistic environmental awareness.

E. CONCLUSION

The visual signs on the @walhisulteng account construct environmental education related to issues of environmental degradation in Central Sulawesi Province. Icons are used to represent environmental conditions and human activities, indices indicate cause-effect relationships associated with environmental damage, while symbols function to reinforce messages through textual elements and visual conventions. The combination of these visual signs plays an important role in conveying public understanding of ongoing environmental degradation issues. The visual signs on the @dlh.sultengprov account construct environmental education that focuses on waste management issues in Central Sulawesi Province. Icons represent waste management activities and facilities, indices indicate the relationship between community behavior and its environmental impacts, while symbols strengthen educational messages through the visual conventions employed. The use of these visual signs contributes to enhancing public understanding of the importance of waste management. Based on the research findings and discussion, it can be concluded that environmental education in the Instagram content of @walhisulteng and @dlh.sultengprov demonstrates that visual signs in the form of icons, indices, and symbols are strategically employed to shape audience understanding, attitudes, and interpretations of environmental issues. Thus, Instagram functions not only as a medium for information dissemination but also as a space for the production of environmental education meaning.

The semiotic differences between the two accounts lie in the use and organization of icons, indices, and symbols in conveying environmental messages. These differences are evident in the forms of icon representation, the cause-effect

relationships constructed through indices, and the meanings of symbols based on visual conventions. The relationships among signs within each content produce distinct forms of visual environmental education. These differences indicate that institutional background has a significant influence on the visual communication strategies employed. WALHI, as a non-governmental organization, constructs environmental education based on critique, whereas DLH, as a government institution, constructs environmental education based on governance and behavioral guidance. These findings affirm that environmental education on social media is plural and ideological in nature, and can be more comprehensively understood through a visual semiotic approach.

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