

# Picture Book as Wayfinding Intervention: A Critical Visual Analysis of Zoë Learns Healthcare Signs for Multilingual Users in Southern Nigeria

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## ABSTRACT

Multilingual users of primary health centres in Nigeria face a significant but under-researched wayfinding challenge: institutional signage systems encoded in English and internationally standardised iconography that carry no bridge to the indigenous languages and cultural frameworks of their users. This study addresses that gap by critically analysing the picture book *Zoë Learns Healthcare Signs* (Stewart, 2025)—a purpose-designed visual communication artefact that deploys the conventions of the picture book genre to build wayfinding literacy among multilingual communities in Rivers State, Nigeria. Drawing on the Critical Picture Book Literacy (CPBL) framework of Stewart and Koopmans (2025), multimodal discourse analysis, and postcolonial design theory, the study evaluates how illustrator agency, identity representation, and unconscious bias operate within the book's visual text, and how its semiotic strategies bridge international wayfinding iconography with local linguistic knowledge. The analysis finds that the book makes three substantive design contributions: it constructs a culturally specific BIPOC child protagonist who repositions marginalised communities as knowing navigators; it pairs international wayfinding signs with Igbo and Ijaw equivalents, creating a multilingual bridge strategy without precedent in Nigerian healthcare design; and it deploys an enhancement mode of image-text interaction that faithfully replicates the

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semiotic challenge users face in actual healthcare environments. The study also identifies design limitations—typographic language hierarchy, inconsistent multilingual coverage, and a counterpoint safety-signs spread—and develops concrete, actionable recommendations for future iterations. By demonstrating how picture book design can function as a pre-emptive, community-embedded wayfinding literacy intervention, this study contributes an original framework applicable to inclusive health communication design in multilingual contexts across the Global South.

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## INTRODUCTION

In multilingual, post-colonial contexts, access to primary healthcare is as much a crisis of communication design as it is of infrastructure or policy. In Rivers State, Nigeria—a region of extraordinary linguistic diversity encompassing Ijaw, Igbo, Ikwerre, Ogoni, and English among its dominant languages—the built environment of public primary health centres confronts users with signage systems derived entirely from international wayfinding conventions. These conventions carry tacit assumptions about users' English literacy, familiarity with internationally standardised icons, and spatial orientation habits that derive from typographic rather than oral cultural traditions. For many users of these facilities, the signs are opaque rather than guiding—a condition that research directly links to delayed care-seeking, misnavigation, and heightened anxiety (Oluwafemi & Adeyinka, 2019; Rousek & Hallbeck, 2011).

This is not a peripheral design problem. It sits at the intersection of two well-documented failures in healthcare systems across sub-Saharan Africa: the failure to co-design health environments with the communities they serve, and the failure to recognise that visual literacy—the capacity to decode pictographic and typographic health information—is itself unevenly distributed along lines of language, class, and educational access (Hasan et al.,

2020; Gharaveis et al., 2018). Addressing these failures requires not only the redesign of existing signage systems, but the development of community-embedded interventions that build wayfinding literacy before users encounter the healthcare environment.

This study addresses a specific and largely unexamined gap in the visual communication design literature: the absence of scholarly analysis of picture books as pre-emptive wayfinding literacy tools for multilingual healthcare users. The picture book *Zoë Learns Healthcare Signs* (Stewart 2025), written and co-illustrated by Ashley Stewart, occupies precisely this gap. Situated at the intersection of children's literature, information design, and public health communication, the book deploys the conventions of the picture book genre to teach multilingual communities—through a child interlocutor—to recognise, interpret, and navigate the visual sign systems of Nigerian healthcare facilities. No prior scholarly work has examined picture books designed explicitly for this purpose, nor applied the CPBL framework to the analysis of a functional healthcare design artefact in an African postcolonial context.

The study is guided by the following primary research question: How does the visual communication design of *Zoë Learns Healthcare Signs* function as a wayfinding literacy intervention for multilingual users of primary health centres in Rivers State, Nigeria? Two sub-questions support this inquiry: (1) In what ways does the book's illustrator agency construct culturally specific representations of identity that affirm multilingual Nigerian communities? (2) What semiotic strategies does the book deploy to bridge international wayfinding iconography and local linguistic knowledge, and where do those strategies succeed or fall short?

The paper proceeds as follows. Section 2 reviews the theoretical and empirical literature on wayfinding design for multilingual users, critical picture book literacy, and picture books as visual communication design artefacts, arriving at an explicit statement of the research gap and scholarly contribution. Section 3 describes the research method. Section 4 presents results and discussion, integrating close visual analysis with theoretical

interpretation. Section 5 draws conclusions, states limitations explicitly, and develops specific recommendations for design practice and future research.

## **Theoretical Framework and Literature Review**

### **Wayfinding Design for Multilingual and Multicultural Users**

Wayfinding—the cognitive and communicative process by which individuals orient themselves and navigate built environments—has been theorised since Lynch (1960) identified urban legibility as a design imperative and Downs and Stea (1973) established cognitive mapping as its conceptual foundation. Contemporary scholarship acknowledges that wayfinding signage systems are not culturally neutral artefacts: they encode assumptions about the visual literacy, spatial conventions, and symbolic repertoires of their implied users (Mollerup 2013; Calori & Vanden-Eynden, 2015). For multilingual communities whose cognitive frameworks derive primarily from oral rather than typographic cultures, standard sign systems frequently produce navigational failure (Gharaveis et al.,2018).

The healthcare context intensifies this failure. Rousek and Hallbeck (2011) demonstrate that poor wayfinding in hospital environments generates measurable navigational anxiety, delayed care-seeking, and increased patient stress. Blacksher and Nnamdi (2021) identify linguistic marginalisation as a structural barrier to health-seeking behaviour, compounding the navigational challenge for low-literacy populations. In the Nigerian context specifically, Oluwafemi and Adeyinka (2019) found that the absence of local-language signage in tertiary hospitals correlated with delayed patient self-presentation to appropriate departments, with direct consequences for treatment outcomes. Hasan and colleagues (2020) demonstrate, across a sub-Saharan comparative study, that pictographic wayfinding systems reduce navigational errors significantly when co-designed with community input—rather than imported from high-income country healthcare templates.

Pontis (2019) argues that wayfinding design must be understood as a system of relationships between space, sign, and user rather than as a collection of isolated graphic objects—a systemic view that demands attention to postcolonial language hierarchies embedded in institutional environments

(Mignolo, 2012). Shedroff (2000) adds that meaningful communication design must address the affective dimensions of user experience, not only the informational: the anxiety of navigating an unfamiliar and potentially frightening healthcare environment is a design problem that cannot be solved by information alone.

Despite this evidence base, the field of visual communication design has produced comparatively little scholarship on proactive, community-embedded interventions that address wayfinding literacy at the point of formation—that is, before users encounter the healthcare environment for the first time. The picture book as a vehicle for pre-emptive wayfinding literacy is both practically innovative and theoretically underdeveloped. This study addresses that underdevelopment directly.

### **Critical Picture Book Literacy and Critical Visual Literacy**

Stewart and Koopmans (2025) propose Critical Picture Book Literacy (CPBL) as a reframing of Critical Visual Literacy (CVL) specifically derived from and for picture books. Their framework, developed through thematic analysis of teacher education students' self-discourse, centres three interlocking concerns: the agency and responsibility of illustrators in shaping how visuals communicate story elements; the representation of identities and lived experiences as a site of ideological significance; and the unconscious bias that operates in both the creation and reception of picture book images. Critically, CPBL insists that analysis must integrate the visual with traditional story elements—character, plot, setting—rather than treating the image as separable from narrative.

CVL itself emerges from the intersection of critical literacy and visual literacy traditions. Serafini (2022) positions CVL as an analytical stance that attends simultaneously to the perceptual, structural, and ideological dimensions of visual texts. Chung (2013) argues that CVL aims to empower learners to appreciate texts as sites of ideological struggle and to use creative tools for social activism. Newfield (2011) specifies that CVL makes visible the ways visual texts position their readers below the level of consciousness—a dynamic directly relevant to the analysis of wayfinding signs whose communicative

assumptions are typically invisible to their designers and unremarked by their users.

Applied to a functional picture book designed for healthcare navigation, CPBL offers analytical purchase that purely semiotic or wayfinding frameworks alone cannot provide: it keeps the question of who the book is for, and whose knowledge and identity it validates, at the centre of the analysis. This is particularly important in the Nigerian postcolonial context, where the design of institutional health environments has historically ignored the linguistic and cultural frameworks of the communities they serve (Mignolo, 2012; Freire 1970).

### **Picture Books as Visual Communication Design Artefacts**

Picture books are complex multimodal texts in which visual and textual elements co-produce meaning in ways neither mode achieves alone. Nikolajeva and Scott (2000) identify five dynamics of visual-textual interaction—symmetry, complementarity, enhancement, counterpoint, and contradiction—that structure meaning-making across image and word. Short, and colleagues (2018) specify illustrations as the intersection of visual elements (line, colour, shape, composition), artistic styles, and literary elements, insisting that illustrator choices carry as much theoretical significance as authorial ones. Serafini (2010) argues that reading multimodal texts requires simultaneous engagement with perceptual, structural, and ideological dimensions—to privilege one is to produce incomplete analysis. Callow (2016) demonstrates that picture book design encompasses structural anatomy, medium and colour use, layout, typography, and visual language features including point of view, gaze, shot distance, and organisational salience—all of which become critical variables when the book's purpose is to transfer actionable visual knowledge. Frascara (2004) establishes that design for social purposes must evaluate not only the formal properties of visual artefacts but their effectiveness within the social contexts of reception—a standard this study applies directly to Zoë Learns Healthcare Signs. Within the VCD journal tradition, Rahmawati and Sachari (2022) and Sari, and Herlambang (2023) demonstrate the applicability of semiotic and critical

visual frameworks to Indonesian children's books as cultural design artefacts, establishing a comparative scholarly context for the present study's Nigerian case. However, neither study addresses picture books designed for functional healthcare communication, nor do they engage the wayfinding design literature. This study bridges those two traditions for the first time.

### **Research Gap and Scholarly Contribution**

Three gaps in the existing literature justify this study. First, while wayfinding design scholarship has documented the failure of standard sign systems for multilingual populations in sub-Saharan healthcare environments, no study has examined a designed artefact specifically intended to build wayfinding literacy before users encounter the healthcare setting. The picture book as a pre-emptive wayfinding literacy intervention is an unexamined design category. Second, while CPBL has been applied to children's literature in educational contexts, it has not been applied to a picture book designed for functional healthcare communication—a hybrid generic position that demands analytical frameworks from both fields. Third, critical visual analysis of locally-produced Nigerian picture books as visual communication design artefacts is virtually absent from the scholarly literature; the existing comparative work (Rahmawati & Sachari, 2022; Sari & Herlambang, 2023) derives from Indonesian contexts.

This study contributes to all three gaps. It proposes a theoretically grounded account of how picture book design can function as a community-embedded, pre-emptive wayfinding literacy intervention—an account with implications for inclusive health communication design well beyond the Rivers State case. It extends the application of CPBL to a new domain, demonstrating that the framework's three concerns—illustrator agency, identity representation, and unconscious bias—yield productive analytical results when applied to a functional design artefact rather than a purely narrative text. And it produces the first critical visual analysis of a Nigerian picture book as a visual communication design artefact, contributing to the growing body of Global South design scholarship.

## RESEARCH METHOD

This study employs qualitative critical visual analysis as its primary methodology, combining the CPBL framework of Stewart and Koopmans (2025) with multimodal discourse analysis informed by Serafini (2010, 2022) and Nikolajeva and Scott's (2000) typology of visual-textual dynamics. Critical visual analysis is an established method in visual communication design research (Frascara, 2004; Rose, 2016) and is appropriate where the research aim is to uncover the ideological and communicative dimensions of a designed visual artefact rather than to quantify its effects on audiences. The method is necessarily interpretive and text-centred; empirical user-based validation lies outside its scope—a limitation that is explicitly acknowledged in Section 5.

The primary data source is the picture book *Zoë Learns Healthcare Signs* (Stewart, 2025), examined in its entirety across all eleven illustrated spreads. Analysis proceeded in three iterative stages. In the first stage, a descriptive inventory was produced, documenting sign categories, colour palettes, typographic hierarchies, compositional strategies, image-text dynamics, and language use across each spread. In the second stage, the three CPBL dimensions were applied systematically: illustrator agency was examined through compositional, characterisation, and cultural signification choices; identity representation was examined across the book's full cast of characters and sign figures; and unconscious bias was identified through analysis of both explicit representational choices and naturalised visual conventions. In the third stage, Nikolajeva and Scott's (2000) typology was applied to classify the predominant image-text dynamic in each spread, enabling comparative analysis of the book's communicative consistency across sign categories.

Secondary data sources include the scholarly literature reviewed above, and empirical data from the first author's doctoral fieldwork on wayfinding challenges faced by multilingual users of primary health centres in Rivers State—data that inform the analytical interpretation of the book's design decisions without constituting independent empirical validation of their effectiveness.

The researchers' dual position as author of the book under analysis and as its critical evaluators is acknowledged as a significant methodological consideration. Efforts to maintain analytical distance included systematic application of the CPBL framework, triangulation of interpretations against the academic literature, and the involvement of a second author who brings independent scholarly perspective. The analysis was conducted with explicit awareness of the researchers' positionality as Nigerian designers and educators working within the postcolonial linguistic context the book addresses—a positionality that is both a resource (for contextual depth) and a risk (for analytical blind spots).

## **RESULTS AND DISCUSSION**

### **Overview of the Artefact**

Zoë Learns Healthcare Signs (Stewart, 2025) is subtitled *A Guide for Multilingual Users* and authored by Ashley Stewart alongside co-illustrator Uyiosa Osagie. The book comprises eleven illustrated spreads introducing hospital sign categories: safety signs, role indicators, department signs, functional signs, and environmental signs. Each sign is presented as an icon against a blue field, accompanied by an English text explanation and, across approximately two-thirds of the spreads, local-language equivalents in Igbo and Ijaw. The consistent design grammar across spreads—blue icon field, yellow speech-bubble explanation, purple watercolour background with geometric accents—produces a visual coherence that signals both informational structure and accessible register.

The book's cover (Figure 1) immediately establishes its representational and communicative programme. Against a schematic hospital facade, Zoë stands in confident frontality—dark-skinned, culturally marked by Ankara print hair ribbons and dress, and visually central in a composition that locates her between the viewer and the institution. The title typography's combination of informal hand-drawn lettering and clean subtitle text performs the dual register of the entire book: accessible to children, serious in purpose.

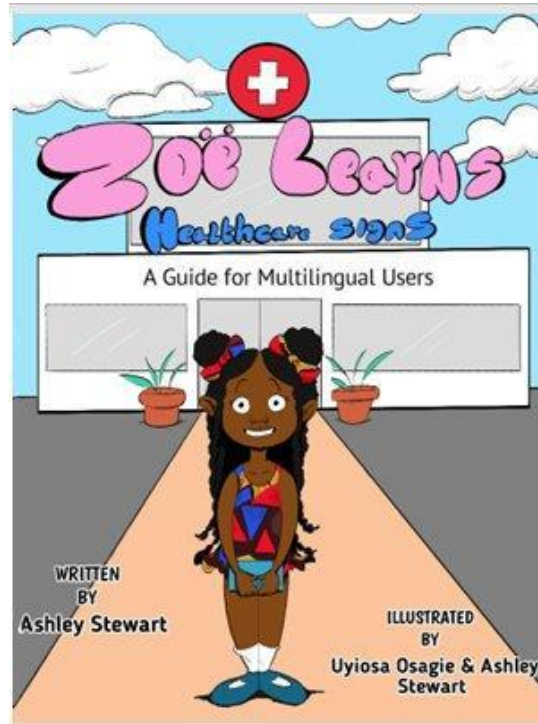


Figure 1. Front cover of Zoë Learns Healthcare Signs  
Source: Stewart, 2025

Zoë's central placement between viewer and hospital institution visually enacts the book's pedagogical programme: the child guide mediates between community and healthcare environment.

### **Illustrator Agency and the Construction of the Navigating Subject**

The most theoretically consequential illustrative decision in the book is the character of Zoë herself. From a CPBL perspective, the choice of protagonist position is an ideological act: it determines whose gaze readers inhabit, whose competence is affirmed, and whose anxiety about the healthcare environment is validated as a starting point rather than a deficiency (Stewart & Koopmans, 2025; Bishop 1990). By positioning a young Black Nigerian girl as the book's knowing guide—not a patient, not a parent, not a healthcare worker, but a child who already knows what these signs mean and is teaching others—the illustrator performs a substantive inversion of the

implied-user assumptions embedded in standard wayfinding design (Mollerup, 2013).

Frascara (2004) argues that design for social purposes must begin from the identities and realities of its intended users rather than from the designer's assumptions about them. The character of Zoë embodies this principle at the level of visual representation. Her Afro-puff hair adorned with Ankara bows, her African print garment, and her dark skin tone constitute a set of cultural markers that are specific rather than generic—they place her in Southern Nigeria, not in a vague 'African' generality. This specificity matters because, as Enriquez (2021) argues in the context of diverse children's books, meaningful representation requires the recognition of particularity, not merely the inclusion of diversity. The nurse figure visible in the background of the opening spread (Figure 2) reinforces this specificity at the level of secondary character: a Black woman in professional scrubs, rendered naturalistically, who establishes that the healthcare environment is staffed by members of the same community Zoë represents.

A productive tension in the illustrator's construction of Zoë concerns the cartoon stylisation of her character—exaggerated eyes, elongated limbs, pointed ears—which places her within a global animated-media aesthetic rather than in a naturalistic visual tradition specific to Nigerian illustration. This tension is not a failure; cartoon stylisation serves accessibility and recognisability for young readers, and the genre convention is well-established. However, it represents a site of unconscious bias in the sense that CPBL defines: a design choice shaped by the dominant conventions of children's media production that may inadvertently subordinate cultural specificity to commercial aesthetic norms (Newfield, 2011; Stewart & Koopmans, 2025). Future iterations of the character's design might explore how to retain the accessibility of cartoon stylisation while developing a more distinctively Nigerian visual idiom—drawing, for instance, on traditions of Nigerian graphic art and illustration rather than solely on global animated-media conventions.



Figure 2. Zoë's introductory spread  
Source: Stewart, 2025

The second-person speech bubble directly addresses the reader, enacting the peer-to-peer relational mode that distinguishes the book's communicative register from institutional instruction. Note the Black nurse in the background, establishing professional representation.

### **Representation of Identities and the Politics of the Icon**

The book's treatment of professional identity in healthcare iconography illustrates a structural tension in wayfinding design that has received insufficient scholarly attention: the tension between the universalising ambition of international pictographic systems and the representational needs of specific communities. The doctor and nurse icons (Figure 3) deploy featureless blue silhouettes—the standard international convention for professional role indicators (ISO 7010). This choice successfully avoids the gender-normative stereotyping that characterised earlier generations of healthcare iconography, in which the doctor was invariably male and the nurse female (Moya Guijarro & Ventola, 2022). However, by erasing demographic particularity entirely from the professional

figures, the icons also erase Nigerian-ness—they cannot signal to a Rivers State community member that the healthcare workers they will encounter share their appearance, language, or cultural background.



Figure 3. Doctor and nurse role-indicator signs with Igbo-language equivalents ('dibia oyibo/dokita' and 'noosu/nosu')  
Source: Stewart, 2025

The featureless silhouettes successfully avoid occupational gender stereotyping but cannot convey culturally specific professional identity. This tension between universalising and localising impulses in icon design is a structural feature of the postcolonial wayfinding problem, not a correctable design error. The ISO standard silhouettes are what users will encounter on the walls of the primary health centre; the book's use of them is pedagogically appropriate precisely because it prepares users for the signs they will actually see. What the book adds—the local-language equivalents ('dibia oyibo', 'noosu')—partially compensates for the cultural erasure of the icon itself by validating the user's own linguistic world. This is a design strategy of considerable ingenuity: it accepts the constraint of the international standard while using the verbal channel to do the cultural work the visual channel cannot.

The family clinic sign (Figure 4) presents the complementary problem of over-specific rather than under-specific iconography. The family silhouette composed of two gender-differentiated adults and two children encodes a normative heterosexual nuclear family structure that is the default convention in international wayfinding design. As Moya Guijarro and Ventola (2022) demonstrate, gender-differentiated family icons routinely reproduce heteronormative assumptions without deliberate intent—a textbook instance of what CPBL identifies as unconscious bias operating through visual convention (Newfield, 2011). While redesigning this icon to include alternative family structures would carry its own social complexity in the Nigerian context, naming the convention as ideologically loaded rather than merely conventional is an important step in developing design literacy around healthcare iconography—both for users of this book and for designers who create such systems.

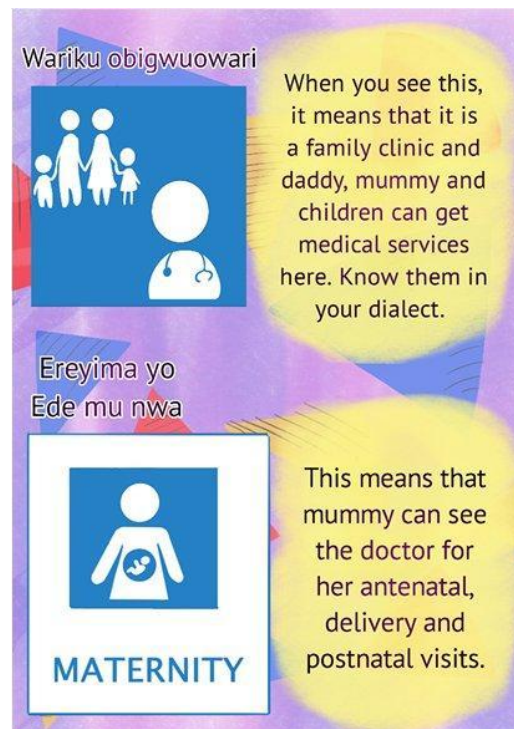


Figure 4. Family clinic and maternity signs with Igbo-language equivalents ('Wariku obigwuowari' and 'Ereyima yo/Ede mu nwa')  
Source: Stewart, 2025

The family clinic icon encodes a normative heterosexual family structure through visual convention—an instance of unconscious bias in international wayfinding iconography.

### **Language Hierarchy, Multilingual Strategy, and Postcolonial Design**

The most analytically rich dimension of the book, and its most significant design innovation, is its treatment of language. No prior published wayfinding resource for Nigerian healthcare environments has incorporated indigenous-language equivalents for the sign categories that users encounter. The book's inclusion of Igbo and Ijaw terms alongside international signs—'Wariku obigwuowari' for family clinic, 'Ereyima yo / Ede mu nwa' for maternity, 'Ngberegede / Pipi obi qwuoyo' for emergency—constitutes a genuine contribution to inclusive health communication design that the field of visual communication in Nigeria has not previously made.

Yet the typographic hierarchy within which these equivalents appear reproduces the postcolonial language order it seeks to ameliorate. In every spread, English dominates: it appears in the largest type on the sign icon itself (MATERNITY, EMERGENCY, PHARMACY) and in the explanatory speech bubbles, while the indigenous-language equivalents are rendered in smaller text above the icon as secondary annotations. Allen (2021) identifies this typographic subordination as a structural feature of postcolonial institutional design that positions indigenous languages as supplements to rather than co-equal carriers of official meaning. From a critical design perspective, the hierarchy is not merely aesthetic—it communicates a message about whose language belongs in the authoritative position and whose belongs in the gloss.

This critique must be held in balance with recognition of what the book achieves. Freire's (1970) foundational principle that transformative literacy education begins from the learner's own cultural reality—rather than imposing an external framework—is enacted here in the specific act of placing 'dibia oyibo' above the doctor icon: the child reader encounters their own word for this healthcare professional before they encounter the English label. That sequencing matters. Even within a typographic hierarchy that privileges

English, the local-language term is present and is presented first in the reading sequence. This is a more sophisticated engagement with the postcolonial language problem than the standard solution—which is to erase indigenous languages from institutional environments entirely.

The design limitation that most directly undermines the book's multilingual ambition is the inconsistency of local-language coverage across spreads. The waste disposal signs, the toilet sign, the ambulance spread, and the hospital H-sign carry no local-language annotations. This inconsistency is functionally significant: users who depend on the indigenous-language bridge to decode an unfamiliar icon will find it absent for some of the signs they are most likely to encounter. A concrete and actionable design recommendation arising from this analysis is that future editions of the book should complete the local-language annotation for all sign categories, and should do so in consultation with expert speakers of the target languages to ensure accuracy and sociolinguistic appropriateness.

### **Semiotic Structure and the Enhancement Mode**

Applying Nikolajeva and Scott's (2000) framework of visual-textual dynamics, the book's predominant mode of image-text relationship is enhancement: the sign icon and the explanatory speech bubble provide different information, each extending the meaning the other cannot convey alone. The maternity icon—a pregnant figure—does not communicate 'antenatal, delivery and postnatal visits' to a reader unfamiliar with the international iconographic convention; the speech bubble provides that specification. Conversely, the speech-bubble text 'mummy can see the doctor for her antenatal, delivery and postnatal visits' does not specify which department of the building to navigate toward; the MATERNITY label on the sign icon provides that directional anchor. The two modes are mutually necessary—neither is sufficient alone.

This enhancement dynamic has important theoretical implications for understanding what the book does communicatively. Serafini (2010) argues that enhancement is the most demanding mode of visual-textual interaction for readers, because it requires simultaneous engagement with both channels rather than reliance on one. The book does not simplify the wayfinding task;

it replicates its semiotic structure in a pedagogically scaffolded environment. This means the book is training readers for the actual cognitive challenge they will face, not a reduced version of it—a design decision consistent with Frascara's (2004) principle that social design must not condescend to its users by oversimplifying the communication problems they face.

The yellow speech-bubble typography warrants specific attention as a typographic and compositional strategy. Speech bubbles carry a well-established semiotic association with children's media and comics—they signal conversational, interpersonal communication rather than institutional instruction (Kress & van Leeuwen 2006). In a book designed for users who may experience healthcare environments as intimidating, alienating, or associated with colonial-era medical authority (Mignolo, 2012), the choice to deliver wayfinding information through Zoë's conversational speech bubble rather than through a conventional caption or label is a sophisticated affective design decision. It recasts the information as peer knowledge-sharing rather than institutional direction—Zoë is not a sign; she is a guide who happens to know what the signs mean. This interpersonal register is precisely what Shedroff (2000) identifies as the experiential dimension of meaningful communication design: the design does not merely inform; it positions the user as competent and welcomed.

The safety signs spread (Figure 5) represents the book's most significant semiotic departure from its predominant mode. Rather than presenting individual signs with paired explanations, it offers a collage of seven safety signs—caution wet floor, please use handrail, danger, disabled ramp access, hazardous chemicals, gloves, mask—arranged dynamically without individual explanatory text. Nikolajeva and Scott (2000) would classify this as a counterpoint dynamic: the image presents considerably more information than the text articulates. The compositional choice reflects the visual reality of encountering multiple safety signs simultaneously on a hospital wall, and the vibrant dynamism of the layout is appropriate to the potential hazard level these signs convey. However, for users who are genuinely unfamiliar with safety iconography—the population the book explicitly targets—this spread provides insufficient individual explanation.

The actionable design recommendation is clear: future editions should present each safety sign with an individual speech-bubble explanation, consistent with the book's approach to all other sign categories.



Figure 5. Safety signs collage spread  
Source: Stewart, 2025

Demonstrating the counterpoint image-text dynamic: multiple signs are presented without individual explanatory text, producing a visually dynamic but informationally compressed spread that may be less effective for users unfamiliar with international safety iconography.

The hospital H-sign and ambulance spread (Figure 6) offers the most sophisticated compositional strategy in the book. Rather than isolating the signs against the standard purple background, this spread situates them within a fully illustrated environmental scene—an ambulance on a road beside a hospital H-sign on a post, with a directional arrow below. This narrative contextualisation grounds the wayfinding signs in the lived experience of the

health-seeking journey: users see not just the sign in isolation but the kind of environment in which they will encounter it. Research consistently finds that contextualised sign presentation improves comprehension and recall for low-literacy users (Gharaveis et al., 2018; Hasan et al., 2020). The book's deployment of this strategy for the hospital and ambulance signs—the signs most commonly encountered before entering the building, when orientation anxiety is highest—reflects design sensitivity to the sequential experience of healthcare navigation.

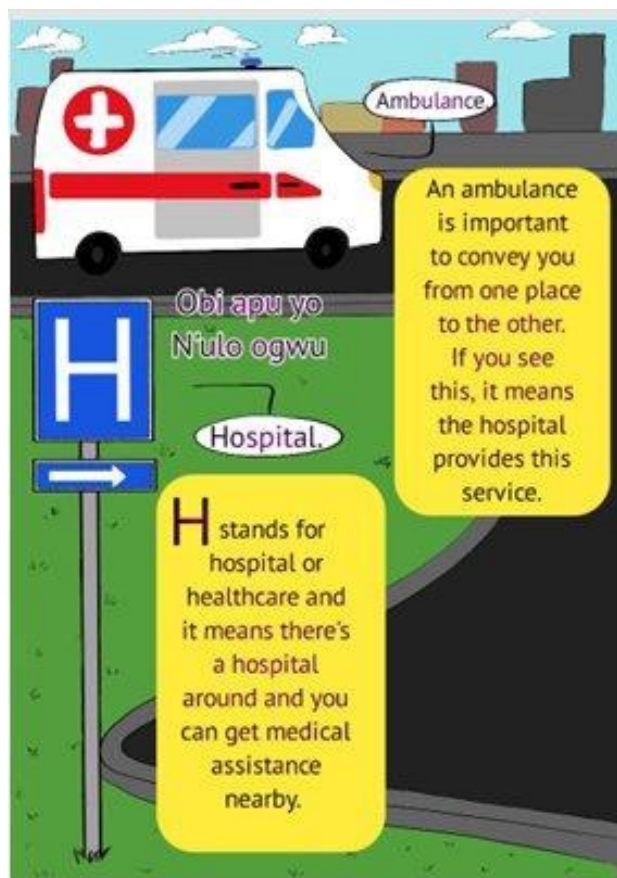


Figure 6. Hospital H-sign and ambulance spread  
Source: Stewart, 2025

The contextualised environmental illustration grounds wayfinding signs within the lived experience of the health-seeking journey—a compositional strategy that research indicates improves comprehension for low-literacy users.

## **Generalisation: Toward a Framework for Picture Book Wayfinding Design**

The analysis above is grounded in a specific artefact and a specific context. However, its findings point toward a set of design principles applicable to the broader challenge of multilingual wayfinding literacy in healthcare environments across the Global South. These principles are proposed not as universal prescriptions but as generative starting points for the design field:

First, community-embedded protagonist design: wayfinding picture books should deploy a child protagonist whose visual identity is culturally specific to the target community, not generically 'diverse.' Cultural specificity—in dress, hairstyle, skin tone, setting—validates the community's presence in the healthcare environment and builds the affective trust that information transfer requires (Bishop, 1990; Enriquez, 2021).

Second, multilingual typographic co-equality: local-language terms should be presented at equal typographic weight to English labels, not as subordinate glosses. Where the international standard icon must be preserved for its wayfinding function, the indigenous-language term should be the primary verbal label, with the English equivalent secondary. This reversal of the standard hierarchy is both politically significant and practically achievable within existing design conventions.

Third, semiotic fidelity over simplification: the image-text design of wayfinding literacy materials should replicate the semiotic structure of the actual healthcare environment rather than simplifying it. Users who learn to decode the same icon-text pairing they will encounter on hospital walls are better prepared than users who have learned a simplified equivalent (Frascara, 2004).

Fourth, contextualised sign presentation for pre-entrance wayfinding: signs that users encounter before entering the building—H-signs, ambulance symbols, car park and entry markers—should be presented within illustrated environmental contexts rather than against plain backgrounds, because contextualisation improves comprehension and recall for first-time users navigating an unfamiliar spatial sequence (Hasan et al., 2020).

These principles are actionable for visual communication designers working in multilingual healthcare contexts across Nigeria and the broader Global South, and they are directly applicable to the design of digital wayfinding tools, printed community health guides, and in-facility signage systems—not only to picture books.

## CONCLUSION

This study set out to examine how the visual communication design of *Zoë Learns Healthcare Signs* (Stewart, 2025) functions as a wayfinding literacy intervention for multilingual users of primary health centres in Rivers State, Nigeria. Analysed through the CPBL framework and multimodal discourse theory, and situated within the broader literature on postcolonial healthcare design and inclusive visual communication, the study yields three principal findings that advance both the specific case and the field.

The first finding concerns illustrator agency and identity representation. The book's construction of a culturally specific Black Nigerian girl protagonist—Zoë, with Ankara print bows and African print garments—constitutes a representational intervention in a design genre that has rarely affirmed the particularity of Southern Nigerian children's identity. By positioning this character as the knowing guide rather than the lost patient, the book inverts the implied-user hierarchy of standard wayfinding design and models, for its young readers, a relationship to the healthcare environment grounded in competence rather than anxiety. This representational strategy has implications for healthcare design well beyond the picture book: it demonstrates that wayfinding systems can be designed to affirm rather than marginalise the communities they serve.

The second finding concerns the multilingual bridge strategy. The pairing of international wayfinding icons with Igbo and Ijaw equivalents is without precedent in Nigerian healthcare design and constitutes the book's most practically significant design contribution. The typographic language hierarchy—which places indigenous terms above icons but in smaller type than English labels—reproduces the postcolonial language order while

simultaneously disrupting it by insisting on the presence and validity of indigenous-language knowledge. Future iterations should aim for typographic co-equality, and must complete the local-language annotation across all sign categories currently lacking it.

The third finding concerns semiotic structure. The book's predominant image-text dynamic is enhancement—the most demanding and most instructionally effective mode of visual-textual interaction—which replicates the semiotic challenge of actual hospital sign-reading rather than simplifying it. The exception is the safety signs spread, whose counterpoint dynamic makes it the book's least effective spread for unfamiliar users; individual explanations for each safety sign would resolve this inconsistency. The hospital and ambulance spread's contextualised narrative illustration represents the book's most sophisticated compositional achievement, grounding wayfinding signs in the experiential reality of the health-seeking journey.

Together, these findings support the proposition that picture book design can function as a genuinely effective pre-emptive, community-embedded wayfinding literacy intervention—and that this is a design category the field of visual communication design should develop further. The four design principles proposed in Section 4 (community-embedded protagonist design; multilingual typographic co-equality; semiotic fidelity over simplification; contextualised sign presentation for pre-entrance wayfinding) provide an actionable framework for that development.

Two limitations of this study must be stated explicitly. First, the analysis is entirely text-centred and lacks user-based empirical validation. Whether the design strategies identified here achieve their intended communicative effects with multilingual children and caregivers in Rivers State is an empirical question that this study cannot answer; it can only motivate and inform the research that should answer it. Future research should conduct community-based reception studies with target users across the linguistic groups of Southern Nigeria, using comprehension and navigation task protocols to evaluate the book's design effectiveness. Second, the researchers' dual position as creators of the book under analysis and as its

critical evaluators is a methodological constraint that systematic application of the CPBL framework only partially offsets; independent replication of this analysis by scholars without authorial stake in the artefact would strengthen the findings.

Beyond the Rivers State case, this study's broader contribution is methodological and theoretical: it demonstrates how CPBL can be extended from its original educational context to the critical analysis of functional design artefacts for health communication, and it establishes the picture book as a scholarly object of interest for visual communication design research in multilingual, postcolonial contexts. In doing so, it opens a line of inquiry at the intersection of design studies, public health communication, and critical visual literacy that has barely begun to be explored.

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