Beyond Visual Metaphors: Conceptualizing Abstract Language Among the Visually Impaired Individuals

Aliyu Muhammad Na Ta'ala[1], Murtala Abdurrashid[2], Salisu Ismaila[3*]

[1]*Chief Lecturer, Department of Hausa, Federal College of Education, Katsina, Nigeria*
[2]*Senior Lecturer, Department of Arabic, Federal College of Education, Katsina, Nigeria*
[3]*Lecturer III, Department of Primary Education, Federal College of Education, Katsina, Nigeria*

Abstract: **This study explored how visually impaired individuals understand abstract language, which is often expressed through metaphors rooted in visual experiences. Data was gathered through interviews with visually impaired participants in the Katsina Local Government Area to investigate the impact of auditory, tactile, olfactory, and gustatory cues, as well as cultural and experiential factors, on their interpretation of abstract language. The research is grounded in the Conceptual Metaphor Theory (CMT) proposed by Lakoff and Johnson in 1980. The findings indicate that participants predominantly utilize non-visual strategies, particularly touch and hearing, to make sense of abstract expressions, often leading to misunderstandings when confronted with visual metaphors. Moreover, the use of explanations, examples, comparisons, and personal experiences proves to significantly enhance comprehension. Braille literacy and audio resources also play a crucial role in facilitating access to abstract concepts, underscoring the embodied and multi-sensory nature of meaning-making. In conclusion, the study suggests that the capacity for abstract thought among visually impaired individuals is not diminished but is instead structured differently. These results broaden the scope of metaphor theory by addressing its inherent visual bias, promoting inclusive pedagogical strategies through multisensory teaching practices, and informing policies aimed at creating accessible educational and cultural resources.**

Keywords: **Visual Metaphors, Abstract Concepts, Visually Impaired Individuals.**

1. Introduction

Language is the heart of the way that human beings think and speak about abstract experience. Large amounts of it are charted through metaphor, which charts abstract domains onto the body and concrete experience (Lakoff & Johnson). Conceptual Metaphor Theory (CMT) declares that common language is essentially metaphorical, based on tangible concepts like time, love, and justice on sensory-motor schemas (Kövecses). For example, the time is money metaphor structures the abstract time space in terms of the more tangible financial space. Such metaphors are bound to enhance sight as the primary modality of human thinking and linguistic structure.

Though pre-eminent, this orientation contains an inherent limitation: typical visual experience is taken for granted. Blind and visually impaired people put cognitive linguistics and disability studies into question by raising serious doubts regarding visual metaphors. As studies demonstrate, they interpret so-called "visual" metaphors in comparison to other modalities like touch, hearing, and movement (Lacey et al.). Phrases such as 'take a closer look' can be read in tactile or spatial terms, illustrating that metaphorical meaning is not specific to the visual but can be multisensory (Landau). These results contradict the premise that metaphors are vision-specific, yet instead confirm the adaptability of human thinking.

In Nigeria, metaphor scholarship has directed attention to embodied and visualized notions of language, particularly in indigenous languages. Research in Hausa perception verbs, for instance, shows the way expressions based on sight converge metaphorical sense and polysemy (Muhammed). Likewise, research confirms that metaphor does not function as decoration but as a primary tool of reasoning and sense-construction (Adegbite). Nonetheless, as in international scholarship, such research resorts to visual metaphors without paying attention to the way non-visual realms construct thought. This disparity is stark in Nigeria, where visual disability is prevalent and conspicuous to society.

Three million Nigerians are estimated to be visually impaired, many of whom are confronted with literacy, education, and inclusion barriers (Adetoro). Non-availability of Braille, inadequate institutional assistance, and overdependence on listening or touch result in such disparities. Such cases as that of Kyari, Fatima, et al., Nigeria's first visually impaired professor, exemplify resilience and cognitive output. Such cases aside, scant research has been carried out on the cognitive processes of visually impaired Nigerians as they maneuver abstract spaces through language.

This research, Beyond Visual Metaphors: Conceptualizing Abstract Language among the Visually Impaired, fills this gap. It investigates how visually impaired Nigerians conceptualize abstract domains in terms of metaphor and how their tendencies contrast with blind speakers. Through a consideration of sensory modalities like hearing, touch, and movement, the research extends metaphor theory and contributes to inclusive

linguistic studies. Its applicability extends beyond theoretical contribution to providing accessibility, education, and representation of the visually impaired in Nigeria.

2. Statement of the Problem

Metaphor is at the core of human thought and communication and tends to organize abstract concepts like time or love in terms of body experience that privileges sight (Lakoff & Johnson, 1980). Phrases like "I see your point" reveal this visually-biased tendency. For the blind, however, meaning is negotiated by sound, touch, smell, and taste, and hence it is fascinating to consider how they would interpret largely vision-dominated abstract language.

In countries such as Nigeria, where proverbs and idioms are a big part of the culture, visually derived expressions will similarly exclude visually impaired individuals. For example, the Hausa proverb *Ko wa ya sayi rariya, ya san cewa zata zubar da ruwa* ("whoever buys a sieve knows it will leak water") is based on visual-spatial imagery that may be less easily understood by visually impaired individuals. Such metaphors make it more difficult to communicate, learn, and socialize.

Although some studies have been conducted on blind and sighted people's language processing (Genesea et al., 2021) and pedagogical application of visual metaphors (Cotterill, 2024; Manjang et al., 2024), few studies have examined how blind Nigerians think about abstract concepts. Most research has neglected the multi-sensory, cultural, and experiential manner in which they construct mental representations. With Nigeria's estimated three million blind individuals (Adetoro, 2010), this disparity supports a visual bias in metaphor research and makes academic inclusivity unthinkable.

This research thus seeks to investigate how blind Nigerians think abstract concepts through exploration of the work done by auditory, tactile, olfactory, and gustatory information, language and cultural impact, and experience and body simulation's contribution to build representations in the mind. It seeks to enhance metaphor theory, encourage inclusive linguistic research, and build more refined disability and communication knowledge in Nigeria's socio-cultural setting.

3. Literature Review

Scholarship on metaphor has long referred to embodied experience as fundamental to the structuring of thought and language. Lakoff and Johnson's original Conceptual Metaphor Theory holds that the mind utilizes sensory experience to conceptualize abstract thought via mappings such as knowing is seeing or time is space (Lakoff and Johnson 5). But this visual bias is ill-equipped to explain how the visually impaired, such as the blind, comprehend language and abstract thought. Gibbs suggests that metaphor is not an adornment but a cognitive tool for organizing experience, with the possibility that other sensory modalities might be equally good sources of metaphor (Gibbs 214).

Recent empirical evidence suggests that the blind use multi-sensory media in processing abstract notions. Bedny et al. uncover that the blind use the auditory and haptic modalities for solutions that the visually engaged respondents normally solve with the visual imagery (Bedny et al. 1157). Cattaneo and Vecchi similarly posit that the blind embody experience using kinesthetic and auditory modalities, thereby allowing them to grasp metaphorical language with exactness (Cattaneo and Vecchi 976). These results contradict the conventional presumption that metaphorical comprehension relies mainly on vision and point to the conventional flexibility of cognitive approaches in language processing.

In African cultures, metaphor also has a vital role to encode cultural knowledge. Finnegan explains that African oral tradition immensely depends upon figurative language like proverbs, analogies, and idioms etc. in the sense of describing abstract moral and social ideals (Finnegan 389). Nigerian discourse is especially metaphorically filled, and Hausa, Yoruba, and Igbo proverbs employ cultural wisdom in imagery (Adegbite 44). For example, visual metaphors are commonly employed to represent wisdom or foresight, but such imagery might not be within the reach of the blind. Such employment of visual metaphor in culture is challenging to the blind in Nigeria on issues of inclusion and interpretation.

Although Nigerian scholarship has, to a limited extent, addressed disability and education, little has been done in relation to metaphor and the blind. Akinyemi discovers that metaphor holds a privileged place in Yoruba proverbs and everyday communication, but none of these studies touched on accessibility to the non-visual learner (Akinyemi 120). In like manner, Okoye studied inclusive education in Nigeria but was mainly concerned with infrastructural and policy matters as opposed to cognitive or linguistic accessibility (Okoye 15). Therefore, there is a lack of knowledge on how blind Nigerians think abstract language and accommodate metaphorical cultural discourse.

Briefly, universality and diversity of thought of a metaphorical nature exist in research, but visual bias applies to most research. The Nigerian cultural context of metaphor having an inherent role in social and moral discourse further enhances the significance of this study. This study fills a gap to the extent that it examines how blind Nigerians think about abstract concepts outside the visual domain, employing auditory, tactile, olfactory, and personal experiential materials.

4. Theoretical Framework

This research is based on Conceptual Metaphor Theory (CMT) of Lakoff and Johnson (1980), that abstract concepts are conceptualized to a large extent by mappings of more bodily, sensorimotor experiences. For instance, metaphors like time is money or love is a journey indicate how individuals utilize sensory and bodily experience in trying to organize and make sense of abstract domains.

In environments where the vision is the prevailing source of metaphorical mapping, metaphors tend to draw upon visual imagery (e.g., to see your point or have a bright idea). Nevertheless, for blind people, overdependence on other sensory modalities such as touch, hearing, motion, and body experience may yield supplementary metaphorical resources for the concept of abstract ideas. Therefore, CMT provides a

helpful tool with which to examine how blind people construe abstractions such as beauty, love, justice, or wisdom without relying heavily on visual schema.

Through the application of CMT, this research assesses whether metaphorical mappings among the blind are organized differently, through what means non-visual sensory experiences are drawn in as source domains, and what is discovered regarding the universality or sensory/cultural specificity of metaphor. Through this framework, it is possible to analyze metaphor as both a cognitive and a cultural phenomenon, where the innovative strategies by which the blind imagine abstract language "beyond visual metaphors" stand out.

5. Methodology

This research utilizes a qualitative design grounded in cognitive linguistics and sociolinguistics to illustrate the manner in which blind people mentally think of abstract concepts in terms more than visual metaphors. Thirty-two individuals were purposively sampled from schools for the blind, Umaru Musa Yar'adua University, Federal College of Education Katsina, and disability organizations in Katsina, Nigeria, to obtain diversity in gender, age (10–45 years), and level of education. Data were collected using semi-structured interviews, which provided consistency with flexibility in collecting personal interpretation. Interviews were transcribed verbatim and underwent thematic analysis using Braun and Clarke's six-step process, guided by interpretation from Conceptual Metaphor Theory by highlighting the way non-visual sensory modalities shape metaphorical meaning. Institutional boards approved ethics clearance, and informed consent was obtained with assurances of anonymity, confidentiality, and the right to withdraw at any time.

6. Data Presentation and Analysis

This section presents demographic data of the visually impaired individuals who responded to the research instrument.
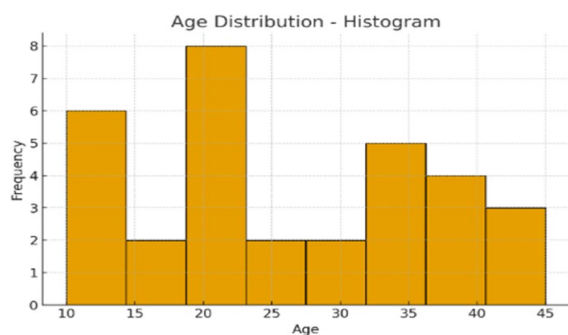

Fig. 1. Age distribution

The age range elicits the degree to which abstract language is formed throughout life stages within the visually impaired. The most populous category (25%) is 20–24 years, indicating that early adulthood is the first stage of learning, where individuals often struggle to comprehend abstract meaning under the influence of educational, social, and cognitive stress.

Age categories 35–39 (21.9%) are also significant, indicating mid-adulthood based on extensive life experience and customary language use. Youths between 10–14 years (18.8%) exhibit high intensity, pointing to the necessity of early cognitive-linguistic intervention. Lower percentages include 15–19 (6.2%), 25–29 (9.4%), 30–34 (9.4%), and 40–45 (9.4%) individuals who acknowledge abstract conceptualization as occurring across life spans. Early and middle adulthood dominate in each category, but adolescence and advanced age are crucial for constructing and developing meaning-making approaches.
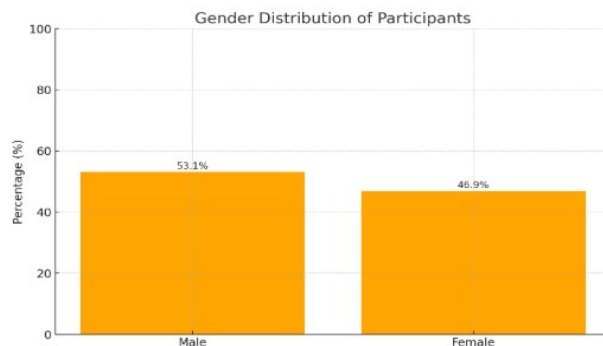

Fig. 2. Distribution of gender

The gender split indicates that men (53.1%) slightly outnumber women (46.9%), resulting in a fairly balanced distribution that helps eliminate gender bias and promotes inclusive outcomes. This fortifies the study in that it enables consideration of how both sexes think of abstract terms independently, beyond and apart from visual metaphors.

Each of the 32 participants is a Hausa-speaking informant from one geographical location and consequently provides the study with a shared cultural and linguistic context. This reduces variability due to multilingualism so that variation in response can represent participants' experience with visual impairment and cognitive strategy use accurately, and not language or culture. The results are thus of interest for explaining Hausa-speaking visually impaired individuals' cognitive-linguistic preferences and a point of departure for comparative research.
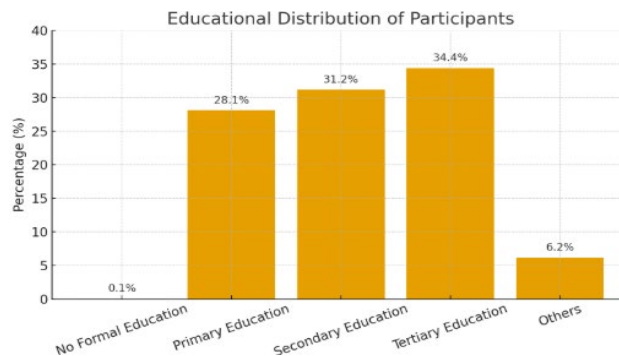

Fig. 3. Educational qualification

The educational distribution reveals that most participants have formal schooling, with tertiary education being the most common at 34.4%, followed by secondary at 31.2%, and

primary at 28.1%. Only a small percentage reported having no education (0.1%) or classified themselves as "others" (6.2%). This profile indicates a largely literate group, suggesting that participants are well prepared to engage with abstract concepts and articulate their experiences, thereby improving the depth and reliability of the study's results.
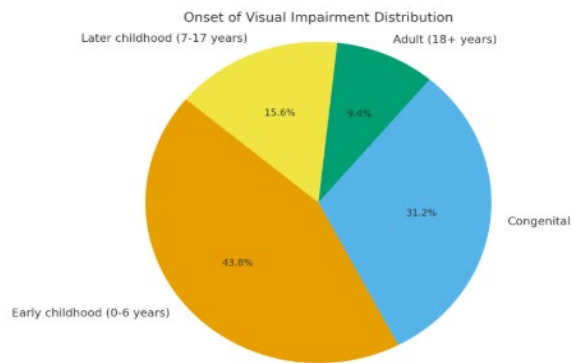

Fig. 4. Onset of visual impairment

The distribution of frequency of the age of onset of visual impairment among the sample shows early childhood as the most prevalent age of onset at 43.8% of the sample. This is important since visual impairment that is present at this initial stage of life can significantly affect cognitive, linguistic, and social development, such as the manner in which individuals process abstract language. Individuals in this category would likely have learned non-visual forms of seeing the world at a very young age, something that could shape their position on abstract thought and metaphorical expression.

Congenital cases, constituting 31.2%, constitute the second largest group. Individuals born with visual impairment would have depended almost entirely on audio, haptic, and experiential senses of sense-making since birth, which might make their conceptual systems less visually metaphor-controlled and more sensory-modal dependent.

Follow-up cases of childhood onset (15.6%) and adult onset (9.4%) are relatively smaller but are important. These subjects might have experienced some phase of visual perception before blindness, and this could affect their conceptual process differently, possibly enabling them to be able to hold on to some visual metaphorical frameworks alongside other processes.

In general, the findings indicate that the majority of the participants (75% combined) had visual impairment at birth or early in childhood, and hence the formation of their cognitive-linguistic systems was largely vision-independent. This is important to the study as it guarantees that the information reflects how abstract notions are acquired by non-visual modalities to a large extent.

The degree of vision among participants shows that a majority, 59.4%, are totally blind. This dominant group represents those who rely entirely on non-visual sensory modalities—such as hearing, touch, and kinesthetic perception—to process information and conceptualize abstract language. Their participation is especially valuable for a study focused on moving beyond visual metaphors, as their cognitive-

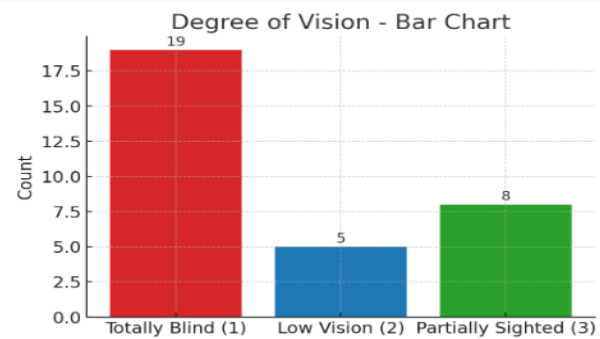linguistic strategies are shaped entirely without reliance on sight.

Fig. 5. Degree of vision

Participants who are partially sighted make up 25.0% of the sample. This group may still retain some limited visual experience, which could influence how they engage with visual metaphors compared to their totally blind counterparts. Meanwhile, those with low vision constitute the smallest group at 15.6%, reflecting a minority whose conceptualizations may combine both visual and non-visual strategies.

Overall, this distribution highlights that the study sample is largely composed of individuals with no functional vision, making the findings particularly relevant for understanding how abstract concepts are constructed and communicated without visual input. At the same time, the inclusion of partially sighted and low-vision participants adds diversity, allowing for comparative insights into how varying degrees of visual ability shape metaphorical thinking and abstract language use.
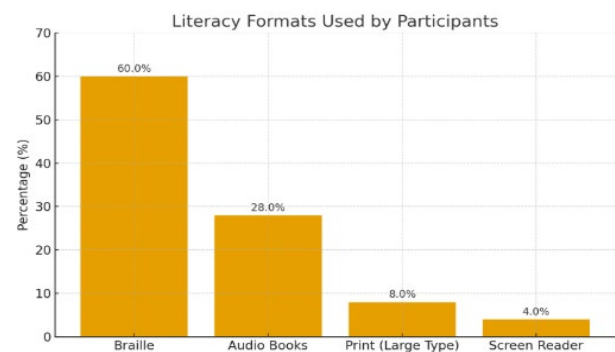

Fig. 6. Degree of vision

The data on literacy formats used by participants reveal that Braille is the dominant medium, accounting for 60.0% of the sample. This finding underscores the continued relevance and importance of Braille as the primary means of reading and writing for individuals with visual impairment. Its predominance suggests that most participants have developed strong tactile literacy skills, which likely influence their ability to process abstract language in structured, systematic ways.

Audio books constitute the second most common format at 28.0%, indicating that auditory learning also plays a significant role in participants' access to information and conceptual understanding. This aligns with the heavy reliance on auditory modalities among those who are totally blind or severely

visually impaired.

Print in large type (8.0%) and screen readers (4.0%) are the least used formats, reflecting a smaller group of participants who may have residual vision or access to assistive technology. These participants likely engage with both visual and auditory modes, potentially affecting the way they conceptualize abstract ideas differently from those who rely exclusively on tactile or auditory input.

Overall, the distribution highlights that while modern assistive technologies such as screen readers are present, traditional literacy tools like Braille remain central to the cognitive-linguistic development of most participants. This has important implications for understanding how abstract language is conceptualized, as the dominant literacy format shapes the sensory and cognitive strategies participants employ in meaning-making.
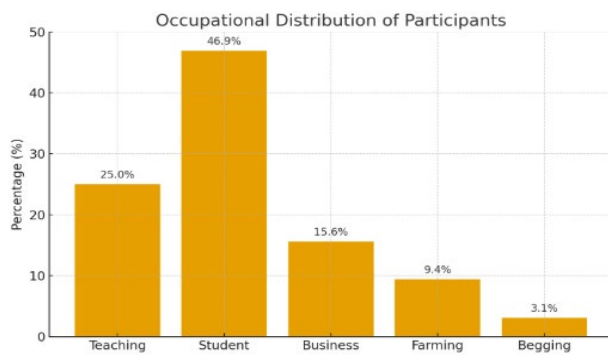

Fig. 7. Distribution of occupation

The occupational distribution shows that nearly half of the participants (46.9%) are students, indicating strong engagement with formal education and frequent exposure to academic discourse, which likely enhances their ability to process abstract language. Teachers form the second-largest group (25%), contributing reflective insights shaped by their communication and knowledge-sharing skills. Business (15.6%) and farming (9.4%) participants add practical, real-world perspectives, while the smallest group—beggars (3.1%)—highlights the socio-economic diversity of the sample. Overall, the distribution suggests that while findings are shaped largely by participants with strong educational exposure, the inclusion of varied occupational backgrounds enriches the analysis and allows for meaningful comparisons in how abstract concepts are understood.

One of the most revealing aspects of this research concerns how visually impaired individuals conceptualize highly abstract notions such as time, love, beauty, and justice. When participants were asked what came to mind upon hearing these words, the responses pointed to a distinctly non-visual grounding of abstraction. The data shows that 43.9% of respondents reported that they primarily feel such concepts, 24.4% indicated that they hear them, 14.6% associated them with touch, and 17.19% drew on other forms of representation.

This distribution highlights a profound shift from conventional assumptions in metaphor theory, which often prioritizes vision as the dominant sense through which human

beings structure abstract thought. In Lakoff and Johnson's influential formulation of conceptual metaphor theory, many common metaphors rely heavily on sight—such as "I see your point," "a bright idea," or "looking forward to the future" (Lakoff and Johnson 45). For individuals without visual experience, however, this reliance on imagery is neither natural nor useful. Instead, the data suggest that the visually impaired employ a different hierarchy of sensory modalities to make sense of abstraction.
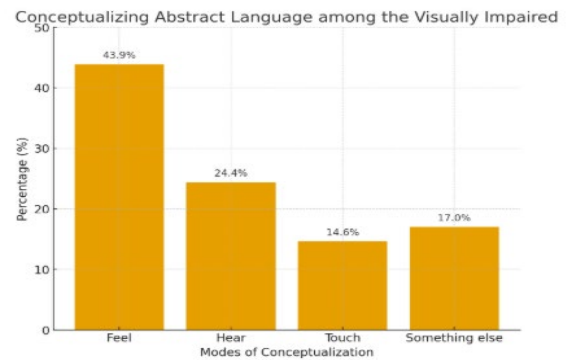

Fig. 8. Modes of conceptualization

The predominance of "feeling" as a mode of conceptualization underscores the role of embodiment and emotion in structuring thought. Concepts such as love, justice, or even time are often apprehended not as images but as bodily states—warmth, pressure, balance, or tension. This reflects the principle that cognition is grounded in sensorimotor and affective experience, a perspective advanced in research on embodied cognition (Barsalou 619). The second most common modality, "hearing," further illustrates how auditory cues function as substitutes for visual representation. Time, for instance, may be marked by the ticking of a clock or the rhythm of speech; justice may be associated with the authoritative voice of a judge; love may be recalled through music or the tone of a familiar voice. Meanwhile, the use of "touch" demonstrates the importance of haptic experience in constructing meaning, as beauty may be equated with smoothness or justice with equilibrium (Johnson 19).

The "something else" category, representing 17.19% of responses, is also significant because it points to the flexibility and plurality of conceptualization. For some individuals, abstract concepts are understood through narrative, relationships, or even spiritual reference points that cannot be neatly classified under any one sense. This reinforces the idea that abstract thinking among the visually impaired is not only sensory but also contextual, adaptive, and deeply personal.

Taken together, these findings confirm that metaphorical and abstract thinking extend beyond visual metaphors. They demonstrate that when vision is absent, the mind readily restructures abstract domains around alternative modalities—primarily feeling, hearing, and touch—while also drawing upon broader experiential and relational frameworks. This insight is central to understanding the linguistic and cognitive strategies of the visually impaired: abstraction is not diminished by the absence of vision, but rather reconfigured in embodied,

multisensory ways.

Ultimately, the data challenges researchers and educators to reconsider the universality of vision-based metaphor and to recognize the diverse pathways through which abstract meaning is constructed. In doing so, it contributes to a richer understanding of language and cognition, one that is inclusive of the perceptual worlds of those who navigate life without sight.
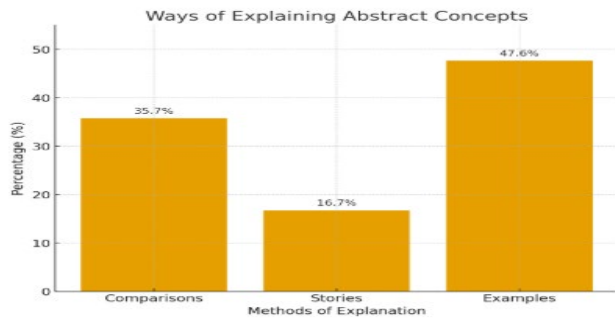

Fig. 9. Method explaining abstract concepts to visually impaired individuals

When asked how they usually explain abstract concepts, for instance, time, love, beauty, or justice to friends, classmates, or children, respondents provided three main strategies: using comparisons (35.7%), using stories (16.7%), and using examples (47.6%). The distribution of these responses sheds light on how individuals make abstract ideas more accessible in everyday communication.

The majority of respondents (47.6%) reported that they rely on examples when explaining abstract concepts. This indicates a preference for grounding abstract ideas in concrete, familiar experiences. For instance, time may be explained by referring to the rising and setting of the sun, love by the care shown within family relationships, or justice by the fairness demonstrated in everyday disputes. By drawing on real-life instances, examples bridge the gap between intangible ideas and tangible experiences. This finding aligns with cognitive theories of learning, which emphasize the role of concreteness in facilitating understanding, especially for audiences such as children or peers who may struggle with abstraction.

The second most common strategy (35.7%) was the use of comparisons. Comparisons allow individuals to clarify abstract concepts by linking them to something more familiar. For example, beauty might be compared to harmony in music, or justice to the balance of a scale. Unlike examples, which directly illustrate a concept, comparisons highlight similarity and analogy, making them useful for highlighting shared qualities between abstract and concrete domains. This reflects the role of metaphor in communication, where understanding is achieved through mapping one domain of experience onto another.

A smaller proportion of respondents (16.7%) reported using stories to explain abstract concepts. Storytelling offers a narrative framework that situates abstractions within human experience. For example, the concept of justice might be explained through a story about a fair judgment, or love through a story of sacrifice. While less frequently chosen, stories carry the advantage of engaging imagination and emotion, suggesting that although they are not the primary method of explanation, they remain a powerful tool for conveying abstract meaning.

Taken together, these findings suggest that individuals prioritize concreteness and familiarity (through examples and comparisons) when explaining abstract concepts, while stories serve as a complementary but less dominant strategy. This distribution highlights the practical ways in which abstraction is translated into everyday understanding, emphasizing accessibility and relatability over complexity.
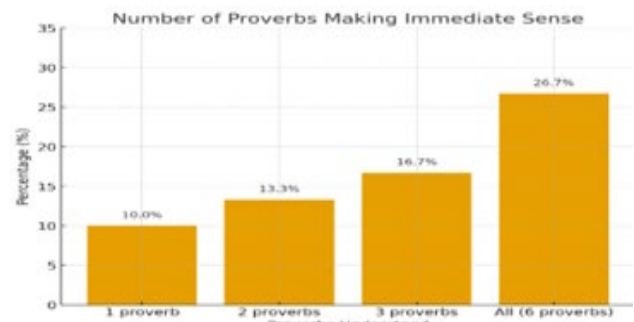

Fig. 10. Test on proverbs

Respondents were asked which proverbs or metaphorical expressions made immediate sense to them. The options included five English metaphors—"As beautiful as a rose," "Time is money," "I see your point," "A bright idea," and "Grasp the concept"—as well as one Hausa proverb, "*Ko wa ya sayi rariya, ya san cewa zata zubar da ruwa*" (whoever buys a sieve knows it will pour water). The responses were coded from 0 (none) to 6, representing the number of proverbs that made immediate sense to each participant.

The data from this question provides an important measure of conceptual accessibility across both cultural and sensory domains. The fact that respondents did not uniformly select all six proverbs, but instead varied in how many made immediate sense, suggests that familiarity, cultural grounding, and sensory relevance strongly influence comprehension.

One of the clearest factors shaping comprehension is cultural relevance. The Hausa proverb is grounded in everyday experience and conveys inevitability through the simple and familiar image of water passing through a sieve. For respondents embedded in this cultural context, such imagery is easily accessible and immediately meaningful. By contrast, English expressions such as "as beautiful as a rose" assume cultural familiarity with roses as symbols of beauty, which may not hold the same resonance for all respondents, particularly for those with visual impairments who cannot directly access visual symbols.

Another important factor is sensory accessibility. Certain metaphors, including "I see your point" and "A bright idea," are heavily reliant on vision. For visually impaired respondents, these metaphors are less accessible and may require reinterpretation through non-visual sensory modalities. In contrast, expressions like "time is money" or "grasp the concept" are less dependent on sight and instead draw on

economic or tactile experiences, making them easier to understand immediately.

The variation in comprehension levels also deserves attention. The spread of responses across the range from zero to six demonstrates that there is no uniform way of interpreting proverbs. Some participants did not find any of the expressions meaningful, while others grasped all six. This variation highlights how abstract language comprehension is shaped not only by sensory experience but also by individual exposure to cultural symbols and linguistic familiarity.

Overall, the findings reinforce the central argument of this study: abstract concepts are not universally grounded in visual metaphors. Instead, comprehension depends on the degree to which metaphors align with accessible sensory modalities and cultural contexts. For the visually impaired, non-visual metaphors—such as those rooted in tactile or experiential domains—tend to be more meaningful than vision-based ones. Furthermore, the inclusion of a Hausa proverb demonstrates how indigenous knowledge systems and culturally specific imagery provide alternative, yet equally powerful, pathways for abstract conceptualization beyond the dominant Western reliance on vision.
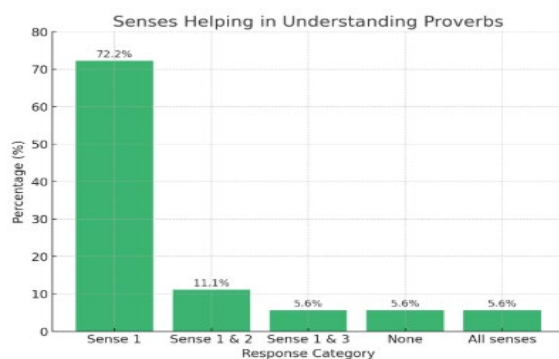
channel. For example, a proverb might be simultaneously felt emotionally and heard through its rhythm or oral delivery, or it may combine tactile and affective associations. Such responses highlight the flexibility of sensory grounding in understanding abstract and figurative expressions.

At the margins, 5.6% of respondents reported that no sense (0) helped them, suggesting difficulty in accessing metaphorical meaning altogether. Another 5.6% selected all senses (7), which may represent a holistic engagement with language that is not tied to one particular modality but instead draws upon multiple embodied resources.

Taken together, the data emphasize that comprehension of proverbs among the visually impaired is not rooted in visual imagery but in embodied, affective, and sometimes multimodal experiences. The dominance of hearing shows that feeling and bodily intuition are the most reliable tools for understanding figurative language, while the smaller patterns of multimodal engagement demonstrate the adaptability of individuals in grounding abstract meaning across different sensory pathways. This reinforces the broader argument of the study: abstract thought and metaphorical language are accessible beyond vision, through the flexible and embodied use of other senses.
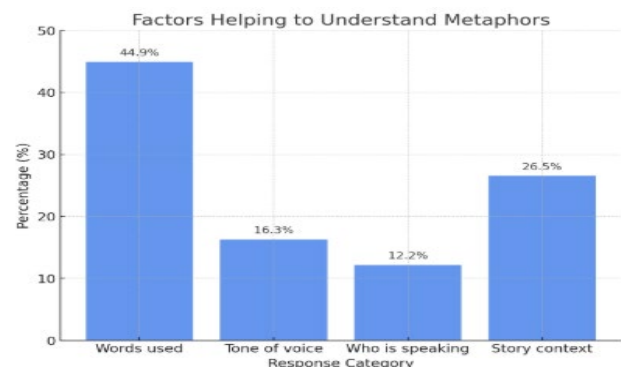

Fig. 11. Dominant Senses for understanding abstract concepts/proverbs

Fig. 12. Factors helping understanding metaphors

Respondents were asked which senses help them most when trying to understand a saying or a proverb. The responses revealed a strong preference for one particular sense, with smaller proportions identifying combinations or alternative approaches. The distribution was as follows: hearing (72.2%), hearing & touch (11.1%), hearing & smelling (5.6%), none of the senses (5.6%), and all senses (5.6%).

The overwhelming reliance on hearing (72.2%) indicates that most participants depend primarily on a single sensory channel when interpreting proverbs. Given earlier findings, hearing is most likely connected to feeling or embodied experience, which aligns with the tendency of visually impaired individuals to conceptualize abstract language through emotion, bodily sensation, or intuition rather than through vision. This confirms that embodied cognition provides a dominant pathway for making sense of figurative language.

A smaller group of respondents (11.1%) indicated that they relied on combining the senses of hearing and touch, while 5.6% selected the senses of hearing and smelling. These choices suggest that for some individuals, proverb comprehension is multimodal, involving the integration of more than one sensory

Respondents were asked what helps them most when someone uses a metaphor in a sentence. Their responses showed a distribution across four main factors: the words used in the talk (44.9%), the story context (26.5%), the tone of voice (16.3%), and who is speaking (12.2%). These results shed light on the strategies individuals, particularly the visually impaired, rely upon to make sense of figurative language.

The largest proportion of respondents (44.9%) indicated that they depend primarily on the words used in the talk. This demonstrates that careful attention to vocabulary, phrasing, and linguistic cues is the most important factor in understanding metaphorical expressions. For the visually impaired, the richness and clarity of language itself provide the strongest pathway for grasping abstract meaning, as it is less dependent on external cues such as visual context.

The second most common response (26.5%) was the story context. This suggests that metaphors are often interpreted by situating them within a broader narrative framework. When proverbs or figurative phrases are embedded in stories, they become more relatable and easier to decode. Context supplies the scaffolding needed to make sense of otherwise abstract or

unfamiliar expressions, underscoring the importance of the discourse environment in communication.

A smaller proportion (16.3%) identified tone of voice as the key factor. Tone conveys emotional emphasis, irony, seriousness, or humor, all of which help clarify metaphorical intent. For the visually impaired, auditory cues such as intonation and stress can substitute for visual gestures or facial expressions, making tone an important—though secondary—means of interpretation.

Finally, who is speaking was chosen by 12.2% of respondents. This highlights the role of speaker identity and credibility in shaping metaphor comprehension. Familiarity with the speaker, their social role, or their communicative style can provide clues to the intended meaning of metaphors. While this was the least selected category, it still points to the social and relational dimensions of understanding figurative language.

Taken together, the findings suggest that comprehension of metaphors is primarily linguistic and contextual, with words and narrative context playing the dominant roles. Tone of voice and speaker identity contribute additional layers of meaning but are less central. For visually impaired respondents, this distribution reinforces the importance of linguistic richness and contextual embedding over visual or purely symbolic cues, further supporting the argument that abstract thought and figurative language are accessible through non-visual modalities.
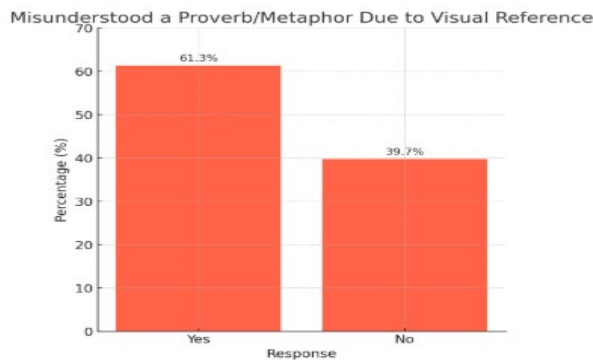

Fig. 13.　Misunderstood proverbs due to a lack of visual reference

Respondents were asked whether they had ever misunderstood a proverb or metaphor because of its reliance on a visual reference. The responses revealed that 61.3% answered "Yes", while 39.7% responded "No."

The majority response (61.3%) indicates that for many visually impaired individuals, metaphors grounded in visual imagery present significant barriers to comprehension. Expressions such as "I see your point" or "as bright as the sun" assume shared visual experiences that may not be accessible to those without sight. This confirms that visual metaphors, while common in everyday language, can alienate or confuse listeners who rely on other sensory modalities for meaning-making.

At the same time, a substantial minority (39.7%) reported that they had not misunderstood metaphors because of visual references. This finding suggests several possibilities. First, it may reflect the ability of some respondents to translate visual metaphors into other sensory frameworks, such as touch, sound,

or emotion. Second, it could indicate exposure and familiarity: individuals who frequently encounter visual metaphors in education, media, or social interaction may gradually learn their meanings, even without direct visual experience.

The combined responses highlight a critical theme in this study: visual metaphors are not universally accessible. For the majority, they create barriers to understanding, while for others, strategies of adaptation, learning, or contextual interpretation mitigate these difficulties. These findings reinforce the need to rethink the dominance of visual imagery in metaphorical language, particularly in inclusive communication and education for the visually impaired.
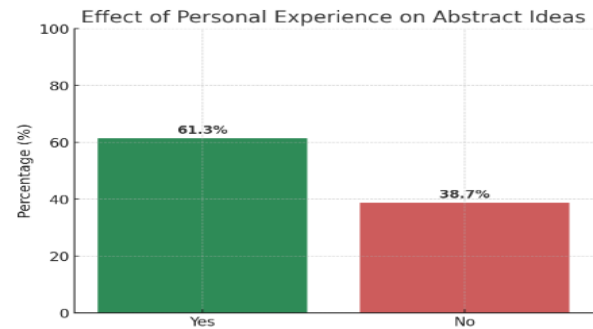

Fig. 14.　Effects of personal experience on abstract ideas

The question of whether personal experiences shape how visually impaired individuals think about abstract concepts offers important insights into the grounding of metaphorical and abstract thought. The data reveal that 63.2% of participants affirmed that their experiences—whether from work, family, school, or life events—influence their understanding of abstraction, while 38.7% reported that such experiences do not play a significant role.

This finding highlights the centrality of embodied and experiential grounding in the conceptual lives of many visually impaired individuals. For the majority, abstract ideas such as time, love, justice, or beauty are not merely processed as detached words, but are lived through social and personal encounters. For example, school routines may shape the understanding of time, family dynamics may inform the sense of love, and workplace interactions may frame notions of justice or fairness. This interpretation is consistent with theories of embodied cognition, which argue that abstract concepts emerge from repeated bodily and situational experiences rather than from disembodied mental imagery (Barsalou 619). In the absence of a visual metaphor, lived experiences thus become a primary cognitive anchor.

At the same time, 38.7% of respondents who answered "no" indicate that not all abstract thinking is consciously tied to personal experience. For these individuals, abstraction may be processed through other channels, such as linguistic familiarity, cultural narratives, or metaphorical conventions acquired through education and social communication. This points to the flexibility of conceptualization among the visually impaired, suggesting that while many rely on direct experience, others construct abstract meaning through more symbolic or discursive means.

Fig. 15. Distribution of strategies for conceptualizing abstract language

The pie chart titled "Distribution of Strategies for Conceptualizing Abstract Language" provides a detailed overview of the pedagogical strategies employed to help students who are blind or visually impaired understand abstract concepts. The data reveal an even distribution, with each strategy accounting for between 6% and 7.2% of the total. This suggests that no single approach is sufficient on its own; rather, educators and researchers advocate for a diverse set of pedagogical tools. This perspective aligns with Lakoff and Johnson's Conceptual Metaphor Theory (CMT), which posits that abstract cognition emerges from embodied, often multimodal experiences (Lakoff and Johnson 3–6).

The most prominent strategies, comprising 7.2% of the distribution, include peer support and mentoring, pre-teaching of figurative language, using real-life experiences as examples, preparing teachers with inclusive metaphors, arranging discussion opportunities in advance, and providing explanations based on cultural context. Collectively, these strategies highlight the importance of pedagogy in social interactions, contextual grounding, and professional development in inclusive education. Vygotsky's sociocultural theory is particularly relevant here, as it emphasizes the significance of scaffolding and social mediation in developing understanding, especially for students who must grasp abstract meanings through non-visual channels (Vygotsky 86–89).

Other techniques, such as sensory equivalent translation, plain language descriptions, and audio descriptions (each 6.7%), align with the Universal Design for Learning (UDL) principles, which advocate for multiple means of representation to accommodate diverse learners (Meyer, Rose, and Gordon 29–32). Similarly, tactile learning aids (6.5%) and the availability of Braille or audio glossaries (7.2%) reflect inclusive education models that prioritize accessibility and multimodality. In contrast, strategies such as multi-sensory techniques (4.6%) and accessible materials (5.3%) are used less frequently, indicating underutilization despite their potential to enhance participation and understanding.

Overall, the distribution of these strategies demonstrates a pedagogical approach that emphasizes inclusivity and flexibility. The fairly balanced allocation across various methods shows an understanding that abstract concepts cannot be effectively taught using only one approach. Instead, successful teaching in this area depends on a combination of social, sensory, contextual, and linguistic adaptations. This finding has wider implications for inclusive education, stressing the importance of teacher training and intentionally diversifying teaching methods. By integrating ideas from CMT, sociocultural theory, and UDL, instruction can be improved to better support visually impaired students' access to abstract meaning-making processes.

7. Findings Summary

This study explored how visually impaired Nigerians understand abstract language, focusing on sensory, cultural, and experiential strategies. Results show that most participants depend on non-visual sensory methods—especially feeling (43.9%) and hearing (24.4%)—to interpret and communicate abstract concepts. Proverb understanding was significantly impacted when figurative expressions relied on visual imagery, with 61.3% of respondents reporting misunderstandings in such cases. Effective explanation methods included using examples (47.6%), comparisons (35.7%), and lived experiences. Additionally, personal experience played a vital role, with 61.3% recognizing its influence on their grasp of abstract ideas.

Braille literacy (60%), together with audiobooks (28%), emerged as central resources, reinforcing the reliance on auditory and tactile literacy formats. The findings highlight that comprehension of abstract language among the visually impaired is embodied, experiential, and multi-sensory, rather than exclusively visual.

A. Implications

The research has significant implications for education, culture, and policy. Educationally, it is recommended that inclusive pedagogy must not remain in the scope of visual metaphor as a pedagogical method practiced in classrooms. Teachers must embrace multi-sensory approaches like the use of tactile aids, audio descriptions, and culturally relevant illustrations in order to allow visually impaired students to access abstract ideas meaningfully. Such strategies enhance accessibility as well as the learning conditions for various types of students.

Culturally, the study emphasizes the importance of proverbs and idioms as focal points of discourse. However, when such proverbs rely heavily upon visual imagery, they are inaccessible to the blind. This requires translating proverbs into other sensory equivalents—based on sound, touch, or alternative modalities—that are accessible in nature but maintain cultural relevance. By paraphrasing traditional forms of expression, societies can promote cultural continuity while guaranteeing greater accessibility.

At the policy level, the research identifies it as crucial to have inclusive teacher training. Teachers need to be provided with effective strategies for imparting abstract concepts in an understandable manner so that visually impaired children can grasp them. Moreover, policies to promote the production and distribution of Braille glossaries, audio collections, and tactile learning materials would deconstruct structural barriers to education and communication. These attempts are most critical in ensuring equity and enabling blind individuals to participate equally in educational and cultural activities.

Acknowledgment

References

[1] Adegbite, Wale. "Metaphor as a Cognitive Tool in Nigerian English Usage." *Journal of the Linguistic Association of Nigeria*, vol. 13, no. 1, 2010, pp. 23–38.

[2] Adegbite, Wale. Proverbs as Expressions of Cultural Values in Yoruba and Igbo Societies. Ibadan University Press, 2017.

[3] Adetoro, N. "Information Needs and Information Sources of the Blind and Visually Impaired in Nigeria." *African Research and Documentation*, vol. 111, 2010, pp. 63–78. Cambridge University Press,

[4] Adetoro, N. "Information Needs and Information Sources of the Blind and Visually Impaired in Nigeria." *African Research and Documentation*, vol. 111, 2010, pp. 63–78.

[5] Akinyemi, Akintunde. Oral Traditions in Yorùbá Proverbs: A Cognitive-Semantic Study. Lexington Books, 2015.

[6] Barsalou, Lawrence W. "Grounded Cognition." *Annual Review of Psychology*, vol. 59, 2008, pp. 617–645.

[7] Bedny, Marina, et al. "Conceptual Development in the Absence of Vision." *Trends in Cognitive Sciences*, vol. 13, no. 3, 2009, pp. 1155–1162.

[8] Canessa, Enrique, et al. "Language Processing Differences between Blind and Sighted Individuals and the Abstract versus Concrete Concept Difference." *Cognitive Science*, vol. 45, no. 5, 2021.

[9] Cattaneo, Zaira, and Tomaso Vecchi. "Blind Vision: The Neuroscience of Visual Impairment." *Nature Reviews Neuroscience*, vol. 12, no. 11, 2011, pp. 976–986.

[10] Cotterill, Richard. *Using Visual Metaphors to Enhance the Learning Experience of International Postgraduate Management Students at a University in England: A Pedagogical Action Research Study*. PhD thesis, University of Huddersfield, 27 February 2024, Pure – University of Huddersfield repository.

https://pure.hud.ac.uk/files/83726276/Final_thesis_Cotterill.pdf

[11] Finnegan, Ruth. *Oral Literature in Africa.* Open Book Publishers, 2012.

[12] Gibbs, Raymond W. *Embodiment and Cognitive Science.* Cambridge University Press, 2006.

[13] Gibbs, Raymond W. *The Poetics of Mind: Figurative Thought, Language, and Understanding.* Cambridge University Press, 1994.

[14] Kövecses, Zoltán. *Where Metaphors Come From: Reconsidering Context in Metaphor.* Oxford University Press, 2015.

[15] Kyari, Fatima, V. S. Murthy Gudlavalleti, Selvaraj Sivsubramaniam, Clare E. Gilbert, Mohammed M. Abdull, Gabriel Entekume, and Allen Foster. "Prevalence of Blindness and Visual Impairment in Nigeria: The National Blindness and Visual Impairment Study." *Investigative Ophthalmology & Visual Science*, vol. 50, no. 5, May 2009, pp. 2033–2039.

[16] Lacey, Simon, et al. "Multisensory Object Representation in the Blind." *Psychological Science*, vol. 20, no. 3, 2009, pp. 311–318.

[17] Lakoff, George, and Mark Johnson. *Metaphors We Live By*. University of Chicago Press, 1980.

[18] Lakoff, George, and Mark Johnson. *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. Basic Books, 1999.

[19] Landau, Barbara. "*Language and Space: Some Questions about Relations between Mind and Linguistic Structure.*" Language Acquisition and Conceptual Development, edited by Melissa Bowerman and Stephen C. Levinson, Cambridge University Press, 2001, pp. 273–311.

[20] Manjang, A. J., R. J. Umaru, and H. E. Egan. "Effects of Visual Metaphor on Pupils' Achievement in Social Studies in Bassa, Plateau State, Nigeria." *International Journal of Social Sciences and Management Research*, vol. 10, no. 3, 2024, pp. 243-249.

[21] Merleau-Ponty, Maurice. *Phenomenology of Perception*. Translated by Colin Smith, Routledge & Kegan Paul, 1962.

[22] Muhammed, Musa. "A Cognitive-Semantic Analysis of Hausa Perception Verbs." *Linguistics Forum*, vol. 2, no. 2, 2022, pp. 1–12.

[23] Okoye, Uchechukwu. "Inclusive Education in Nigeria: Policy and Practice." *Journal of International Special Needs Education*, vol. 23, no. 1, 2020, pp. 1–18.