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Amrinder Singh Romana

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Amrinder Singh Romana*

*The Leeds School of Arts, Leeds Beckett University
Leeds, England, United Kingdom*

SOUND DRAWING AND DHOL NOTATION: A METHODOLOGICAL APPROACH TO VISUALISING DRUM SOUNDS

Abstract: The research introduces ‘Sound Drawing’ as an engaging instructional activity to develop a visual dhol notation system. In contrast to the conventional reliance on spoken language for dhol instruction, this research involves developing a visual notation system that effectively bridges the auditory intricacies of the dhol drum with corresponding visual representations. Through a methodical examination of sound drawings collaboratively generated by participants, this study critically assesses the effectiveness of sound drawing as an active and inclusive pedagogical instrument within the domain of dhol learning. The outcomes demonstrate how participants’ visual interpretations of dhol sounds led to creating a notation system. This system reflects a diverse range of auditory perceptions and offers a new avenue for cultural engagement and learning in music education. By introducing sound drawing as an immersive instructional activity, this research aspires to advance dhol pedagogy, rendering it more accessible to diverse cultures and communities, thus transcending linguistic barriers. This study pioneers the incorporation of sound drawing as an innovative pedagogical activity for the collective development of a visual dhol notation system, thereby instigating a transformation in pedagogical paradigms and fostering cross-cultural engagement within the rich musical tradition of the dhol.

* Author’s contact information: a.s.romana@Leedsbeckett.ac.uk.

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Glossary of Terms

Dhol: A double-headed South Asian drum often used in regional music genres and cultural celebrations. The dhol is known for its distinct, high-energy rhythmic sounds, produced by striking both sides of the drum with sticks or hands.

Sound Drawing: A method used in this study where participants create visual illustrations based on their auditory experience of dhol sounds. It is distinct from conventional notation as it allows for personal, interpretative visualisations of sound rather than standardised symbols.

Notation: A system of symbols representing musical sounds. In the context of this study, it refers to the conventional and newly developed symbols used to represent dhol sounds on a visual medium.

Visual Representation: The use of images, symbols, or diagrams to communicate ideas, concepts, or sounds. This term encompasses both traditional musical notation and the more abstract representations created through the sound drawing activity.

Graphic Notation: A form of musical notation that uses visual symbols outside the field of traditional music notation to represent music and its performance, which can include abstract symbols and illustrations to convey musical concepts.

Introduction

As a practitioner deeply embedded in the dhol tradition, I bring a unique perspective to this research. The dhol, a traditional double-headed drum that holds deep cultural significance, embodies the rich history of South Asia's musical heritage spanning centuries passed down through generations via oral tradition (Schreffler 2021). The essence of dhol lies in its oral transmission method, a teaching approach that imparts musical and cultural understanding through direct auditory interaction. This technique, deeply rooted in communities and cultures, serves as a conduit for traditions and group identities (Shehan 1987). However, this conventional approach faces challenges in our globalised world of cultural fusion and diverse relationships.

In today's interconnected world, where geographical boundaries blur, people engage in cross-cultural interactions beyond their immediate surroundings.

While the oral tradition still embraces cultural diversity, it struggles to bridge the gap between various auditory experiences and cultural expressions (Cain, Lindblom and Walden 2013). Understanding the nuances of the dhol's sounds and rhythms can be difficult for individuals from diverse backgrounds, as they lack the immersive cultural experience connected to traditional learning.

As a result, the necessity for creative methods in dhol instruction that combine auditory perception and visual representation becomes significant. Patricia Shehan Campbell's insights from 2016, advocating for visual components in music teaching, align with this goal (Campbell 2016). The concept of 'Sound Drawing', while taking inspiration from Salgado-Montejo et al. (2016) who examined the spatial representation of sound and its influence on action and gestures, is reimaged in this research to develop a visual notation system for the dhol. This study diverges from their approach by focusing on the visual documentation of auditory perceptions of dhol sounds. It aligns with Charles Spence's research into audiovisual crossmodal correspondence (Spence 2011), which examines the interplay between auditory and visual experiences. Further, it echoes the sentiments of Leppert in *The Sight of Sound* (Leppert 1995), who delves into the visual aspects of musical expression, thereby reinforcing the significance of a multimodal approach in the learning and teaching of music. This repurposing of sound drawing is an innovative method to enhance the pedagogical framework of dhol instruction, integrating auditory and visual components to enrich the musical experience.

This research advances the use of sound drawing not merely as an artistic expression but as a systematic tool for developing an alternative notation system for the dhol. The study aims to enrich the dhol's pedagogical framework by integrating auditory and visual components, facilitating a more comprehensive and dynamic learning experience that converges sensory modalities to enhance musical comprehension.

Literature Review

The Dhol

The dhol (Figure 1) is a traditional drum widely used in South Asia, particularly in India, Pakistan, Bangladesh, and Nepal. It holds significant cultural and historical importance and is a prominent instrument in the region's folk, classical, and popular music genres (Schreffler 2021). The dhol typically consists of a large wooden barrel-shaped shell with two drumheads, one on each side, bass, and treble. The two heads are traditionally made of animal skin, goat, or buffalo, and are tensioned using ropes or straps. Modern versions use synthetic

heads on the treble or both sides of the drum. The dhol is played using sticks or hands, depending on the style of music and the desired sound, ranging in size, shape, and design. The playing styles vary from region to region and are integral in celebrations, processions, festivals, weddings, and cultural events, producing a robust rhythmic sound.



Figure 1. The dhol drum – A visual representation of the dhol.

Limitations of Traditional Dhol Practice Techniques

The exchange of dhol playing practice via centuries-old oral traditions has benefited the preservation of cultural heritage and the connection to dhol's historical origins (Shehan 1987). The skill of playing the dhol thrives thanks to this oral heritage, with each generation passing on customs and nurturing a solid feeling of cultural identity. However, issues with the effectiveness of this methodology occur when our society evolves because of globalisation and cultural mixing. Geographical lines that traditionally divided cultural spheres have become transparent, leading to interactions between people from diverse cultures. In this situation, the limits of oral transmission are clear.

A significant limitation of traditional dhol teaching and learning practices is the risk of disconnection from the instrument's cultural context. As cultural boundaries become more fluid, learners may find it particularly challenging to replicate the intricate sounds passed down through oral tradition. Traditional learning relied on immersive experiences, where individuals deeply integrated into their community's musical and cultural fabric. However, these experiences

may face disruption when learners from diverse backgrounds do not share the same cultural roots. This contextual gap may hinder a complete understanding of the intricacies and nuances of dhol playing, potentially diminishing the authenticity of the practice.

The challenges presented by globalisation underscore the need for innovative methods that bridge auditory experiences with meaningful expressions in diverse cultural contexts. To fully understand and connect with the instrument's nuances, learners require an approach accommodating their diverse experiences. Those drawn to the captivating sounds of the dhol should have access to its rhythms, strokes, and emotional resonances, irrespective of their familiarity with the cultural backdrop. The intricacies of dhol playing are deeply intertwined with the tonal qualities of the cultural language from which it originates. The challenge for learners, particularly in a global context, is twofold: they must grasp the tonal sounds of the dhol that are reflective of its cultural language and, at the same time, understand the cultural significance embedded within its rhythms. Mastery of the instrument is not merely about reproducing sounds; it requires an appreciation and comprehension of the cultural nuances that give meaning to those sounds. This cultural specificity presents a learning curve for those not immersed in the language and traditions of the dhol's origin. Sound drawing provides a universally relatable medium, bypassing cultural barriers by introducing a visual element to conventional dhol practice. Learners can find a tangible and understandable entry point into dhol rhythms regardless of cultural background. This aligns with the evolving landscape of education, respecting tradition while embracing the possibilities presented by modern technology and cross-cultural exchanges (OECD 2016).

Challenges in Dhol Practice

The book 'Read and Play the Dhol Drum MODULE 1: Basic Sounds & Traditional Punjabi Rhythms' (Bhamra 2019) exemplifies the limitations as mentioned, by focusing on Western music scores, potentially alienating learners from diverse cultural backgrounds who lack familiarity with written music. This disconnection poses challenges in accurately conveying the intricate nuances of the dhol's playing techniques and traditional rhythms. Given the dhol's deep cultural roots in South Asia, relying solely on Western notation may oversimplify the instrument's authentic sounds and dilute its cultural and personal significance for learners.

As a dhol practitioner with 25 years of professional experience, several challenges associated with the tradition of oral transmission for teaching and learning dhol in a globalised music community are identified:

1. **Cultural Specificity:** The dhol's playing techniques, nuances, and rhythms are embedded in the cultural context of the region where it is traditionally played. When teaching solely orally, it may be challenging to effectively convey these cultural specificities to learners from diverse backgrounds, resulting in a lack of understanding and appreciation for the cultural nuances integral to the instrument.
2. **Lack of Written Documentation:** Traditional oral transmission lacks written documentation, making preserving and transmitting knowledge accurately over time challenging. Without written records, essential details about playing techniques, variations, and historical information may be absent or altered as the information is passed down from one generation to another.
3. **Globalisation and Cultural Exchange:** In today's world, cultural boundaries are becoming less defined (Hassi and Storti 2012). Traditional oral transmission may struggle to effectively bridge these cultural gaps, leading to misunderstandings and misinterpretations of dhol playing techniques.
4. **Limited Accessibility:** Oral transmission often relies on direct interaction between the teacher and the learner, limiting the accessibility of dhol teachings to those with direct access to knowledgeable practitioners. As a result, individuals outside of specific cultural communities may find it challenging to access and learn from traditional oral teaching methods.
5. **Lack of Visual Representation:** Traditional oral transmission does not provide a visual representation of playing techniques, which can hinder learners' understanding, especially those who benefit from visual learning. Visual cues, such as stick placements, are essential for mastering the physical aspects of playing the dhol.

Given these issues, there is a need to supplement traditional oral transmission with innovative methods that address the challenges posed by our changing world. The study aims to develop a novel visual notation system that stems from the principles of sound drawing practice. This visual system represents the intricate rhythmic patterns, nuanced strokes, and expressive variations inherent in dhol playing. The objective is to design notation transcending linguistic barriers and allowing participants to engage with and interpret dhol sounds visually.

Auditory Perception and Visual Representation: Soundscape Studies

The theoretical framework of soundscape studies, pioneered by R. Murray Schafer (Schafer 1993), provides a perspective through which we may examine and understand our auditory perception. Schafer's conceptual exploration of the acoustic environment provides a perspective beyond simple auditory perception, delving into the intricate relationship between sound and environment. Schafer's theoretical frameworks emphasise the concept of 'schizophonia', which highlights the disconnection between recorded sounds and their original acoustic contexts. This concept highlights the importance of considering the broader contextual surroundings when perceiving sounds.

Moving beyond the acoustic ecology conceptualised by R. Murray Schafer, this study embraces the principles of aural sonology, as advanced by Lasse Thoresen (Thoresen 2007). Thoresen's approach to the visual representation of sound through spectromorphological analysis offers a compelling framework for understanding how sounds can be represented visually, aligning closely with the aims of sound drawing. This method is particularly relevant to exploring dhol sounds, visually capturing their complex rhythms and nuanced expressions. By integrating Thoresen's theories, sound drawing in this research becomes a tool for visually mapping the dhol's sonic landscape, facilitating a deeper pedagogical approach that bridges auditory perception and visual representation.

Sound Drawing

The concept of 'sound drawing', pivotal to this study, entails a form of visual representation of the auditory experiences of the dhol, differing from traditional Western notation, which often lacks the means to encapsulate the dhol's rich timbral qualities. This research redefines sound drawing as a foundational practice for developing a dhol-specific visual notation system that accurately captures the instrument's intricate tonal subtleties and represents an innovative step in musical pedagogy, transforming how the dhol's complex sounds are conveyed and understood beyond traditional oral transmission.

Sound drawing is a creative practice that combines visual with audio elements. It involves creating visual representations or marks inspired by or responsive to sound, music, or other auditory stimuli. Sound drawing and graphic notation (Barrett 2004) share a common thread in their objective to visually represent music beyond the constraints of traditional music notation. While both approaches involve creating visual symbols or markings to convey musical elements, they apply in marginally different contexts. Sound drawing aims to

capture the intricate auditory nuances of sound, such as the patterns and tonal variations. In contrast, graphic notation encompasses a broader spectrum of visual representations in music, often used in experimental and contemporary compositions to depict various aspects of musical expression, including dynamics, tempo, and timbral changes. Therefore, while graphic notation focuses more on the overall music, emphasising broader musical concepts, structures, and interpretations rather than capturing specific sounds with detail, sound drawing is a specialised practice focusing on a given sound's sonic details.

From a practical perspective, sound drawing is a creative and engaging activity that allows individuals to represent sounds visually and serves as a bridge between auditory perception and visual expression. The process of sound drawing involves active listening and critical thinking. In a sound drawing activity, participants listen to a sound and translate it into visual markings. These markings could include lines, shapes, symbols, and patterns to creatively depict the dynamic and intricate aspects of the sound they are experiencing.

Sound drawing practice aims to optimise the interaction of auditory and visual aspects by presenting an alternative to traditional oral transmission, creatively capturing dhol sounds' intricate sounds and dynamic fluctuations. Sound drawing aims to enhance cross-cultural resonance and comprehension, drawing inspiration from Patricia Shehan Campbell's work (2016), and emphasising visual elements in music instruction. This approach fosters awareness and understanding while establishing a common language transcending the auditory space, offering a co-created representation of dhol sounds.

As employed in this study, visual notation transcends the boundaries of traditional notation by incorporating a more comprehensive array of symbols to capture the nuances of dhol sounds, including their sonic variations. This approach is akin to the principles of graphic notation, as seen in the works of Cornelius Cardew (Cardew 1967) and the aural sonology of Thoresen (Thoresen 2007), where the goal is to articulate subtleties in music that standard notation may overlook. Such techniques enrich the transcription process, allowing for a more vivid and descriptive representation of the dhol's soundscape. In this context, sound drawing becomes a transformative method, opening new avenues for creative expression and deeper engagement with the instrument's auditory identity. It invites a more personal interaction with music, as reflected in the communal and cultural significance of the dhol.

Methods

Participants and Sampling

The sound drawing activity took place over two two-hour workshops as a part of the Bradford Dhol Project (Figure 2), an initiative that aims to promote cultural diversity, community engagement, and education through the medium of the dhol drum. Twenty-one participants, consisting of four males and 17 females, were recruited from two prominent charity organisations in Bradford, UK: the Touchstone Charity and Stand and Be Counted (SBC) Theatre. The organisations are dedicated to fostering community engagement and social cohesion, aligning with The Bradford Dhol Project's objectives, which served as this study's platform.



Figure 2. The Bradford Dhol Project SBC Theatre workshop.

The participants included a culturally diverse group representing English, Indian, Pakistani, Iranian, Chinese, and Arab backgrounds. Participants associated with the Touchstone charity were all proficient in English. In contrast, the SBC Theatre group included individuals with varied language skills, including non-English speakers. To ensure effective communication and engagement, an interpreter was present during the workshops, facilitating interactions and aiding in understanding the sound drawing activity. Within the group of participants, only two individuals had previous experience with musical instruments: one male had practised the guitar, while another was acquainted with playing the Arabic Oud.

This diversity aimed to capture a broad range of perspectives and experiences, enabling a thorough exploration of how sound drawing might bridge cultural boundaries in the context of dhol learning. The participants were all volunteers who expressed their willingness to be part of the study, highlighting their interest and enthusiasm for engaging with the dhol through creative approaches.

Data Collection

The data collection process captured participants' experiences with sound drawing and its potential impact on their understanding of dhol. The sound drawing activity was strategically positioned at the beginning of the workshop to establish an initial engagement point with the dhol sounds before any oral transmission took place. This positioning aimed to ensure that conventional teaching methods did not compromise participants' interpretations of the sounds.

The dhol has five distinct sounds: Dha, Na, Kin, Ge, and Ke. Open notes are produced by striking the drumhead and allowing it to resonate freely. Closed notes are produced by striking the drumhead and immediately dampening it. Each sound has distinct characteristics contributing to the rhythmic patterns unique to the dhol.

Dha: This sound is rich and resonant, combining a deep, low pitch from the bass drumhead with a higher, sharper note from the treble drumhead. It is produced by striking both heads simultaneously — open on the bass in the centre and the treble on the rim.

Na: A crisp and high-pitched tone, Na is produced by striking the edge of the treble drumhead. It typically has less resonance than Dha and is used for sharper staccato rhythms.

Kin: A muted tone that's softer and less resonant than open notes. Kin is created by striking the centre of the drumhead and immediately dampening the sound with either the sticks or the hand, resulting in a quick, dry thud.

Ge: This sound has a low and hollow quality and is made by striking the centre of the bass drumhead openly, allowing the sound to resonate fully.

Ke: Like Kin but on the bass drumhead, Ke is a muted, low-pitched tone. It is produced by striking the drumhead and quickly dampening it to create a controlled short resonance.

Sound Drawing Activity

Participants listened to the individual sounds of the dhol and expressed what they heard through drawing. Each note was played live on a dhol for one minute. The aim was to capture the auditory essence of the dhol notes visually.

Materials Provided:

Each participant was given a pencil and a sheet of A4 paper.

Listening and Drawing:

Participants listened to a single dhol note played repeatedly for one minute.

During this time, they drew their interpretations of the sound and were instructed to focus on the pitch and tone conveyed by the note.

Sound Drawing Without Preconceptions:

To maintain the auditory experience, the oral names of the dhol notes were not disclosed prior to or during the activity.

Participants were instructed to concentrate on the sound and represent their auditory perception without bias.

Sequence of Notes:

The dhol notes were played in the following sequence: Dha, Na, Kin, Ge, and Ke.

Each note was presented one after the other, with participants drawing for each sound in the specified order.

Collection and Grouping:

After each note's sound drawing session was completed, the sheets were collected immediately to prevent any influence on the perception of subsequent notes.

The drawings for each note were then grouped for subsequent analysis.

Conclusion of Activity:

Once all five notes had been played and the drawings collected, participants could discuss their illustrations if they wished.

Data Analysis and Findings

The data collected underwent Thematic Analysis (Holton 1973, Braun and Clarke 2006), drawing upon established methodologies. Thematic analysis is a systematic approach that facilitates the identification of recurring patterns, underlying themes, and valuable insights embedded within the dataset.

The sound drawing activity yielded a total of 105 sheets of illustrations. For each dhol note, some participants created multiple illustrations on a single sheet. It is important to note that some participants also included words in their drawings; however, these were not counted as illustrations. For this study, illustrations were defined as distinct shapes and patterns representing a singular drawing. The breakdown of illustrations for the individual dhol notes is as follows: Dha produced 25 illustrations, Na produced 24, Kin also had 25, Ge led to 28, and Ke comprised 24 illustrations.

Figures 3 through 7 represent participant illustrations for the five dhol notes: Dha, Na, Kin, Ge, and Ke. These figures display the varied and creative ways the

participants visualised the auditory characteristics of the respective dhol notes, offering insight into the sound drawing process for each distinct sound. The thematic analysis began with coding the collected data, primarily focusing on identifying and categorising the various characteristics in the sound drawing illustrations. This initial phase aimed to isolate recurring patterns, shapes, and themes within the visual representations of the notes. Once effectively coded, the subsequent step involved the generation of clusters, where similar characteristics and elements were grouped based on their shared attributes. These clusters formed the foundation for the overarching themes that emerged during the analysis. A comprehensive understanding of how participants creatively interpreted and expressed the notes through sound drawings was achieved by progressing from coding to clustering and, finally, to thematic development.

The themes that appeared from this analysis encompassed a broad spectrum of visual expressions:

Shapes and Lines: This theme explored the various shapes and lines employed by participants in their illustrations. It delved into whether participants gravitated towards curved or angular lines, geometric patterns, or more free-flowing artistic representations. Understanding these choices sheds light on how individuals perceive rhythmic and tonal qualities.

Patterns and Repetitions: By examining recurring patterns or repetitions within the illustrations, this theme sought to uncover whether participants consistently used specific visual motifs to capture specific dhol sound characteristics. Identifying such patterns offered insights into participants' attempts to convey structural characteristics through their drawings.

Spatial Arrangements: The theme of spatial arrangements explored how participants organised visual elements on the paper. This aspect provided insights into participants' spatial associations with the auditory experiences.

Intensity and Density: Focusing on the intensity and density of visual markings, this theme investigated whether some illustrations appeared more densely covered with marks than others. These variations can provide insights into participants' perceptions of volume or energy.

Shading and Texture: The theme of shading and texture considered the techniques participants used to add depth and texture to their illustrations. It explored whether participants employed shading, crosshatching, or other artistic approaches to represent tonal variations and dynamic changes.

The findings of this study focus on the thematic analysis of the sound drawing illustrations representing the Dha, Na, Kin, Ge, and Ke notes of the dhol. The illustrations provide unique insights into how participants creatively interpreted and expressed the activity. The analysis uncovers recurring patterns, shapes, and themes in the sound drawings, shedding light on their engagement with dhol drumming and the effectiveness of sound drawing as a teaching tool.

White Circle with Lines Radiating Outwards' (2%), offering valuable quantitative insights that complemented the qualitative analysis.

Na Note

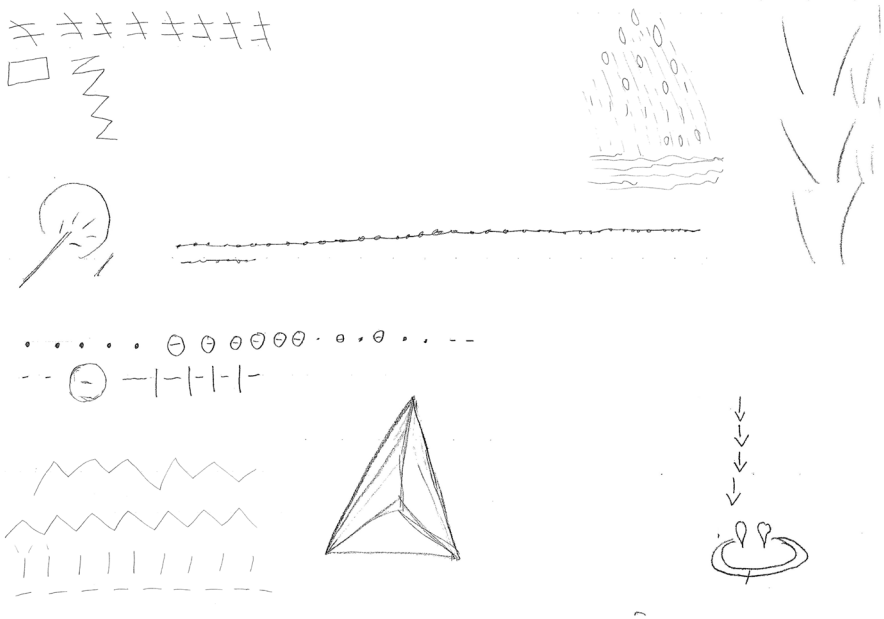


Figure 4. Samples of illustrations to the Na note.

In the sound drawings representing the Na note, participants used 'Straight Lines' (14%) and 'Circles' (10%) as significant shapes. These shapes conveyed aspects of the note's temporal and resonance qualities. 'Zigzag' patterns (4%) added dynamism, while 'Curved Lines and Dots' (4%) contributed fluidity and texture to the visuals. 'Square', 'Triangle', 'Arrow', and 'Teardrop' made single appearances (2%).

Regarding patterns, linear arrangements of 'Multiple Shapes in Rows' were common (16%), suggesting a structured representation. 'Linear Patterns' (10%) emphasised temporal progression, while 'Rows' (2%) indicated structured arrangements. Unique patterns included a 'Central Circle with Radiating Lines' (2%), symbolising focus and resonance, and linear formations of 'Small Circles with Straight Lines' (2%), representing recurring sound elements.

A combination of 'Vertical Lines', 'Circles', and 'Horizontal Zigzags' (2%) fused different sonic attributes. A complex pattern featured 'Triangles' with 'Converging Lines' (2%), signifying intricate sonic interpretation. Another pat-

tern combined 'Horizontal Zigzag Rows' with 'Vertical and Horizontal Straight Lines' (2%), indicating various sonic qualities and layering.

Kin Note:

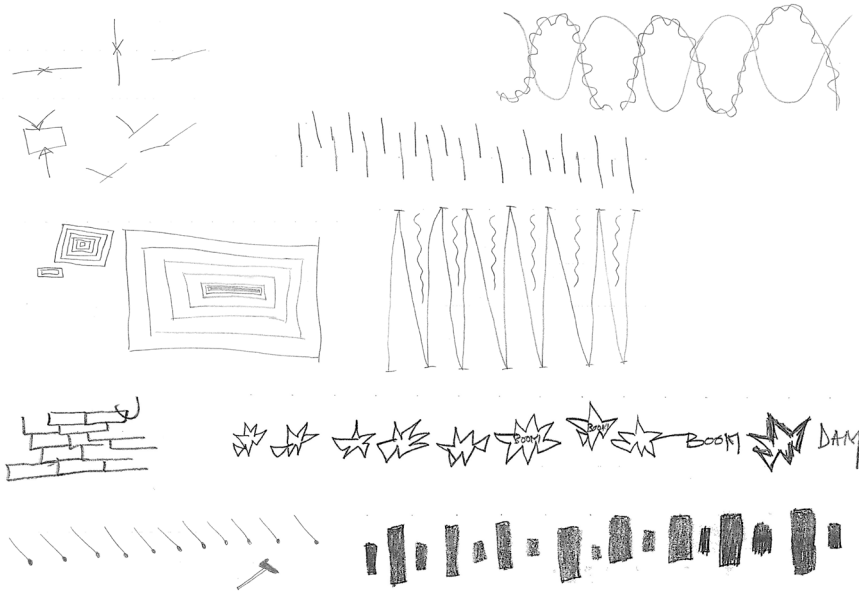


Figure 5. Samples of illustrations to the Kin note.

In examining sound drawings representing the Kin note, 'Straight Lines' took precedence among the diverse shapes employed, constituting a sizable 42% of the dataset, demonstrating their significance. 'Rectangles' comprised 30%, offering a structured element to the visual representations. 'Curved Zigzag', at 14%, introduced a visual texture to the drawings. 'Arrows' (6%), 'Zigzag' (4%), 'Square' (4%), 'Star' (2%), and 'Hammer' (2%) made occasional appearances, contributing to the overall diversity.

The exploration of patterns within these drawings uncovered exciting trends. 'Linear Rows' at 36% suggested a structured and organised approach to representing the Kin note. 'Alternating Height' (12%) and 'Interconnecting Shapes' (12%) provided variety and depth to the visual narratives. Some participants opted for 'Pointing Towards Another Shape' (4%), adding a directional aspect to their depictions. The occasional use of 'Concentric' (2%), 'Linear Patterns with Interconnecting Shapes Alternating in Height' (2%), and 'Rows of Straight Lines Alternating in Height' (2%) demonstrated creative interpretations. 'Two Lines of Curved Zigzags with Overlaid Lines' (2%) and 'Concentric Squares and Rect-

angles' (2%) added complexity and layering to the visuals. 'Alternating Zigzag with Straight Lines' (2%), 'Lines Forming Squares Stacked to Make a Wall with Interconnecting Shapes' (2%), 'Row of Star Shapes with Text Inside and to the Right' (2%), and 'Row of Vertical Angled Lines with Circles at the Bottom of Each Line' (2%) provided unique insights into the participants' artistic representations. The presence of a 'Small Vertical Rectangle Followed by a Larger Vertical Rectangle Repeating in a Row' (2%) added an element of repetition and symmetry to the sound drawings.

Ge Note:



Figure 6. Samples of illustrations to the Ge note.

In the sound drawings representing the Ge note, participants employed a variety of shapes and patterns to convey their artistic interpretations. 'Straight Lines' occupied a significant 35% of the dataset, providing structure and direction to the visual representations. 'Circles' followed at 20%, contributing to the note's resonance. 'Curved Lines' (15%) introduced fluidity and organic curves, adding an intriguing visual texture. 'V-Shape' (10%) and 'Spiral' (10%) brought unique elements to the drawings, offering diversity and creativity. Zigzags (5%) occasionally appeared, contributing to its distinct character.

Exploring patterns within these sound drawings unveiled fascinating trends and creative expressions. 'Radiating' (40%) patterns dominated, emanating from

a central point, echoing the note's essence of spreading outward. 'Concentric' (35%) patterns added complexity and layering, creating intricate visual narratives. 'Linear' (25%) patterns emphasised order and progression, providing a structured representation of the Ge note. 'Radiating Outwards with Concentric Circles and Straight Lines' (10%) introduced a dynamic interplay of shapes and lines. 'Two Connected Spirals from Left to Right' (5%) and a 'Centre Circle with Lines Radiating Outwards' (5%) demonstrated unique focal points within the drawings. 'Curved Lines Radiating Outwards from a Central Point' (5%) offered an organic twist to the radiating concept. 'Concentric Circles with Straight Lines Radiating Outwards' (5%) added depth and symmetry to the visuals. 'Circles with Text Inside Connected by Straight Lines to a Single Point' (5%) creatively combined textual and geometric elements. 'Vertical Zigzag on the Left and spirals in the Centre with Two Vertical Zigzags on the Right' (5%) introduced a dynamic balance. 'Concentric Circles on Top of Rows of Horizontal Straight Lines' (5%) and 'Rows of Straight Lines' (5%) provided structured and ordered representations. 'Concentric V Shapes from a Central Point' (5%) and 'Spiral Starting from the Left Side' (5%) offered unique perspectives on the Ge note. Lastly, 'Angled Straight Lines Starting from Left to Right and Right to Left Alternating Back and Forth' (5%) added a sense of motion and rhythm to the visual narratives.

Ke Note:

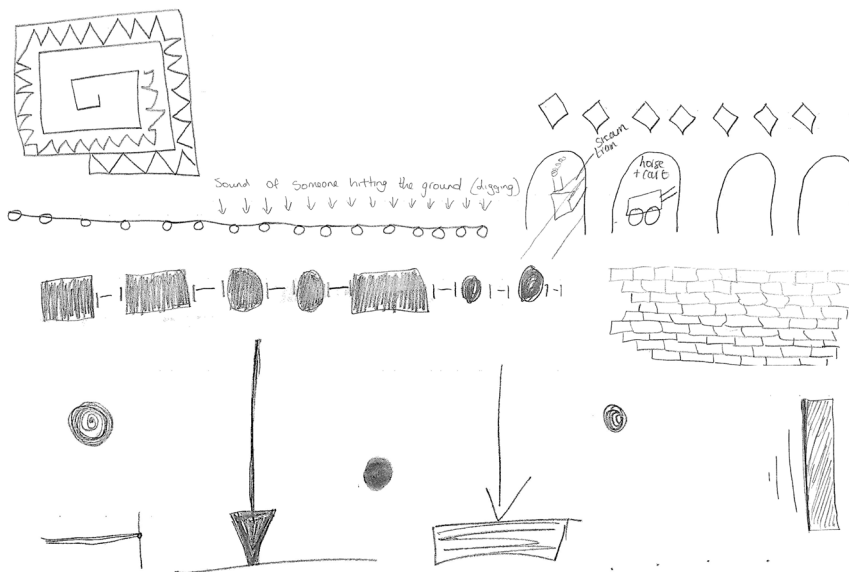


Figure 7. Samples of illustrations to the Ke note.

In examining the sound drawings representing the Ke note, key shapes were represented by 'Straight Lines' (30%), 'Circles' (25%), and 'Rectangles' (25%). These shapes formed the visual representations' foundation, conveying structure and flow. Additionally, other shapes such as 'Arrow' (10%), 'Dots' (10%), 'Square' (5%), 'Spiral' (5%), 'Zigzag' (5%), 'Diamond' (5%), and 'U-Shape' (5%) made intriguing appearances, adding diversity and creativity to the drawings.

Patterns within these sound drawings offered a dynamic dimension to the visual narratives. 'Linear' (30%), 'Connecting' (30%), and 'Repeating' (30%) patterns served as the backbone of the compositions, introducing order, connectivity, and rhythm. 'Linear with Connecting Shapes' (10%) provided an interesting juxtaposition of shapes and lines, adding complexity to the visuals. The pattern 'Circle with Straight Line Connecting to the Next Circle', 'Repeating', and 'Row of Arrows Pointing Down Towards Lines and Circles' (10%) introduced a unique interplay of 'Circles', 'Lines', and 'Arrows', creating a visually engaging narrative. Other patterns included 'Coloured Horizontal Rectangle followed by Vertical Line followed by Horizontal Line, Repeating with Coloured Circle' (5%), which offered a sense of symmetry and colour, 'Row of Diamonds Above Row of Upside-Down U Shapes with a Train Going Through on the Left' (5%), which added an element of storytelling, 'Rows of Rectangles Making a Wall' (5%), which introduced a structured arrangement, 'Coloured Circle Above Horizontal Line with Connecting Vertical Line', 'Downward Arrow Connecting with Horizontal Line', 'Downward Arrow Connecting with Coloured Rectangle' (5%), which combined various elements creatively, 'Row of Dots' (5%), offering a sense of rhythm and repetition, 'Vertical Lines Growing Towards a Coloured Vertical Rectangle' (5%), which added a sense of growth and transformation, and 'Horizontal Line Connecting to Dot with Vertical Line' and 'Row of Coloured Circles' (5%), introducing a dynamic connection between lines and circles.

Summary of Note Analysis

The analysis of sound drawings representing different musical notes has provided valuable insights into how participants visually interpret and express musical nuances. From the structured representations of Straight Lines and Circles in the Dha note to the dynamic Radiating and Concentric patterns in the Ge note, each drawing offers a unique perspective on the auditory experience.

The prevalence of specific shapes and patterns reflects the participants' emphasis on specific musical attributes. For example, 'Straight Lines' and 'Circles' appear frequently, suggesting their role in conveying structure and resonance. Patterns like 'Two or More Objects' and 'Radiating Outwards' dominate, indicating creative interpretations of musical progression and spread.

These findings demonstrate the multifaceted nature of sound drawing to represent complex auditory phenomena. Participants have creatively combined shapes and patterns to capture the essence of each musical note, revealing the rich potential of visual art in expressing sound. This exploration has deepened our understanding of the interplay between auditory and visual perception, shedding light on the intricacies of musical interpretation through visual means.

Results – Sound Drawing Notation for the Dhol

The final synthesised illustrations as a visual dhol notation system are presented in Figure 8. The thematic analysis of the sound drawing illustrations generated a rich tapestry of shapes, patterns, and themes, each capturing unique sonic elements of the dhol. The illustrations for all five dhol notes provide a comprehensive view of the notation system.

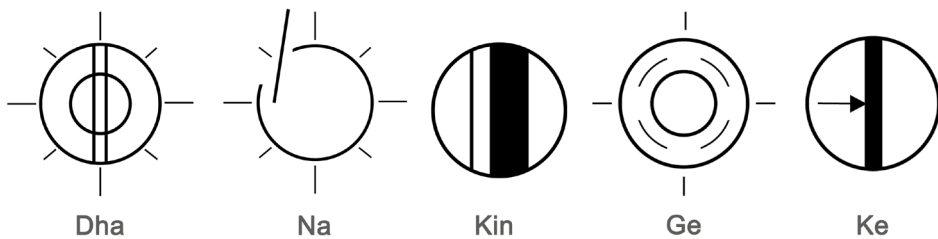


Figure 8. Visual dhol notation illustrations with oral note names.

All the notes share a common design element, featuring a prominent large circle that symbolises the drum's playing surface. This shared design element ensures consistency and ease of recognition within the notation system.

The Dha note is characterised by a large circle surrounded by radiating lines representing the resonance of the sound, with a smaller inner circle at its core, signifying the striking position. Two vertical lines indicate that the note is played on both sides of the drum.

The Na note is characterised by a large circle with radiating lines, symbolising the sound's bright resonance. Within this circle, a single line strikes the rim, and this visual representation captures the essence of playing the Na note while providing a clear and comprehensible reference for the precise striking position.

The Kin note is characterised by a large circle, within which are two vertical lines. The thinner line corresponds to the treble stick, while the thicker line represents the bass side. Notably, the thickness of the bass side line signifies a closed action for the Kin note on both sides of the drum.

The Ge note is characterised by a large circle surrounded by radiating lines representing the resonance of the sound, with a smaller inner circle at its core

signifying the striking position. It features concentric curved lines between the smaller and larger circles, representing the sound's resonance on the drum's bass side.

The Ke note is characterised by a large circle with a thick black vertical line representing the closed action of the sound. The Arrow pointing towards the centre of the line signifies the striking position.

These synthesised illustrations collectively constitute a visual dhol notation system that conveys each dhol note's nuanced techniques and characteristics. The approach to generating the notation system is a valuable contribution to the pedagogy of the dhol and demonstrates the power of visual representations in bridging the gap between auditory experiences and musical practice.

Post Activity Interview

During a post-workshop interview conducted at the SBC Theatre workshop, it became evident that the sound drawing exercise emerged as a notably more accessible means of conveying thoughts and expressions than traditional spoken language. This observation, demonstrated by participants who did not have fluency in the English language, engaging in the sound drawing activity fostered a profound connection between the participants and the dhol drum, as well as among the participants through their shared engagement in this innovative form of communication.

In an interview with Rosie MacPherson, Artistic Director at SBC Theatre (MacPherson 2023), she found it particularly intriguing that participants immediately grasped the concept, mainly when translating auditory experiences into visual representations. In the interview, I asked Rosie questions about her observations on participants' quick grasp of sound drawing, the role of diverse backgrounds in the activity's success, and how the method's adaptability and absence of rigid rules might be beneficial in broader educational contexts:

Reaction to Participants Engaging with Sound Drawing:

“It was quite remarkable to see participants, regardless of their varied backgrounds, immediately understand and embrace the concept of sound drawing. They intuitively began translating the sounds they heard into visual forms.”

Diverse Backgrounds Contributing to Understanding:

“The diversity of the group seemed to enrich the activity. Without a single ‘correct’ way to perform the task, participants brought their own unique interpretations to the exercise, which made the process of exploring sound drawing even more dynamic.”

Influence of Lack of Strict Rules:

“The absence of strict guidelines allowed participants the freedom to express themselves openly. This flexibility seemed to encourage a more genuine and personal connection with the activity, which is vital in artistic expression.”

Quick Grasp of the Concept:

“Participants were quick to grasp the concept because it resonated with them on a fundamental level. Sound drawing taps into a universal desire to express and communicate experiences, which transcends language and cultural barriers.”

Benefits for Other Groups:

“I firmly believe that this adaptable and open-ended approach has the potential to benefit a wide range of groups. It fosters creativity and individual expression, which are essential in many learning and collaborative environments.”

Method Fostering Closer Connections:

“This approach can be a powerful tool for group cohesion. By engaging in a shared activity that values each member’s input, groups can build stronger connections and a sense of community.”

Role of Creative Freedom:

“Creative freedom was essential. It gave participants the space to interact with the dhol sounds in their own way, which, I think, deepened their understanding and enjoyment of the activity.”

Connecting with the Dhol Through Sound Drawing:

“I noticed that even those who might have felt inhibited by language or educational barriers were able to connect deeply with the practice of dhol drumming. Sound drawing served as a universal language for them.”

Facilitating an Inclusive Learning Space:

“Sound drawing created a welcoming and inclusive environment where everyone felt able to contribute. It was a space where the act of listening closely and depicting what was heard was valued more than technical skill or prior knowledge.”

Implications for Broader Educational or Artistic Contexts:

“Based on what we observed, sound drawing has the potential to be an influential tool not just in music education but across various artistic and educational settings. It opens up new avenues for engagement and could be particularly impactful where conventional communication methods are limited.”

Rosie’s insights reveal significant broader implications of sound drawing, as observed in the workshop, suggesting its utility as a powerful educational and artistic tool. Its ability to facilitate engagement in scenarios where traditional communication methods may be less effective holds promise for various educational contexts.

It becomes evident that sound drawing, as employed in the SBC Theatre workshops, serves as a pedagogical aid and a medium for building community

and fostering inclusive participation. The participants' positive reception and meaningful output underscore sound drawing's capacity to bridge gaps in music education and any setting where expression goes beyond words.

Conclusion

This study has aimed to investigate the viability of sound drawing as a creative method to develop notation for dhol sounds, moving beyond the traditional reliance on oral transmission. It has focused on exploring how sound drawing can act as an intermediary in translating the dynamic auditory qualities of the dhol into a visual notation system. The approach has implications for enhancing teaching methods and broadening the perceptual understanding of this culturally significant musical instrument.

The findings point to the potential of sound drawing to transcend linguistic limitations. By exploring the intricate relationship between auditory perception and visual representation, this research introduces a tool that can broadly transform dhol instruction and music education.

The study's results also highlight the notable effectiveness of sound drawing as an instructional method for dhol pedagogy. The inclusion of participants from diverse linguistic backgrounds underscores the inclusive and accessible nature of this approach.

The findings demonstrate that sound drawing is adaptable as an instructional tool, transcending linguistic barriers and accommodating individuals with varying educational backgrounds. This adaptability holds promise for cross-cultural learning and engagement when applied to the pedagogy of the dhol.

At the core of this research lies the thematic analysis of sound drawings that represent five key dhol notes: Dha, Na, Kin, Ge, and Ke. This analytical process culminated in creating a visually original dhol notation system. Within this system, each note's visual representation extends beyond the imagery, encapsulating the intrinsic qualities of its sound, playing technique, and subtle nuances, maintaining a consistent design element and ensuring cohesion within the notation system.

The implications of this research extend beyond the realm of dhol drumming. The visual dhol notation system, stemming from sound drawing, carries the potential to enrich musical instruction across diverse cultures. This study also prompts questions regarding the applicability of sound drawing in teaching various musical traditions within varied educational settings.

In concluding this study, it is crucial to emphasise the transformative capacity of sound drawing, not only as an instructional tool but also as a means of fostering collaboration and co-creation among participants from diverse cultural backgrounds and varying degrees of understanding. As observed in the

research, the sound drawing process offered a unique platform for individuals with different linguistic proficiencies and educational experiences to come together. It facilitated a dynamic exchange of ideas and interpretations, transcending cultural and language barriers. In this way, sound drawing has proven to be more than a teaching method. It is a collaborative medium, promoting inclusivity and enabling individuals to craft a visual notation system for the dhol collectively, uniting their diverse perspectives into a co-created representation of this culturally significant instrument. Moving forward, the potential of sound drawing to serve as a bridge between cultures and languages in music education becomes increasingly evident, promising new perspectives for cross-cultural understanding and the appreciation of music worldwide.

Future Works

The potential of the dhol notation system, rooted in sound drawing, extends significantly as a tool for teaching various groups the basic sounds of the dhol. Future research is set to assess its efficacy in diverse educational settings, emphasising its adaptability across different cultural and linguistic backgrounds.

Key future objectives include implementing workshops in educational and community settings to introduce and test the dhol notation system. These workshops will cater to diverse age groups and cultural backgrounds, aiming for inclusivity. The effectiveness of these programs will be evaluated, focusing on student engagement and comprehension. Additionally, integrating digital tools will be explored to enhance learning and engagement. Collaborative research with educational institutions and cultural organisations will also be a significant focus, refining and expanding the system's application. This future direction in research seeks to advance dhol pedagogy and contribute to innovative, inclusive music education methodologies.

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SOUND DRAWING AND DHOL NOTATION: A METHODOLOGICAL APPROACH TO VISUALISING DRUM SOUNDS.

(summary)

The study investigates the transformative potential of sound drawing as a novel method for representing dhol drumming, offering an alternative to the traditional reliance on spoken language in music education. This research seeks to bridge the gap between the dynamic auditory qualities of the dhol, a traditional South Asian drum with deep cultural significance, and their corresponding visual interpretations. The aim is to enhance dhol instruction and promote cross-cultural understanding, making the dhol more accessible and inclusive.

The research methodology involved two two-hour workshops conducted as part of the Bradford Dhol Project, an initiative promoting cultural diversity and community engagement through the dhol drum. The 21 participants, comprising individuals from diverse cultural backgrounds, including English, Indian, Pakistani, Iranian, Chinese, and Arab origins, engaged in a sound drawing activity. This creative exercise allowed participants to visually represent the sounds produced by the dhol, providing a unique perspective on the instrument’s auditory nuances.

The data collection process began with the sound drawing activity, strategically positioned at the start of the workshop to ensure participants’ interpretations of dhol sounds remained uninfluenced by conventional teaching methods. Participants were given pencils and paper to translate auditory experiences into visual illustrations, each representing one of the five key dhol notes: Dha, Na, Kin, Ge, and Ke.

Thematic analysis, drawing from established methodologies, uncovered several recurring themes within participants’ sound drawings:

Shapes and Lines: Participants employed various shapes and lines to represent dhol sounds, offering insights into their perception of rhythmic and tonal qualities.

Patterns and Repetitions: Recurring patterns and motifs in the illustrations revealed participants’ attempts to convey rhythmic elements and structural characteristics.

Spatial Arrangements: How participants organised visual elements on the page shed light on their spatial associations with auditory experiences.

Intensity and Density: Examination of the intensity and density of visual markings provided insights into participants’ perceptions of volume and energy in dhol sounds.

Shading and Texture: Participants used shading and texture to depict tonal variations and dynamic changes in dhol sounds.

The findings demonstrated the adaptability and inclusivity of sound drawing as an

instructional tool. Participants with diverse linguistic backgrounds, including those with limited fluency in English, found it easier to connect with the dhol through this creative approach. The sound drawing exercise fostered a profound sense of connection not only between participants and the dhol but among the participants, transcending language barriers and facilitating a dynamic exchange of ideas and interpretations.

Furthermore, the research culminated in creating a visually innovative dhol notation system, synthesising the individual note illustrations. This notation system with oral note names offers a comprehensive visual representation of all five dhol notes. It is a powerful teaching tool, bridging the gap between auditory experiences and musical practice.

In conclusion, this study highlights the transformative capacity of sound drawing in dhol drumming and music education. Beyond its role as an instructional method, sound drawing fosters collaboration and co-creation among participants from diverse cultural backgrounds. It provides a platform for individuals with varying linguistic proficiencies and educational experiences to unite in crafting a visual notation system for the dhol. Therefore, sound drawing emerges as a teaching tool and a collaborative medium, promoting inclusivity and enabling individuals to collectively represent this culturally significant instrument. As we move forward, the potential of sound drawing to serve as a bridge between cultures and languages in music education becomes increasingly evident, promising new perspectives for cross-cultural understanding and the appreciation of music.

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