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Sounds of Wisdom: Unveiling the Hidden Pedagogical Power of Musical Instruments of World Music Ensembles[1]

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Abstract

This article explores the transformative power of musical instruments on pedagogical strategies within music ensembles, with a focus on world music ensembles at the tertiary level. Drawing from my unique perspective as an international graduate student in the U.S. and having had no prior exposure to world music ensembles, I share my experiences with the *saron* metallophone from the Javanese gamelan and the *mṛdaṅgam*, the principal rhythmic instrument of South Indian Karṇāṭak music ensemble. I argue that the interaction of sound between instruments and learners offers a deeply enriching, immersive educational journey. Recognizing this sonic interaction broadens our understanding of world music education and suggests that instruments inherently carry pedagogical value. By embracing this notion, educators can cultivate a more holistic teaching methodology, enhancing the pedagogical landscape within and beyond world music ensembles.

Keywords: Javanese gamelan, mṛ*daṅgam*, music education, performance pedagogy, world music ensembles

Introduction

World music ensemble educators play a crucial role as intermediaries, enhancing cultural comprehension and facilitating a compassionate exploration of an array of global musical terrain. Their significant responsibilities include honouring and

correctly contextualising diverse musical traditions to prevent cultural misrepresentation. Through a diligent and ceaseless commitment to teaching the genres of their expertise, these educators empower their students with the requisite knowledge and instrument-playing techniques to encapsulate the spirit of the music. Nevertheless, their mission is often hampered by the substantial challenges set by their parent academic institutions. These hurdles encompass restricted time frames typically bound by the academic calendar, high student turnover rates, and the implicit demand to produce outstanding performances. Collectively, these aspects add a multifaceted layer of challenges to the world music ensemble curriculum (Lu, 2023; Solis, 2004a).

World music ensemble educators form the basis of their student's musical progression. They offer essential guidance, an abundance of resources, and supplemental assistance encompassing notation, multimedia materials, and additional tutorials beyond the prescribed class schedule. Utilising creative pedagogical strategies, they adeptly impart vital skills, techniques, and culturally pertinent knowledge related to the musical tradition. As a result, they cultivate what Solis (2004b, p. 17) referred to as "meaningful and coherent performative worlds" through constant adaptation and transformation and what Kisliuk and Gross (2004, p. 253) articulated as "interpretations of the musical tradition rather than merely replicating original ensembles." The educator is essential in delivering guidance, educational materials, and innovative teaching methods to enrich students' experiences in the vibrant world of music ensembles.

In addition to their comprehensive responsibilities in teaching and performance, numerous world music ensemble educators undertake research work and administrative tasks within their institutions. These commitments necessitate students' active engagement in self-directed learning and consistent practice, allowing them to refine their instrumental skills through sonic interaction. This interaction involves attentive listening, familiarising required movements and gestures, and discerning feedback manifested through the auditory output of the musical instruments. Thus, in this context, musical instruments can also be viewed as nonhuman educators.

In this article, I explore the interplay between physical movements, focused listening, and the learning journey of musical instruments within world music ensembles. At the heart of this exploration is my personal experience, offering insights into the educational alchemy that took place. As an international graduate student, I embarked on a musical journey with world music ensembles at Wesleyan University, a liberal arts college in Middletown, Connecticut. What became fascinating to me through firsthand encounters is the universality of learning experiences across musical traditions. One such learning experience is the sonic interactions between students and their musical instruments. Whether the balungan instruments of the Javanese gamelan, the South Indian mṛdaṅgam barrel drum, the violin of the Western symphony orchestra, or the drumkit of a jazz trio, musical instruments can emerge as nonhuman mentors, each imparting distinct lessons, and educational values. By weaving together my firsthand accounts of immersion in world music ensembles at Wesleyan, my goal is to illuminate these insights and inspire scholars, educators, and ensemble directors of diverse musical genres to appreciate

the common pedagogical essence of musical instruments. Whether one is part of a jazz ensemble, a brass band, or a Japanese gagaku ensemble, instruments have an innate ability to guide, challenge, and teach. As this paper focuses on world music ensembles within an academic context, I will present a brief historical overview of world music ensembles in the academy.

Mantle Hood's Notion of Bi-Musicality and World Music Ensembles

For over six decades, world music ensembles have established themselves as pivotal pillar within universities and global educational institutions. Their presence has brought about a profound augmentation of the academic journey for students and scholars by presenting a broad palette of performance and research possibilities. These ensembles serve as a dynamic platform that stimulates a deeper engagement with the multitudinous musical traditions worldwide, thereby enriching the academic realm.

In 1954, Mantle Hood took up a faculty position at the University of California, Los Angeles (UCLA), and ingeniously introduced the notion of bi-musicality.[2] Hood emphasised the importance of cultural immersion using music, dance, and rituals to achieve a more profound understanding. These activities forge strong connections that transcend language barriers, as the link between traditional music and its culture provides remarkable authenticity and unambiguous communication without the need for translation or transliteration (Hood & Trimillos 2004, pp. 285-288). To this end, UCLA incorporated master musicians as artists-in-residence within the music department, empowering them to impart their musical traditions to the student body.

Building on UCLA's pioneering work in the early 1960s, Robert E. Brown, a disciple of Mantle Hood, adapted the UCLA model for implementation at Wesleyan University. Brown contends that engaging with a different culture necessitates a profound commitment to genuinely appreciating and nurturing that culture, leveraging all available resources to support and nourish the valued musical traditions (Brown, 1997). In 1962, Brown invited his mṛdaṅgam teacher, T. Ranganathan, to serve as Wesleyan's inaugural artist-in-residence. He later broadened the program to include additional artists-in-residence representing diverse global cultures.[3] Brown's unwavering devotion fueled the extraordinary growth of Wesleyan's ethnomusicology program, which now boasts an eclectic array of world music ensembles, ultimately elevating it to a distinguished status within the United States.

As the 20th century gave way to the 21st, an extraordinary upswing in world music ensembles enlivened the campuses and concert halls of educational institutions worldwide. This growth was fueled by a burgeoning enthusiasm for ethnomusicology and the unwavering commitment of universities to nurture multiculturalism within their curricula. Academic institutions across the United States, Europe, and Asia embraced ensembles celebrating an extensive array of world music traditions. These ensembles offered students a platform to learn and perform traditional music and fostered cultural exchange and understanding between participants and audiences.

A crucial element of world music ensembles is the cooperative engagement with instructors who exemplify the cultural traditions inherent in the music being taught, promoting skilful leadership within these groups. These educators personify the "teacher as text" concept (Racy, Marcus, & Solis 2004, p. 3), offering an opportunity to examine the transmission of musical knowledge beyond the constraints of Western, language-centred pedagogy. Moreover, by emphasising demonstration and repetition over questioning and explanation, world music ensembles create a supportive environment that encourages teachers to primarily use kinesthetic and auditory techniques for sharing knowledge (Trimillos, 2004, p. 39). This teaching approach not only fosters a more profound appreciation of different cultures but also facilitates the growth of vital skills among students, thus cultivating an enriched and immersive learning experience.

The immersive learning process in world music ensembles helps students deeply understand and connect with the music, allowing it to become part of their intellectual and cultural identities (Harnish, 2004, p. 127). The ensemble environment, with its unique spatial layout, interesting artefacts such as musical instruments, and engaging social interactions, supports and enhances the teacher's goals and actions. Students must grasp the teacher's expectations and desired outcomes to become skilled in their roles in the ensemble. The learning process involves carefully listening, following clear instructions, and imitating the teacher's sounds and physical movements.

Auditory, tactile, and kinesthetic learning are essential components in disseminating musical knowledge. These components render world music ensembles a profoundly impactful and transformative educational experience. By embracing a holistic approach to music education, students can become versatile musicians with heightened cultural awareness and empathy. In the following sections, I will explore the pedagogical significance of incorporating physical movements, gestures, and listening while learning an instrument.

Learning Physical Movements in World Music Ensembles

In his landmark work, "Techniques of the Body," Mauss (1973) explores the concept of body techniques, framing them not as isolated habits but as entities deeply entwined with sociocultural factors. These include educational practices, contemporary fashion trends, and societal status. Building on Mauss's foundational theory, Crossley (2022, p. 10) highlights the pivotal role that physical movement plays in a musician's early learning trajectory. Through this transformative journey, Crossley suggests that burgeoning musicians not only gain competency in their chosen instrument but also develop and refine critical physical techniques and movements. These proficiencies can ultimately lead to unlocking the full potential of their instrument. The journey of learning a musical instrument is anchored in acquiring and mastering intricate physical instrument playing techniques pivotal for proficient performance. Through diligent and focused practice, students in world music ensembles hone the unique physical movements that each instrument demands, enabling them to perform with enhanced proficiency and emotional depth.

World music ensembles vividly underscore the significant impact of

corporeal motions, manifested through unique instrumental techniques, nurturing an understanding and appreciation of music that transcends the varied sociocultural origins of its participants. This universal orchestration is palpable within world music ensembles around the globe. For instance, irrespective of the diverse backgrounds of the Wesleyan and National University of Singapore gamelan ensembles, performers continue to uphold the traditional physical actions required to execute complex gamelan techniques. This viewpoint is further reinforced by the research conducted by ethnomusicologists. Hesselink's (2004) study on South Korean Samul Nori drum ensembles, Brashier's (2013) exploration of the embodiment of Balinese gamelan knowledge at the Eastman School of Music, and Lai's (2023) investigation of Damaru, the Singaporean pan-Indian folk drumming ensemble, all converge on this point. These research endeavours illuminate the timeless resonance of specific bodily movements within instrumental techniques, underscoring their enduring relevance. Despite geographical disparities, evolutionary shifts in ensembles, and ongoing musical innovation, these movements persist, demonstrating their crucial role in preserving and enhancing the depth of these profound musical traditions. They stand as a testament to the intrinsic value and powerful influence of physical movement in shaping and propelling the spirit of world music traditions forward.

Learning these movements can pose formidable challenges for students, particularly if such gestures are unfamiliar due to their cultural background. However, the necessity of acquiring proficiency in these movements for participation in a world music ensemble cannot be overstated. Slobin (1996, p. 23) emphasises that engagement in a world music ensemble requires students to surpass their physical and mental limits. They may face unfamiliarity with specific movements and gestures due to their unique backgrounds. By immersing themselves in this process, students set upon a journey of personal evolution and cultural enlightenment. This enriching journey enhances their appreciation of the myriad of musical expressions and deepens their understanding of the diverse and lively world of music.

The path to learning a musical instrument surpasses mere physical dexterity. It also necessitates the refinement of sharp listening skills. The following section will explore the intricate interplay between physical techniques and enhanced auditory perception, illuminating the significance of both components in mastering a musical instrument.

Engaged Listening in World Music Ensembles

Beyond mastering the physical techniques required to play an instrument, active listening emerges as an equally vital element in world music ensemble pedagogy. Sumarsam (2004, p. 86) emphasises the importance of attentive listening in gamelan instruction. He advocates for a pedagogical approach that launches without the reliance on notation, subtly guiding students into a sensory dive into the distinctive sounds and unique tuning nuances intrinsic to gamelan music. Notation, as Sumarsam further elaborates, is an effective aid when retaining compositions poses a challenge to students, bolstering their learning expedition (ibid.). This immersive methodology nurtures a profound appreciation for the nuances of the musical tradition, thus paving

the way for students to augment their understanding and foster a deep admiration for the musical practice.

During their acquaintance with the unique sounds and tunings of a musical instrument, students embark on a journey resembling what Campbell et al. (2021, p. 16) identify as "engaged listening." World music ensemble students are urged to be active participants in various musical aspects—whether singing a melody, maintaining rhythm, performing a rhythmic composition, or executing a dance sequence (ibid., 52). Further, Campbell et al. posit that engaged listening heightens students' sensitivity towards the subtle intricacies within a composition (p. 53). This enhanced perceptiveness empowers them to discern elements, including distinctive styles, specific instrumental or vocal timbres, and the fusion of harmonic constituents with a heightened concentration.

In the quiet solitude of individual practice sessions, students meticulously refine their senses tuned to the nuanced dance of physical exertion on the musical instrument and its resulting sonic feedback. This auditory exchange exemplifies the art of active listening and physical adjustments according to the instrument's sound. It unearths a deep-seated phenomenon: musical instruments transcend their fundamental role as mere sound generators.

Yung (1984) eloquently posits that the true essence of a musical instrument encompasses much more than simply producing sound. His thesis underscores the crucial role of kinesthetic elements in the musical experience of instrumentalists, especially within the context of *guqin* performances. Yung's proposition on the kinesthetic component of music performances broadens our understanding of musical instruments and enhances the sensory experience of playing them. Bates (2012) complements Yung's ideas, furthering the discourse on the relationship between physical movement and music. He asserts, "Our appreciation and comprehension of music can be significantly elevated by deepening our understanding of the methods of sound production, concurrently demanding a focus on the interplay between objects and instrumentality." Bates' assertion accentuates the profound influence of the tactile experience on sound perception when playing an instrument, fostering a more intimate connection between the musician and the instrument.

The synthesis of Yung and Bates's perspectives affirms the multifaceted nature of musical instruments. They surpass their fundamental role as sound-generating artefacts, becoming conduits of musical experiences for the musicians. Their true potential is unlocked when we delve deeper into the intricate interplay between the tactile and the aural, the musician and the instrument.

The significance of physical movements and active listening in mastering a musical instrument is highlighted in this section, underscoring their educational value within the framework of world music ensembles. The ensuing discussion will delve deeper into the role of musical instruments as dynamic elements within the social structure of world music ensembles, dissecting their pedagogical input and building a robust case for acknowledging them as nonhuman educators.

Instruments as nonhuman

Musical instruments innately embody pedagogical qualities, serving as alternative

educators in the absence of a human instructor. Recognising these instruments as nonhuman mentors within world musical ensembles, we can perceive their unique contribution to instruction. Their pedagogical impact amplifies the complexity of social exchanges, an integral facet of world music ensembles, thus underscoring their invaluable role in this setting.

Bennett introduced the concept of "thing-power" to describe the capacity of inanimate objects to animate, influence, and generate both dramatic and subtle effects (2010, p. 6). This idea has served as a cornerstone for recent studies to consider musical instruments more seriously within the field of Ethnomusicology. Scholars, including Yamin (2019), Rees (2017), and Bates (2012), have demonstrated that musical instruments possess social lives, much like humans, which contribute to the social dynamics within music culture, thus making them valid subjects for research.

Adapting Bates' (2012, p. 364) argument regarding the social lives of musical instruments to the realm of world music ensembles, a musical instrument is intertwined within intricate networks of relationships among students, teachers, and instruments themselves. These connections encompass interactions between student and student, student and teacher, student and instrument, teacher and instrument, and instrument and instrument.

By attributing the core principles of autonomy and individuality to musical instruments, akin to those granted to human subjects, researchers can better comprehend the active instructional function they serve within the social dynamics of global music ensembles. The instructor demonstrates the necessary techniques for playing the instruments while the instruments generate sounds corresponding to the educator's actions (see Figure 1). Conversely, students learn and emulate these techniques and sounds on their instruments. During individual practice sessions, when a human teacher is absent, the instruments assume the role of the mentor by offering auditory feedback, guiding students to refine their techniques, and harmonising with the ensemble (see Figure 2).

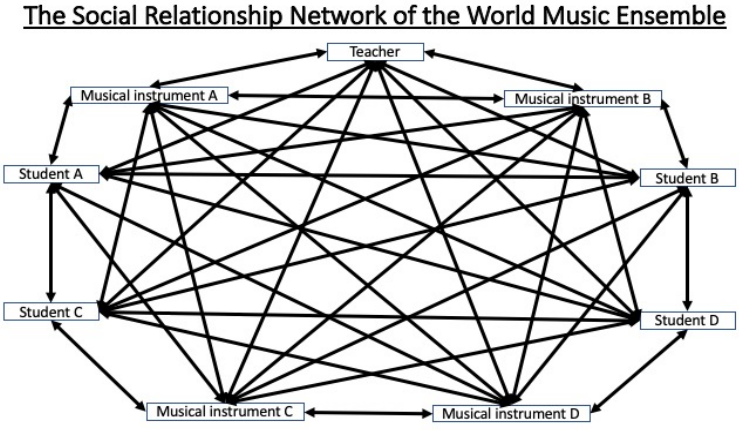

Figure 1. The Social Relationship Network of the World Music Ensemble based on Bates (2012, 364).

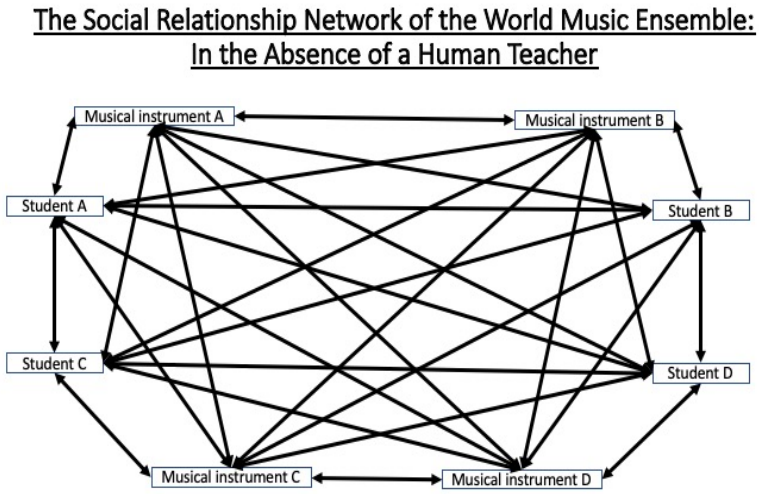

Figure 2. The Social Relationship Network of the World Music Ensemble in the absence of a human teacher.

Thus far, I have examined the critical role that physical movements and active listening play in learning a musical instrument and provided an in-depth analysis of the profound educational influence that such instruments exert within the framework of world music ensembles. In the remaining sections, we glean insights from an immersive engagement with two instruments: the Javanese gamelan's *saron* and the South Indian mṛdaṅgam drum. These explorations underscore the teaching merits inherent in the rich, dynamic sonic exchanges between a learner and their musical instrument.

Javanese Gamelan instruments as a nonhuman teacher

The Javanese hold the gamelan in extraordinary esteem, perceiving it not merely as a musical instrument but as an ancestral treasure imbued with enigmatic and mystical energy. Sumarsam vividly captures this sentiment in his writing:

> Often, the Javanese consider a gamelan set as *pusåkå*, an inherited object endowed with supernatural power. An honorific title, Kyai or "The Venerable Sir," and a name is assigned to the gamelan. An offering is provided periodically, and incense is burned before the gong. For this reason, the Javanese always show respect for the instruments (2023, 8).

The Wesleyan World Music Hall is home to two unique gamelan sets. The five-tone sléndro gamelan set is called Kyai Mentul, or "Bouncing," and the seven-tone pélog gamelan set is named Kyai Pradhah, or "Generosity" (see Figure 3). Before every semester-end concert, a performer offers flowers, food, and coffee to these instruments (see Figure 4). Ethnomusicologist Maho Ishiguro, a former gamelan member of the Wesleyan Javanese gamelan ensemble, shared that the instruments

expressed their desire for coffee as an offering through a dream (Maho Ishiguro, personal communication, December 2, 2016). These anecdotes highlight the extraordinary character of the gamelan instruments.

Figure 3. The Wesleyan Javanese Gamelan Ensemble with Gamelan sets Kyai Mentul and Kyai Pradhah (Courtesy of I.M. Harjito).

Figure 4. Offerings for the gamelan (Courtesy of Maho Ishiguro)

In the spring of 2015, I found myself venturing into the mesmerising realm of Javanese gamelan music, captivated by its rhythmic allure and instrumentation. In the first gamelan class, I was introduced to the saron and the *demung*, both exquisite

forms of metallophones. Both instruments are part of the balungan playing instruments, aptly considered the musical spine of any Javanese gamelan ensemble.

Professor Sumarsam, an authority on gamelan music, guided us through this intricate exploration. With his profound wisdom, we embarked on understanding the subtle art of striking and damping, an essential technique when playing the saron or demung. This playing technique involves a swift sequence of actions: a key is struck by the mallet held in one hand, and almost simultaneously, the sound of the previously struck key is subdued by the other hand. The damping is accomplished by pinching the key between the left thumb and index finger (see Figure 5). If the precision falters, the sounds could interweave, resulting in a muddled musical output. Interestingly, some experimental compositions purposely employ such a melding of sounds. Initially, mastering this damping technique was daunting, but consistent practice gradually transformed it into an intuitive part of the playing process.

Figure 5. The strike and damp techniques. The player damps the *dhådhå* (key number 3) while striking the *gulu* (key number 2).

Following his illuminating demonstration, Professor Sumarsam provided us with the latitude to explore our respective instruments while he preoccupied himself with preparing the kendang drum for ensemble rehearsal. As the ensemble initiated their performance, I wrestled with keeping tempo, simultaneously attempting to perfect the strike and damp techniques. Inevitably, I put the daunting task of damping aside and proceeded to play the saron in a manner reminiscent of a xylophone for the rest of the session. Although my initial efforts were disheartening, I resolved to arrive earlier for future rehearsals, pledging extra hours for solitary practice to refine my technique and elevate my musical understanding.

A few weeks into my dedicated practice sessions, my attention began to centre on the saron's acoustic subtleties as I refined the strike and damp technique. In

this auditory dialogue with the instrument, I strived for a fluid sound transition, damping the previous key at the exact instance of striking the next. Premature damping interrupted the saron's seamless melodic flow, while delayed damping generated an echoing resonance that distorted the following note. As my body acclimated to these precise movements and gained fluency in developing a seamless sound from the saron, the strike and damp technique transformed from a deliberate action into an instinctive manoeuvre.

Weeks into this immersive practice, I began to decode the delicate nuances of the saron's sound, continually honing my strike and damp techniques. Engaging in this auditory dialogue with the instrument, my goal was to create an uninterrupted, melodious flow. This technique required damping the previously struck key at the exact moment the following note was sounded. If I damped too swiftly, the melodious continuity of the saron was disrupted, creating a jarring auditory experience. Conversely, if I damped too leisurely, the resultant resonance interfered with the subsequent note, creating a dissonant echo that blurred the intended melody.

As I became more attuned to the intricate choreography required to produce a harmonious sound on the saron, the strike and damp technique organically transitioned from a conscious endeavour to an instinctual process. This evolution allowed me to fine-tune my technique, forging a deeper connection with the instrument. Free from the constraints of mechanics, I was now able to immerse myself fully in the music, resonating with the emotions conveyed through each piece. This intuitive approach augmented my technical prowess and enriched my emotional engagement with the music, fostering a deeper connection with the instrument and the enthralling realm of Javanese gamelan music.

As this intuitive connection grew, my body absorbed the movements, gradually achieving the fluidity necessary for a continuous sound on the saron. Applying the strike and damp technique became second nature on all balungan instruments, including the demung, *pekin*, and *slenthem*. Notably, during our sonic interaction, the responsive nature of the gamelan instruments provided us with vital feedback, signaling sound anomalies such as a key failing to resonate when struck or the buzzing sound caused by the contact of two or more keys. These acoustic cues prompted us to make necessary adjustments, maintaining the instrument's desired sound.

In the context of Javanese gamelan social relations, performing the *imbal*, or interlocking patterns, on the saron or demung presented a unique sonic interaction involving two instruments and two players (see Figure 6). The complexity of the strike and damp technique is further amplified when executing the imbal on the demung. The performer must not only master the technique of playing the demung but also attune to the partnering demung player, adjusting the precise timing of the strike and damp process. This challenge escalates when playing the imbal melody at the composition's most intricate and rapid sections. Any discrepancy in speed or volume between the demung players could disrupt the imbal melody, detracting from the desired harmony in Javanese gamelan performances. When the performers synchronise their movements, the two demungs unite, creating a single repeating melodic pattern.

Figure 6. Performing the *imbal* on two *sléndro sarons*. The player (on the left) damps the *dhådhå* (key number 3) while striking *gulu* (key number 2). The other performer (on the right) damps the higher *barang* (key number 1) while striking *nem* (key number 6).

My journey in learning the striking and damping techniques of the balungan instruments and executing the intricate interlocking patterns known as imbal has illuminated the essential synergy between physical movements, active listening, and the sonic feedback from these instruments. This sonic exchange between the student and the instrument vividly exemplifies the instrument's profound capacity as a nonhuman teacher. In the following section, I will present my encounter with the South Indian mṛdaṅgam drum, further emphasising the instrument's role as a remarkable instructor beyond human realms.

The mṛdaṅgam instruments as a nonhuman teacher

In the fall of 2014, my academic journey took an exciting turn as I commenced my first semester as a graduate student at Wesleyan University. My journey into the world of South Indian percussion was initiated under the guidance of Professor David Nelson. My studies began with mastering the basics of the mṛdaṅgam, a two-headed barrel drum used as the primary accompanying percussion instrument for karṇāṭak music, the South Indian rāga-based music.

Esteemed mṛdaṅgam performers, such as U. Sivaraman, hold their instrument in high regard, equating its sanctity with revered instruments like the viṇā and the veṇu, a flute endemic to Karṇāṭak music (Sivaraman cited in Devnath, 2003, p. 45). This profound reverence is often expressed through religious rituals, with performers conducting pujas or prayers for their drums. Notably, some artists begin their Karṇāṭak music concert with a brief prayer for their drum, epitomising the deep spiritual bond between the performer and their instrument.

During my initial foray into mṛdaṅgam playing, I was introduced to two drum strokes unique to this instrument, the *cāppu* and *arai cāppu*. It is the arai cāppu stroke, the important drum stroke that sets the Putukkōṭṭai mṛdaṅgam playing style apart from its Tanjavur counterpart,[4] that presents me with an intriguing challenge. Achieving the distinctive, metallic tone characteristic of the arai cāppu stroke is no easy process. It demanded an intimate interaction with the instrument rather than merely following the prescribed instructions from the mṛdaṅgam teacher.

My learning journey was characterised by persistent efforts spanning several months as I strived to perform the arai cāppu stroke flawlessly. During this period, my mṛdaṅgam teacher, Professor Nelson, emphasised the importance of independent learning in mastering the stroke, as he believed it was something that could not be imparted but rather discovered by the student. The months of trial and error were testing, yet they were instrumental in developing my understanding of the unique relationship between the drummer and the drum.

Every day, I engaged in a sanctified ritual: practising for a dedicated hour to perfect the complex arai cāppu stroke on my mṛdaṅgam. This practice evolved into an enlightening exploration of the profound relationship between a student and the instrument. In this journey, I discovered that even minute alterations to the position of my hand could profoundly transform the tonal quality of the stroke, underlining the vital role of continual adjustment and adaptation.

By playing the stroke and listening attentively to its sound, I would adjust my hand in direct response to its tonality. If the sound seemed too dull (see Figure 7), I would draw my hand closer to my body. Conversely, if the fundamental tone was overly pronounced (see Figure 8), I would distance my hand from my body. This subtle sonic dialogue between my mṛdaṅgam and me proved invaluable. It took a year to understand the physical movements and locate the unique spot on my mṛdaṅgam to execute the arai cāppu correctly (see Figure 9).

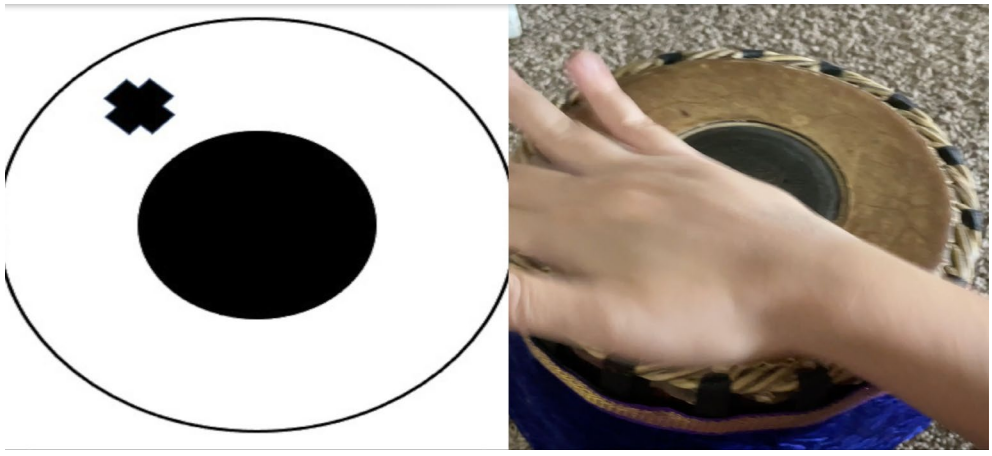

Figure 7. The striking spot on the right drumhead where the drum produces a dull sound.

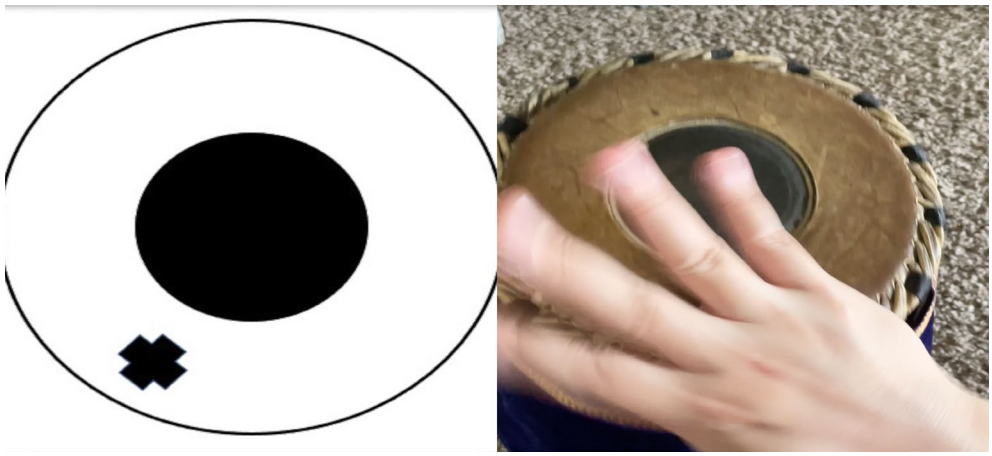

Figure 8. The striking spot on the right drumhead where the drum produces too much fundamental tone.

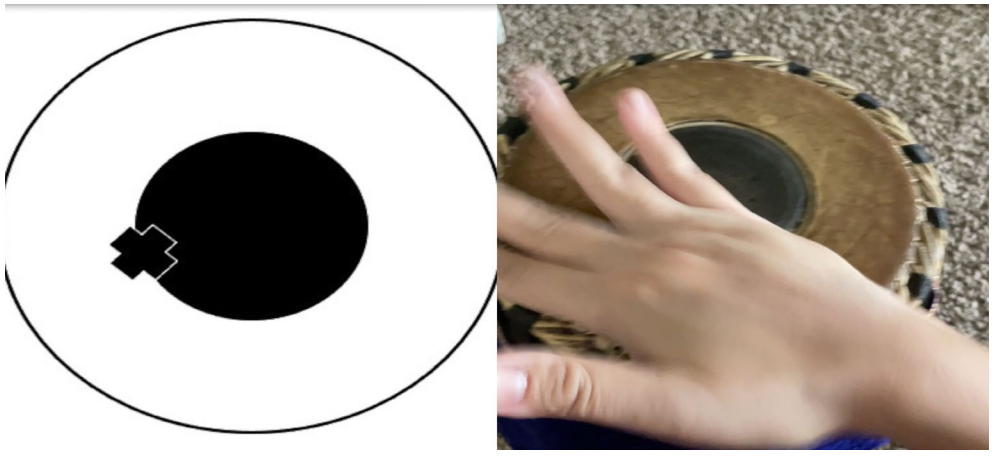

Figure 9. The correct striking spot on the right drumhead where the drum produces the characteristic metallic sound of arai cāppu drum stroke.

Having learnt the fundamentals of the arai cāppu stroke, my training evolved to encompass the more challenging tam stroke. This stroke is a harmonious fusion of two actions: implementing the arai cāppu stroke on the right drumhead while concurrently striking the left drumhead with the *ta* stroke. The *ta* stroke involves a powerful strike on the drumhead using four fingers (see Figure 10).

Figure 10. David Nelson demonstrates the *ta* drum stroke on the left drumhead.

This progression introduced a fresh set of challenges. My responsibility lay in ensuring the prominence of the arai cāppu stroke over the ta stroke and seamlessly blending the two into a single, unified sound (see Figure 12). Given my once-a-week mṛdaṅgam lesson with Professor Nelson, it was imperative that I attentively listen to the auditory feedback from the drum, subsequently modifying my technique to perfect it.

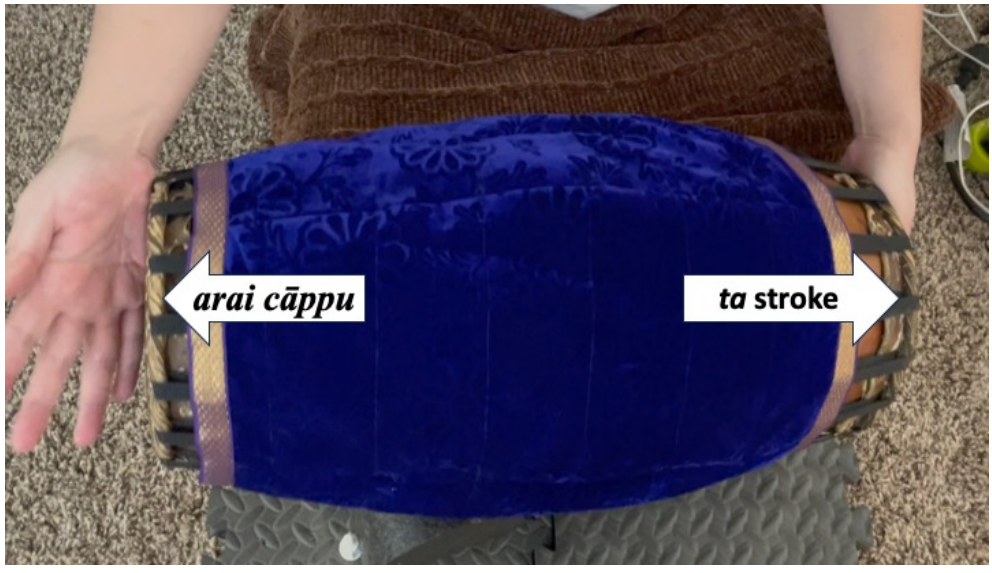

Figure 11. The *tam* drum stroke consists of arai cāppu on the right drumhead and the *ta* stroke on the left.

To deal with these difficulties, I started recording my practice sessions. This way, I could listen back, examine the different sounds of the drum, and check my technique. I then tweaked my timing, strength, and accuracy as needed. This back-and-forth process between me, the drum, and the recording device became a valuable learning aid. It felt like a conversation in sound, which helped me grow as a mṛdaṅgam player. This experience showed me the importance of interaction, both in sound and socially, in learning to play an instrument. It built a deep, rewarding connection between me and the drum.

Conclusion

The guidance of a teacher appears to be particularly beneficial in introducing the expansive world of musical knowledge and honing techniques within world music ensembles in higher education institutions. However, one can't overlook the potential significance of an individual's journey with their instrument. As my anecdotes suggest, certain instrumental techniques might benefit from personal experimentation, potentially eluding full capture through traditional teaching alone. Recognizing the constraints of instructional time and the aim to reach performance readiness, students might sometimes explore their instruments in their own unique ways.

While many scholars and instructors place considerable value on direct human-to-human teaching methods in world music ensembles, there could be a worthwhile discussion about the mentorship role instruments might play. It might be worth considering instruments not merely as tools, but possibly as nonhuman contributors to the learning process, adding another dimension to our understanding of ensemble learning. World music ensembles aim to meet, and at times, exceed institutional standards. Yet, the essence of truly understanding an instrument might not always align perfectly with these academic pressures. Some instruments, such as the saron and mṛdaṅgam, could offer lessons akin to a teacher’s guidance.

The potential connection between students and their instrument, highlighted through sonic communication, could merit further exploration. This relationship might enhance the overall learning experience and foster a deeper connection between musician and instrument. These reflections might prompt a more flexible understanding of the role of musical instruments within world music ensembles.

By acknowledging the possible instructional qualities of musical instruments, we might be opening doors to diverse teaching strategies in world music ensemble education. This perspective could offer a more comprehensive look at the learning dynamics within these ensembles and hint at a teaching approach that embraces multiple facets of musical education.

Endnotes

[1] This article is a revised version of the paper titled "The Pedagogical Life of Musical Instruments," which was originally presented as part of the organised panel *Bi-musicality, Tri-musicality, and Beyond: Reconsidering World Music Ensembles Today* at the 2021 Society for Ethnomusicology Annual Meeting.
[2] I adhere to Mantle Hood's original spelling of "Bi-Musicality" instead of "Bimusicality" (Hood: 1971).
[3] In an interview with T. Viswanathan and Jody Cormack, Brown emphasised the cultural significance of the artists he selected to perform at Wesleyan. He acknowledged that these artists represented their regions' "classical" musical traditions. Brown further revealed that he faced a huge dilemma when choosing the musical traditions that most effectively capture the essence of each geographical area at Wesleyan (Robert E. Brown cited in Viswanathan and Cormack 1997).
[4] The Putukkōṭṭai and Tanjavur styles are the two main styles of *mṛdaṅgam* playing in Karṇāṭak music. At Wesleyan University, David Nelson teaches his students the Putukkōṭṭai style.

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