HYBRID PERCUSSION AND LIVE ELECTRONICS: EXPANDING THE SOUNDSPACE FOR VIETNAMESE JAZZ DRUMMING

MA. Hoang Phu Tung

ABSTRACT

Looking towards the 70th anniversary of the establishment of the Vietnam National Academy of Music, the conference "Jazz and Music Technology" raises contemporary issues regarding the adaptation of Jazz art. In this progression, the Jazz drum kit has transcended its pure timekeeping role to become a center for sound design. This paper delves into the concept of Hybrid Percussion and the application of Live Electronics on stage, with a focus on the Sensory Percussion system. Based on the theoretical foundation of the Jazz Drumming training structure and performance practice, the article proposes a method of mapping native Vietnamese percussion sounds into the electronic system. This approach allows artists to expand their expressive language and integrate internationally while maintaining the core dialogue and improvisation of Jazz. Finally, the paper proposes steps to integrate digital tools into the Jazz Drumming training program, helping students master technology and shape their personal artistic identity.

Keywords: Jazz Drums; Hybrid Percussion; Live Electronics; Sensory Percussion; Vietnamese identity; Jazz training.

1. INTRODUCTION

In the context of technology creating profound changes in the process of creation and performance, the art of Jazz is facing new opportunities and challenges. From the perspective of a performing artist and veteran percussion instructor, technology is not a factor that diminishes the rustic nature of the instrument, but rather a door opening up unprecedented acoustic dimensions. This viewpoint also aligns with the research of Mark Katz (2010), when he asserted that technology does not destroy originality, but rather reshapes how artists interact with sound and native culture.

For decades, Jazz drummers have mainly relied on changing sticks, brushes, mallets, and hand-foot techniques to create tonal colors. However, the emergence of signal-decoding devices and Live Electronics technology has transformed the traditional acoustic drum kit into a "Hybrid Percussion" system. This paper seeks

to answer the question: How can Vietnamese Jazz drummers harness the power of Live Electronics to enrich the soundspace, bringing native rhythms into the contemporary environment without losing the foundational "time feel" and interactive nature of Jazz?

2. THE PRACTICE OF JAZZ DRUMMING PERFORMANCE WITH LIVE ELECTRONICS AND SENSORY PERCUSSION

Live Electronics in Jazz performance involves the real-time sound processing of real instruments, altering timbres and acoustic spaces directly on stage. For percussion, the application of this technology often encounters a major barrier: traditional triggers typically only recognize loud or soft volumes, losing the extremely delicate dynamics of Jazz drums, especially ghost notes or buzz roll techniques.

However, with the advent of audio recognition technologies using machine learning algorithms, such as the Sensory Percussion system, this barrier is gradually being broken. In performance practice and lessons at the Vietnam National Academy of Music, I have applied this system to completely transform the approach to the drumhead. Instead of emitting a single electronic sound, Sensory Percussion allows the drumhead to be divided into different sound zones: hitting the center, playing a rimshot, or striking the shell activates different samples or distinct effect chains. This practice has been demonstrated through the pioneering projects of artist Greg Fox (Lula, 2017), showing that machine learning-based systems allow drummers to master complex electronic sound ranges while fully retaining the characteristic "dynamic" nuances of Jazz.

This proves that digital tools handle encoded data well, but to create music, they must act to expand the player's capabilities, reacting directly to the drummer's agility. The drum instrumentalist can now proactively loop melodic lines, trigger comping chords, or create complex delay effects right while improvising, transforming the drum kit into a polyphonic instrument.

3. SAMPLING TECHNOLOGY AND NATIVE RHYTHMS: THE VIETNAMESE MARK ON THE DIGITAL SPACE

The integration process of Vietnamese Jazz requires artists to position their cultural identity within the contemporary creative space. The creation of a Vietnamese Jazz identity cannot simply stop at the forced quotation of folk melodies, but needs to be subtly transformed through the lenses of harmony,

rhythm, and timbre. In the field of percussion, sampling technology opens a breakthrough direction.

Instead of traveling with a bulky set of traditional percussion instruments (such as trống chầu, mõ, phách, sênh tiền) during tours, Jazz drummers can high-quality multi-sample these instruments and add them to their personal digital libraries. By mapping the timbres of traditional percussion instruments to various trigger-equipped positions across the drum kit, artists can play polyrhythms that blend classic Western Jazz language with Vietnamese folk rhythms. Setting up a standard hybrid drum kit – combining an acoustic drum kit, trigger sensors, and a dedicated sound module – is the core technical solution for artists to realize this fusion on international stages.

This combination brings about a "Vietnamese timbre" in a trendy and streamlined manner, thoroughly solving the logistical problem of bringing traditional bells and drums on tour, while simultaneously transforming traditional musical materials through the language of Jazz, creating new rhythmic and timbral structures that still bear a strong Vietnamese identity. Thanks to technology, percussionists now have new capabilities to design highly personalized "new sounds," ready to participate in contemporary artistic creative practices globally.

4. INTEGRATING DIGITAL TOOLS INTO JAZZ DRUMMING TRAINING

Developing the Jazz major in Vietnam requires every instrumental training system to be centered on musical capability, in which the Jazz Drumming subject requires learners to focus on time feel, hand-foot coordination, timbre control, and improvising with the work's structure. Technology does not replace these skills, but helps the training process become more intuitive and effective. Based on the development orientation of the field, I propose the following applications of technology in teaching the Jazz Drumming subject:

- **Using AI Stem Separation for rhythm analysis:** Apply machine learning software to separate the drum stem from classic recordings. Students can clearly hear every detail of masters like Art Blakey or Elvin Jones, aiding the transcription of solo sections and the analysis of how they interact with the bassline.
- **Developing custom Play-along materials:** Use DAW (Digital Audio Workstation) software to create backing tracks. Learners can customize tempos and chord progressions to practice improvisation outside of ensemble classes,

meeting the training program's requirements for mastering the instrument and building musical personality.

- **Practicing stage sound thinking (Live Electronics):** Introduce the skills of setting up MIDI interfaces and controlling timbres via laptops into the curriculum. Jazz Drumming students need to understand how to work with sound engineers, control frequencies, and master their equipment on a professional stage.

Introducing this content into the curriculum aims to directly address a gap in the current music education system, where learners often lack an in-depth practical environment for direct interactive music technology on stage.

- **Creating Repertoire with Vietnamese materials:** Encourage talented students and graduate learners to use Hybrid Percussion to compose and arrange Jazz works with a significant proportion of Vietnamese materials, aiming to bring the Vietnamese Jazz repertoire into graduation exams and performances.

CONCLUSION

The Jazz drum kit has come a long way from the rudimentary homemade percussion setups in New Orleans to the complex Hybrid Percussion systems of today. Music technology, especially Live Electronics and smart sensor devices, is ushering in a new era where percussionists truly become sound sculptors.

For the Jazz major in Vietnam to continue developing solidly, proactively, and forging its identity, integrating technology into training and performance practice is an inevitability. The combination of traditional percussion and the digital soundspace will help generations of Vietnamese Jazz Drumming artists both maintain the foundational "dialogue and instant interaction" of Jazz and confidently bring native rhythms to the international stage. The core of this process still lies in the artist's ears, mind, and heart; the most modern tools ultimately only serve the most primal need: telling one's own musical story.

REFERENCES

- Bullock, J., Coccioli, L., Dooley, J., & Michailidis, T. (2013). Live Electronics in Practice: Approaches to training professional performers. Paper presented at the International Computer Music Conference (ICMC).

Link:https://www.researchgate.net/publication/259434558_Live_Electronics_in_Practice_Approaches_to_training_professional_performers

- Katz, M. (2010). Capturing Sound: How Technology Has Changed Music (Revised Edition). University of California Press.

Link: https://www.jstor.org/stable/10.1525/j.ctt1pp8n2

- Lula, L. (2017). Greg Fox, new shapes of avant-garde drumming. CLOT Magazine.

Link: https://clotmag.com/sound/greg-fox

- Andertons Music Co. How to Create A Hybrid Drum Kit.

Link: https://www.andertons.co.uk/how-to-create-a-hybrid-drum-kit