

## **Africa-Sense Music Education and Creativity: A Focus on Mortar and Pestle Experimental Music**

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### **ABSTRACT**

*The kitchen utensils, mortar and pestle, are not considered as musical instruments despite the fact that they produce unique rhythms. Rhythm is an important element in African Music that gives creative freedom to the instrumentalist and embellishes the melody in musical production. This study examines the percussive rhythmic patterns that the mortar and pestle produce when they are used in the kitchen or around the house to prepare foods/condiments. Exploring the descriptive, experimental and analytical research methodologies to describe the creative components that blend the beats created by the pounding of the mortar to fit into musical production, the paper adopts Riemann's Rhythmic Theory framework. The study reveals the extent to which art, craft and music can complement each other to achieve a neo instrumental accompaniment for performances. It concludes that mortar and pestle can make good percussive rhythmic patterns like other musical instruments to keep both free and fixed tempo in a well-composed music. The paper recommends that both producers and composers can creatively make use of the mortar and pestle to boost creativity in the Nigerian entertainment industry.*

**KEYWORDS:** *African Music, creativity, experimental, mortar and pestle, performance, rhythmic theory.*

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### **I. INTRODUCTION**

Mortars and pestles are not common in musical productions as they only have a long history in cooking and grinding. This paper is an experimental musical performance that will help us to analyse, note and document the creative rhythmic percussive nature of mortar and pestle. A mortar is a strong vessel, commonly in the form of an inverted wooden or stone bell, in which substances are pounded or crushed with a pestle. Pestle is an implement for pounding and breaking of substances in a mortar.

The numbers of instrumental resources used throughout Africa as a whole and Nigeria in particular are many. This study explores the descriptive, experimental and analytical research methodologies to describe the creative components that blend the beats created by the pounding of the mortar with the pestle to produce rhythmic flow that can fit into musical curtain raisers. In it, we will also establish that the sound of pounding defers from each other in terms of the shapes and the weights. A collection of four different mortars and pestles will be considered. The study will not focus on the process of manufacturing mortar and pestle.

The study has set core research questions to answer as follows:

What are the methods and essential features that deduce that mortar and pestle can be used as a set of musical Instruments?

What are the rhythmic percussive musical patterns and their modes to be analyse and annotated in the experimental study?

What are the tools (amplitude, spectrum and matrix, among others) that will be used to analyse this experimentation?

What are the factors affecting the playing techniques of the mortar and pestle?

What must be done to promote and preserve this mortar-pestle experimental music?

**Photo 1: Mortar and Pestle**



*Credit: Author*

This paper is a first step towards more experimental study on mortar and pestle as regards music. It will examine the degree of inter-relationship between instrumental music, art and craft with culture with a view to establishing that there can be no thought of culture without reference to cultural music. The study reveals the extent to which experimental music can be discovered for recreational purposes. It concludes that mortar and pestle can produce good rhythmic patterns in instrumental and dance music if properly composed.

## **II. LITERATURE REVIEW/ THEORETICAL FRAMEWORK**

Some scholars have written on mortar and pestle; but not in the African experimental musical command performance's pattern captured in this study. According to Pathak (2017, p.34), "pestles and mortars have been used for many centuries to grind drugs and food items. It started as a big hollow in a rock. Pharmacists in making medicines have used mortar and pestle." Nevertheless, Pathak never considered them as potential musical instruments, as examined in this work. Pathak (2017) admits that mortar and pestle for many centuries have been use for grinding, which forms the rhythmic pattern we are looking at in this experimental analysis.

On the other hand, Murray (2014, p. 2) submits that, the primary and most important function of ground stone tools throughout human history has been to process foods by reducing the particle sizes and increasing surface area of food material, facilitating more efficient digestion by the human gut after consumption.

This is another importance of the mortar and pestle, considering the preponderance of genetically modified food items in the market. It is instructive that Murray (2014) appropriately captures the domestic (culinary) use of the mortar and pestle, basically for processing foods by reducing the particle sizes. How this relates to this study is the rhythmic nature of the pounding or grinding. This is because rhythm is one of the key elements of music.

**Photo 2: Women pounding with Mortar and Pestles**



*Credit: Author*

The study adopts the *rhythmic theory* as propounded by Riemann (2008) as the theoretical framework. The theory posits that, the perception-oriented theory of metre performs a small Copernican revolution, and instead in the verse structure, it places the constraints in the reader's *rhythmic competence*: the utmost limit of rhythmicity is the reader's ability or willingness to perform the verse line rhythmically. Such a formulation requires a systematic theory of *rhythmical performance* (Riemann, 2008, p.2)

According to Riemann (2008), *rhythm* is the philosophy of life. Everything that happens in life has one rhythmic pattern or the other attached to it.

Good-all (2006, p.4) logically explains the theory that, “human rhythm recalls the regularity with which we work and the heartbeat.” How we work and how the heartbeats are all free rhythmic actions. In this study, we shall be looking at the rhythmic flow of the mortar and pestle in a creative performance. In the analysis of Terry (2018, p.3), the term, *rhythm*, has more than one meaning. It can mean the basic, repetitive pulse of the music, or a rhythmic pattern that is repeated throughout the music. It can also refer to the pattern in time of a single small group of notes.

In this context, Ajewole (2010, p. 91) submits that, “rhythm helps us to understand the importance of time signatures.”

**Photo 3:** *The Pestles pounding*



*Credit: Author*

To count the beats in a piece of music, we must understand the two components of rhythm: meter and tempo. Tempo is simply a description of how fast or slow a piece of music is. Meter is the regular pattern of beats in a song and how those beats are stressed. Time signatures are fractions that describe the meter of a piece of music. The top number tells us how many beats in each measure. The bottom number tells you what kind of note each beat is. For instance, if the bottom number is 1, that means whole notes and if the bottom number is 2, that means half notes. Similarly, 4 means quarter notes and 8 means eighth notes.

To Gardner (2015, p.5), intelligence is “a bio psychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture.” Gardner (2015) believes that careers that suit those with high bodily-kinaesthetic intelligence include athletes, dancers, musicians, actors, builders, police officers and soldiers. Although these careers can be duplicated through virtual simulation, they will not produce the actual physical learning that is needed in this intelligence; but what concerns us is the rhythmic aspect of the bodily-kinaesthetic intelligence.

Furthermore, Scholes (1977) observes that the “perception” and “abstraction” of rhythmic measure is the foundation of human instinctive musical participation, as when we divide a series of identical clock-ticks into “tick-tock-tick-tock.” The summation, in this line of argument, is that rhythm does not just flow; but it moves in value according to the notes value. It is therefore left for us to know the beat and analyse it.

### **III. RESEARCH METHODOLOGY**

The method of conducting this research is experimental, analytical and descriptive. This research was carried out at the Department of Theatre Arts, Faculty of Arts and Education, University of Africa Toru-Orua, Bayelsa State, Nigeria. Four mortars were used for the experimental performance and certain substances were put in each of the mortar to make different sounds when pounding as will be known in the analysis. The P8W Gionee mobile phone is use to record the performance and the different poundings sounds in the experiment for analysis.

As part of the set down method of musical analysis, we shall be considering the following:

*Title:* The title tells or points the reader to the main idea in a work.

*Medium:* The medium is all the tools or equipment we shall be using for this experiment, for example, the mortar and pestle among others.

*Style:* It is the features in the experimental production, which will be percussive rhythm with melodic, harmonic accompaniment.

*Sketch:* The breakdown of everything into fragments in the experimental music that we are analysing.

*Form:* It is the design that will be used in the composition, for example, Rondo form used most for sonata.

*Meter:* It is the unit of beat, time signature in the composition.

*Key Signature:* The pitch of the tune like F major, B major, and so on.



*Tempo:* It is the speed consideration in the work, which could be slow, moderate or fast.

*Texture:* It is the rhythmic moves, like polyphonic and others.

*Length:* It is the number of bars or measures used in the composition.

*Mood:* It is the state of the mind conveyed by the music, which may be happy, sad or both.

*Audience:* It is the targeted population of the study.

### **ANALYSIS OF THE EXPERIMENTAL MUSICAL PERFORMANCE OF MORTAR AND PESTLE**

The study will be using descriptive, experimental, and analytical methods to explain mortar and pestle musical instrumental performance. Mortar and pestle when used in pounding is seen to perform the same rhythmic function as idiophone in an African musical performance, therefore we shall classify them into an idiophone family of musical instruments. An idiophone is a self-sounding instrument; it may be broadly defined as any instrument upon which a sound may be produced without the addition of a stretched membrane or a vibrating string or reed.

Pounding generally gives us the sound of wood block if no substance is added to the mortar, which is a good example of an idiophone. The rhythmic percussive sound patterns from mortar when stroke by the pestle is like *kpom kpom kpom* or *koi koi koi* depending on the linguistics description for the substance and pressure. When notes and their values are considered, we can have some creative sound as shown in Fig. 1 below. The percussive open score contains four mortars and pestles notes patterns.

Mortar 1 makes use of minim (two beats) throughout showing the pattern to be followed; mortar 2 makes use of crotched (one beat). Mortar 3 is a mixture of crotchet (one beat) and quaver (half beat) to form a different rhythmic pattern from mortar 1 and 2. The last mortar which is four, starts with quaver, crotchet with a minim rest in the first bar, then continues with semibreve to the end. The analytical measures are five bars and the modes fall within the lines and spaces of the music score which are on **F, A, C** and **B**. The experiment is an audio-visual performance and there is every need to document it as such.

The factors affecting the playing techniques of the mortar and pestle are the external factors on the beat organization like the 4/4 time moving according to the values of the notes. What must be done to promote mortar and pestle music continuity is for more studies to be conducted and more creative productions.

*Fig. 1: Mortar and Pestle Experimental Music*



*Credit: Composed by Samuel Jackson Udo*

**Title:** The subject of this study is the experimental music of the mortar and pestle

**Medium:** Here, the researcher chooses the mortar and pestle because of its availability. In order to make the performance more entertaining we shall at some point bring in other musical instruments accompaniment like the wooden gong, jazz drums, bass guitar, keyboard, flute and saxophone, among others.

**Style:** The style of the performance will be like a curtain raiser or command performance in the form (ABCA) patterns as shown in Fig. 1, Fig. 2, and Fig. 3 and back to Fig. 1 then end.

**Sketch:** Performance does not just happen; we put in serious arrangements and certain preparations generate attitudes and moods. We have to set our objective right because pounding of the mortar with pestle alone may not be quite entertaining. The mortar and pestle performance will encompass music and dance performance in a cultural manner. It is important for us not to consider intensity and depth of sound production in this sketch, but only on the rhythmic flow. The performance starts with drums rolling. Four males and four females dances into

the stage according to the calling of the drums. The males carry the mortars and the females carrying the pestle. The females with the pestle go first followed by the males with the mortars in an alternating pattern, dancing in zig zag canoe paddling movement in left-right and left-up patterns.

Next, the wood block will start tabbing 6/8 beat and the male dancers will arrange the mortars on stage, then follow the rhythmic pattern as given by the wood block as shown in Fig. 1. The performance will be in four sessions. The first part is the percussive display with the woodblock. The second part is where other instruments, the flute alto saxophone and trumpet, come in to create melodic and harmonic effect as shown in Fig. 2. The blowing of the wind instruments starts after a measure.

It is pertinent to note that the selection of instruments for the experimental music is according to availability. The drums and the wood block help to make heavy percussive rhythm in the sound accompanying the experimental music. The third part of the session is the peak, where a fast tempo is introduced as shown in Fig. 3. Then, the female dancers display some pounding dance steps, appropriately and artistically choreographed, after which the performance moves to the fourth part. This is the call and response pattern to end the performance.

**Meter:** The experimental music performance makes use of 4/4 common meter together with 6/8 time throughout for easy coordination with fixed and free rhythmic pattern.

**Key Signature:** The keys for accompaniment shall be in the natural key of C major.

**Tempo:** The tempo starts in moderate pattern and increases gradually into adagio.

**Texture:** The experimental music performance uses polyphonic movements in the creation of the rhythmic beats.

**Length:** For the purpose of analysis, we shall be considering only five measures for Fig. 1, five measures for Fig. 2, and six measures for Fig. 3. Altogether, there are sixteen measures.

**Mood:** The mood of this experimental mortar and pestle music performance is a happy dancelike display of creativity.

**Audience:** Every work has its targeted population; and this study can fit into a command performance for any select audience.

*Fig. 2. Mortar and Pestle Experimental Music in 6/8 Poly-rhythmic Structure.*

*Credit: Composed by Samuel Jackson Udo*

**Fig. 3.** Mortar and Pestle Experimental Music in 6/8 Time.

Credit: Composed by Samuel Jackson Udo

#### IV. RESULT

In Fig. 1 we can observe that we have mortar 1, 2, 3 and 4 noted in a standard rhythmic pattern 4/4 time. The idea is to have different sound production from each of the mortars. Mortar 1 plays minim time, mortar 2 plays crotchet time, mortar 3 is a mixture of crotchet and quaver, in order not to create a kind of hockey technique with what others are playing; while mortar 4 moves in semibreve. Hockey technique is like a locomotive movement or rhythmic call and response to create different pitches that blend to make the performance livelier. Fig. 2 carries a 6/8 polyrhythm joining the 4/4 beats to create a shift of accents making the music more interesting. Bars two to five carry the motive in the song; motive is the short idea that starts a song. At this point all instruments come into the performance. Fig. 3 shows the climax of the performance, as shown from bars nineteen with ostinato, which is a continued repetition of a short melodic line and syncopation which is a kind of jazzed up effect.

#### V. CONCLUSION

We have a lot to learn about the production of music using mortar and pestle. From our analysis, it has been established that it is possible to use mortar and pestle for harmonic music production. Researchers can expand and create more articles on the use of mortar and pestle for theatre music and sound production. As a point of fact, in well-planned musical production, mortar and pestle can make good percussive rhythmic patterns like other musical instruments to keep both free and fixed tempo. Consequently, the paper recommends that both producers and composers can experimentally use mortar and pestle to creatively boost musical productions in the Nigerian entertainment industry.

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